

**EVALUATION OF**  
**IMCI**  
**pre-service education**

**USER GUIDE TO DATA ENTRY  
AND ANALYSIS**



**Annex 2. Assessment of student knowledge and skills.  
User guide to data entry and analysis**



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## Introduction

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This guide has been designed to provide instructions on the use of the data entry and analysis programs developed by the WHO Regional Office for the Eastern Mediterranean for the assessment of student knowledge and skills within the context of evaluations of IMCI pre-service education. The user may refer to the Evaluation guide for further information on the evaluation, data management, indicators and data analysis. A library of multiple-choice questions (MCQs) and case scenarios for the knowledge test is available in the Question bank of the IMCI pre-service education package.

This user guide provides examples and follows them through step by step with short instructions and many illustrations—screenshots of the programs—to help the user learn by practising.

The first section deals with data entry and analysis of the student knowledge test—consisting of MCQs and case scenarios—using a program based on Microsoft Office Access<sup>1</sup> and developed for this specific purpose. This program requires no pre-existing knowledge of Access, as all commands are presented in a simple, user-friendly menu. To be able to use this program, you need to have Microsoft Office Access installed on your computer. The program is compatible with both Microsoft Office Access 2007 and Access 2003.

The second section deals with the data entry and analysis of the student skill test—the observation of case management—using a program based on Epi Info<sup>™2</sup>. This program can be run on any computer.

Program files and Epi Info<sup>™</sup> 6 are available in the enclosed CD-ROM.

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<sup>1</sup> A relational database management system, Microsoft Corporation.

<sup>2</sup> A word processing, database and statistics program for epidemiology on microcomputers, Centers for Disease Control and Prevention, Atlanta, Georgia, U.S.A. and World Health Organization, Geneva, Switzerland.

## Knowledge test

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### Copying files to your computer

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For the knowledge test (MCQs and case scenarios), create a new folder on your computer and copy in this folder the following two files that are in the folder “**ACCESS practice**” of the enclosed CD ROM:

- **Practice develop MCQ\_CS.mdb**
- **CAH\_info.xls**

It is important that both files are in the same folder for the Excel file to work. The Excel file “**CAH\_info.xls**” should not be modified in any way.



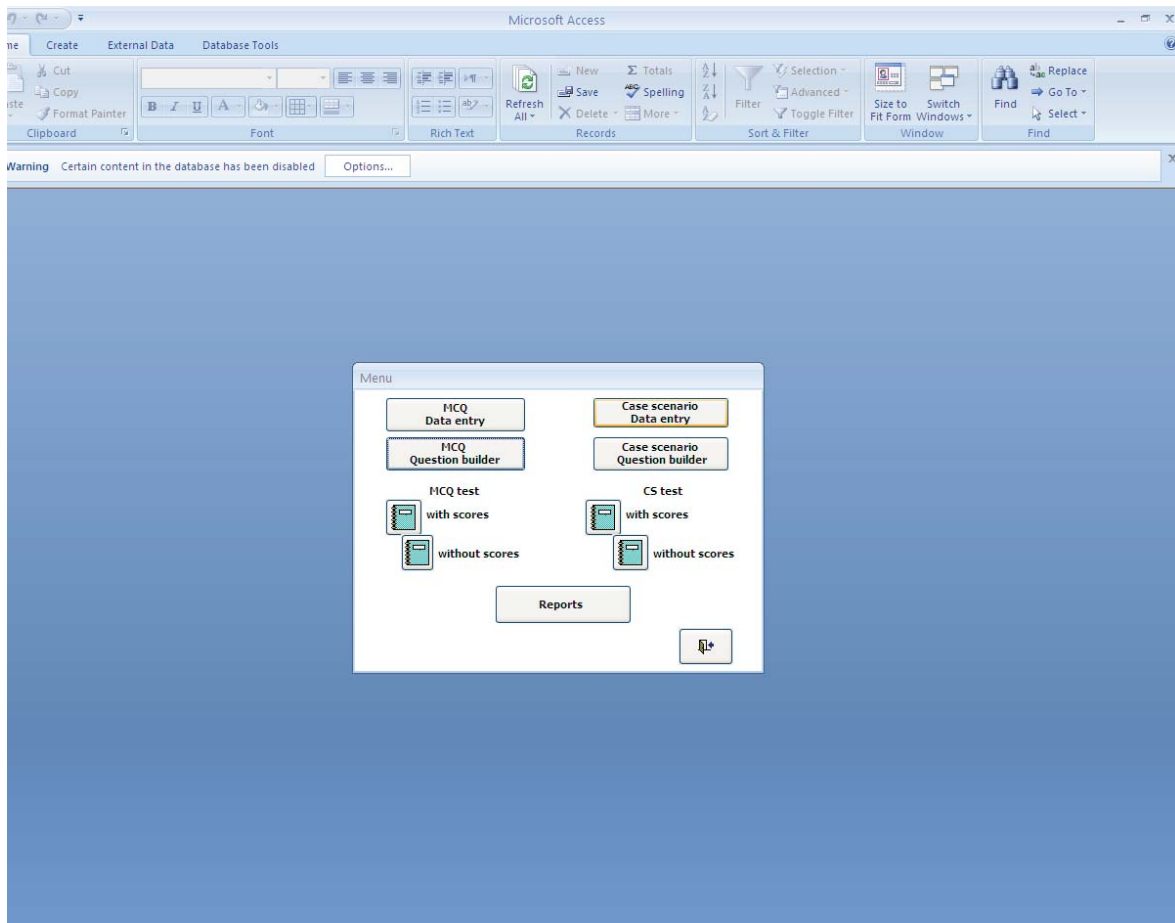
## Instructions for users of Microsoft Office Access 2007

The instructions in this guide apply to both Microsoft Office Access 2007 and Access 2003.

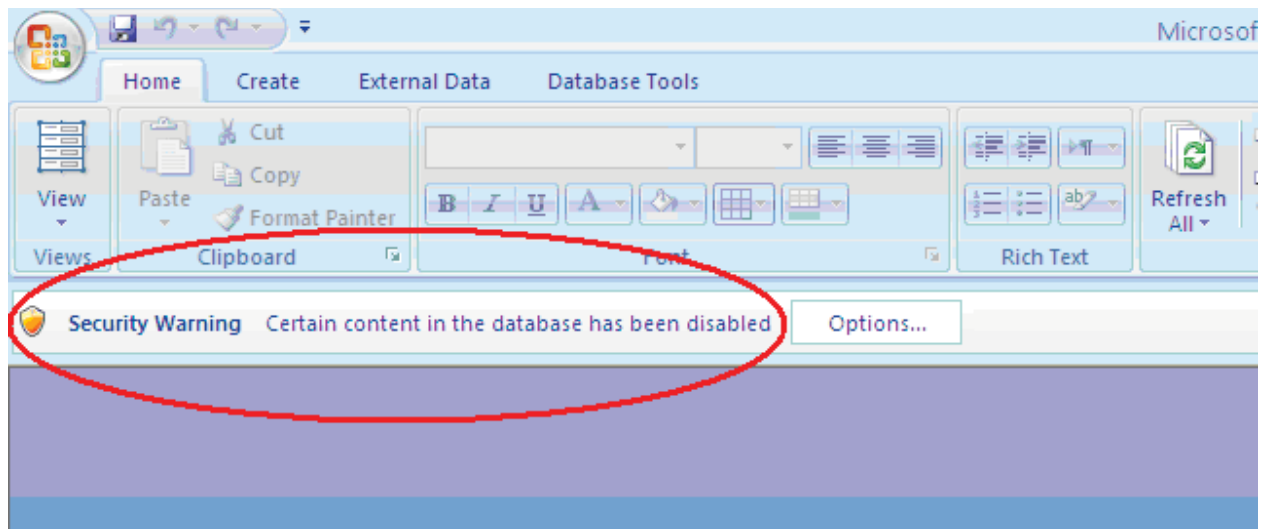
- If you have Access 2003 installed in your computer, then skip this section and read the next section, “Instructions for users of Access 2003”;
- If you have Microsoft Office Access 2007, read this section first and then go to section “Practising entering the MCQs and case scenario test”.

If you have Microsoft Office Access 2007 installed on your computer, when you double click on the Access file to open it, you need to enable its content first. To do so, follow these few simple steps:

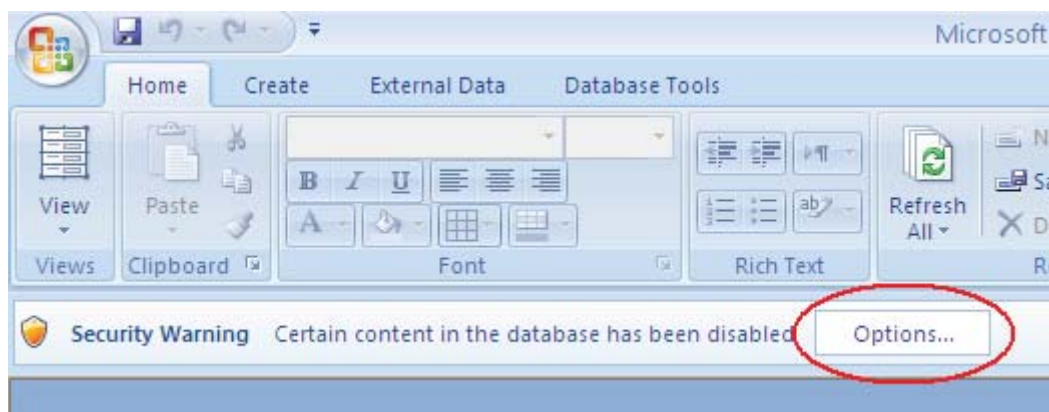
- Double click on the Access file; the following screen appears:



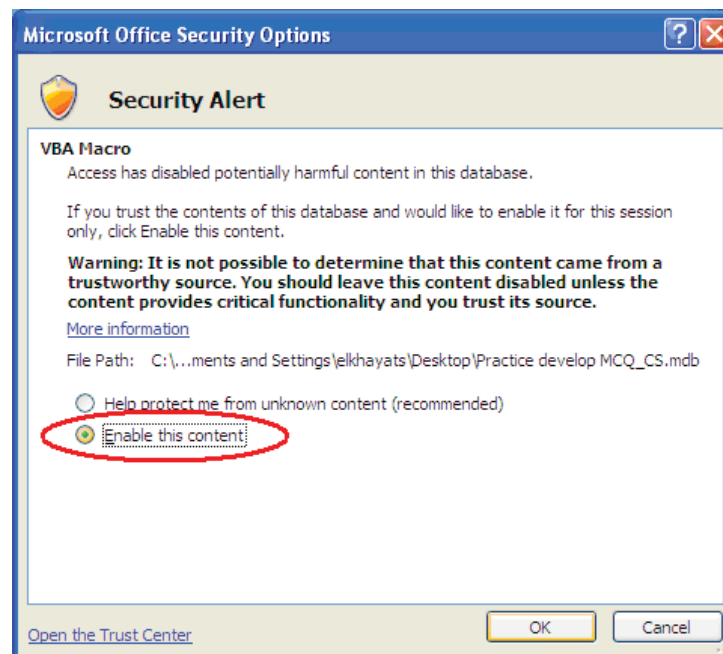
The screen displays a “**Security Warning**” message on top:



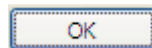
- To enable content, click on “**Options**”:



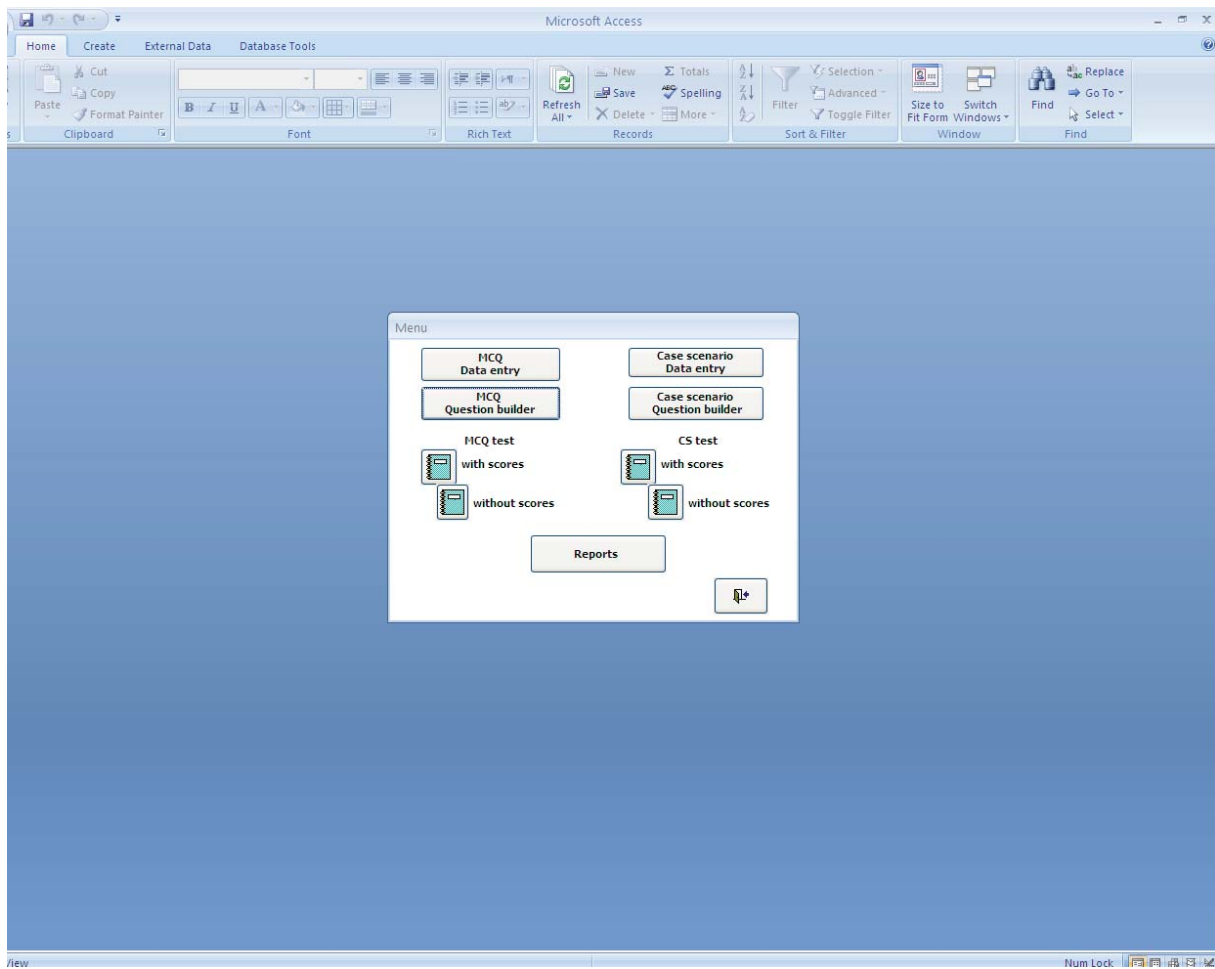
- The “**Security Alert**” window will be displayed. Click on the second option “**Enable this content**”, as shown below:



- Then, click on “**OK**”:



The screen will go back to the original one, no longer displaying the security warning on top, ready for you to use the program:



Irrespective of whether you have Access 2003 or Access 2007, the program will run smoothly and follow the same commands, as for data entry and analysis you will be using only the commands displayed in the program menu window rather than the Access menu.

Now, you can go and read the section “Practising entering the MCQs and case scenario test”.

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 **Reminder for users of Access 2007:**

**Always enable content when opening the program Access file as described in this section, otherwise the menu will be inactive and not work.**

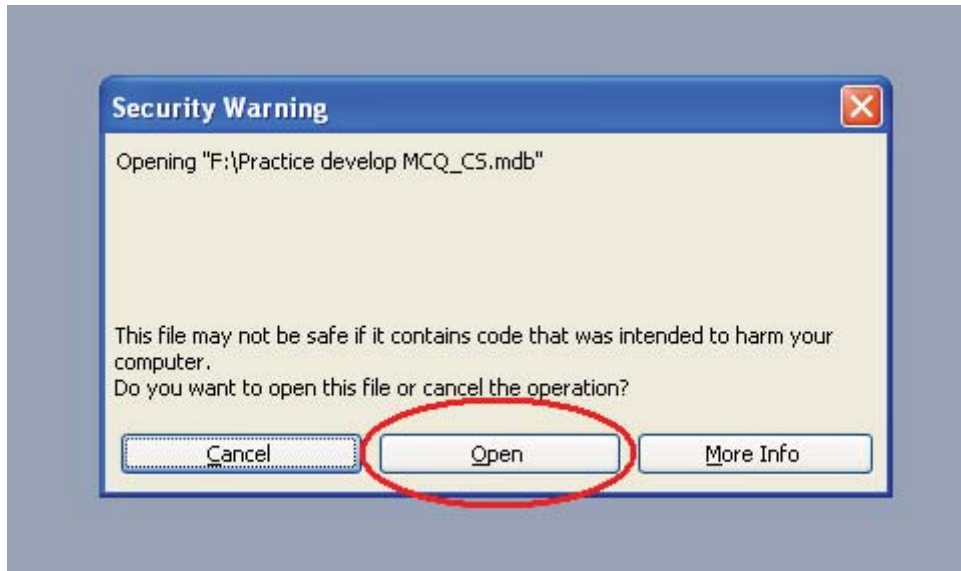
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## Instructions for users of Access 2003

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If you have Access 2003 installed in your computer, when you double click on the Access file to open it, the following security warning will be displayed:



As the Access file enclosed in the CD-ROM is safe, click on “**O**pen”.


If, after this, a new warning message appears, click “**Y**es” to continue and open the file.

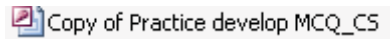
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## Practising entering the MCQ and Case scenario test

In this exercise, you will enter two MCQs and one case scenario with two questions in the ACCESS program for the knowledge test. The screenshots shown here are from the Access 2007 version and are very similar to those of the Access 2003 version. Menu windows look almost identical.

First, it is advisable to make a copy of the original ACCESS file with a different name, to safely back up your work in case something goes wrong:

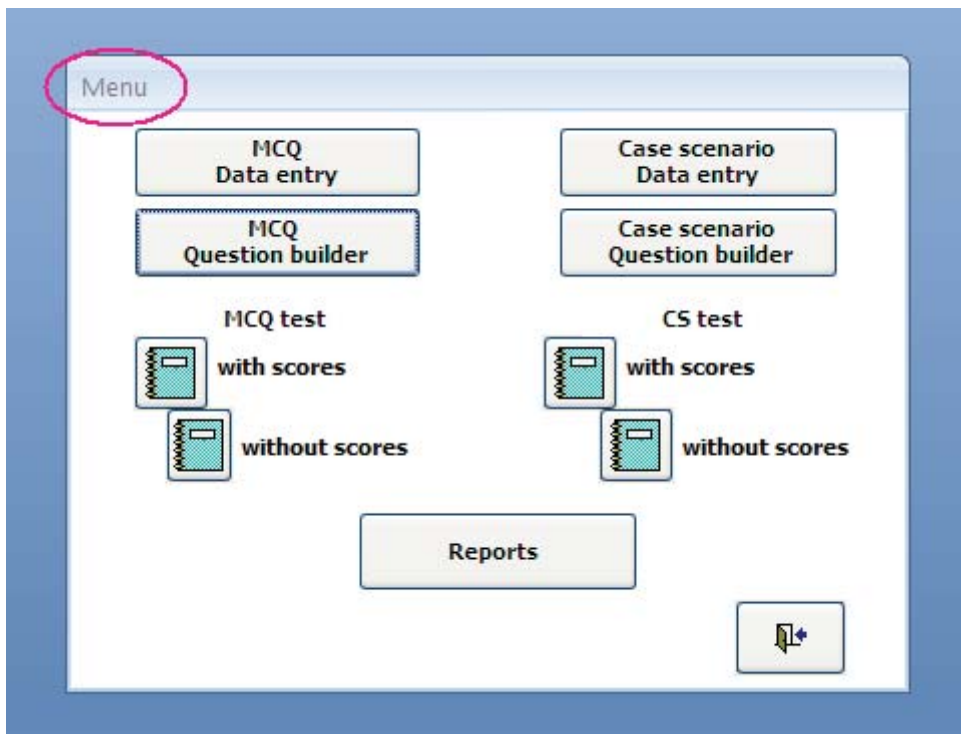
- right click on the file “**Practice develop MCQ\_CS**”; 
- select “copy”;
- then right click the mouse again and select “Paste”.

The new file “**Copy of Practice develop MCQ\_CS**” will appear: . Work on this file.

Let’s open the menu.

- Double click on this new file “**Copy of Practice develop MCQ\_CS**”
- A security warning message appears. To open the file, deal with this message as explained in the previous sections depending on whether installed in your computer you have Microsoft Office Access 2007 (you need to enable content) or Access 2003 (you will choose to open the file).

The “**Menu**” window is displayed on the screen:



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**Now, let's enter the MCQs in the ACCESS program.**

---

Below is the first of the two MCQs to be entered. Follow the instructions to go through all the steps carefully, so that you will then be able to enter the second MCQ.

**MCQ 1**

---

*Under IMCI guidelines:*

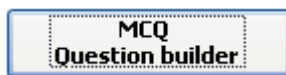
**A1. Which of the following age groups do the IMCI clinical guidelines address?**

*(circle only ONE answer)*

- a. Birth up to 5 years
- b. 2 months up to 2 years
- c. 1 week up to 5 years
- d. 2 months up to 6 years

- Click on the second button from the top on the left “**MCQ Question builder**” to create your MCQ

test:



The following screen appears:

The first item on top is “**Category**”.

- Click on the small arrow on the right to view the lookup dropdown list and select “**A. IMCI guidelines**”, as show below:

The screenshot shows the 'Question builder' window. On the left, there are three sections: 'Category', 'Question', and 'Options'. The 'Category' section has a dropdown menu that is open, showing a list of categories: 'A. IMCI guidelines', 'B. ASSESS AND CLASSIFY', 'C. ASSESS FEEDING PROBLEMS', 'D. IDENTIFY TREATMENT', 'E. COUNSEL', 'F. YOUNG INFANT ASSESS AND CLASSIFY', 'G. YOUNG INFANT IDENTIFY TREATMENT', and 'I. text'. The 'A. IMCI guidelines' option is highlighted. To the right of the dropdown is a button labeled 'Add new category'. Below the dropdown list is a search bar and a 'Record: 1 of 1' indicator. At the bottom, there are navigation buttons for back, forward, and search.

- Now, move to the next field “**Question**” and type the first question, as shown here:

The screenshot shows the 'Question builder' window. The 'Category' dropdown is now closed and shows 'A. IMCI guidelines'. The 'Question' field is now populated with the text: 'A1. Which of the following age groups do the IMCI clinical guidelines address? (circle only ONE answer)'. The 'Options' field is empty. The 'Add new category' button is still visible. Below the question field is a search bar and a 'Record: 1 of 1' indicator. At the bottom, there are navigation buttons for back, forward, and search.



- Next, move the cursor into the “Options” field and enter the first option:

Question builder

Category: A. IMCI guidelines Add new category

Question: A1. Which of the following age groups do the IMCI clinical guidelines address? (circle only ONE answer)

Options

..	a. Birth up to 5 years	0
*		0

Record: 1 of 1 No Filter Search

Navigation: [Home] [Back] [Next] [Forward] [Print]

Record: 1 of 1 No Filter Search

Automatically, a new row appears, marked with an asterisk on the left.

- Click the TAB key on the keyboard to move to the next column (where a 0 shows) and enter the score. For more details on scores, refer to the Evaluation guide’s section on “Scoring tasks and answers” under Section 8. “Analysis and presentation of findings” –8.2 Quantitative findings”. If an option is correct, you will enter a positive score (e.g. 1); if the option is wrong, then you will enter a negative score (e.g. -1). Since this option is correct, enter 1:

Question builder

Category: A. IMCI guidelines Add new category

Question: A1. Which of the following age groups do the IMCI clinical guidelines address? (circle only ONE answer)

Options

..	a. Birth up to 5 years	1
*		0

Record: 1 of 1 No Filter Search

Navigation: [Home] [Back] [Next] [Forward] [Print]

Record: 1 of 1 No Filter Search

- Press the tab key again, to take you to the next option row. Enter “b. 2 months up to 2 years”.
- Press the tab key again and enter -1 as this is an incorrect option:

Question builder

Category: A. IMCI guidelines Add new category

Question: A1. Which of the following age groups do the IMCI clinical guidelines address?  
(circle only ONE answer)

Options		
	a. Birth up to 5 years	1
	b. 2 months up to 2 years	-1
*		0

Record: 2 of 2 No Filter Search

Record: 1 of 1 No Filter Search

- Enter the remaining 2 options “c. 1 week up to 5 years” and “d. 2 months up to 6 years”, each with a negative score of -1 as they are both incorrect.

You have completed entering the first MCQ with four options. Your screen should look like this:

Question builder

Category: A. IMCI guidelines Add new category

Question: A1. Which of the following age groups do the IMCI clinical guidelines address?  
(circle only ONE answer)

Options		
	a. Birth up to 5 years	1
	b. 2 months up to 2 years	-1
	c. 1 week up to 5 years	-1
	d. 2 months up to 6 years	-1
*		0

Record: 4 of 4 No Filter Search

Record: 1 of 1 No Filter Search

Note that the last row is empty and is marked with an asterisk on the left. This means that only the rows above will be displayed in the form and used for the calculations of the indicators.

Let's now enter the second MCQ.

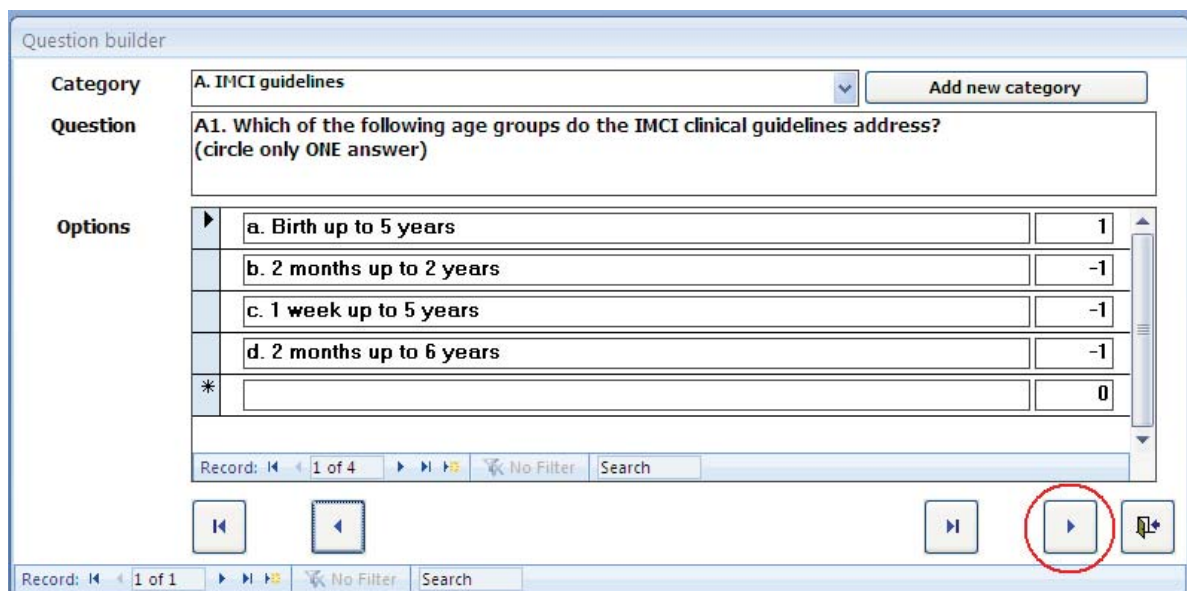
## MCQ 2

Under “Assess and classify”:

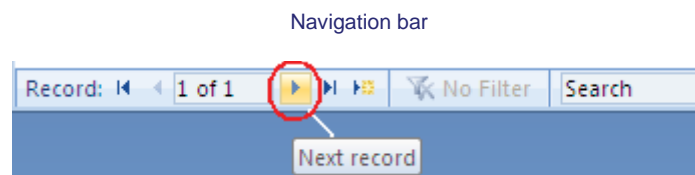
**B1. According to the IMCI guidelines, which of the following main symptoms should always be assessed in every sick child age 2 months up to 5 years? (circle all the correct options)**

- a. Cough
- b. Abdominal pain
- c. Fever
- d. Skin infection
- e. Diarrhoea

- To enter the second MCQ, click on the arrow pointing to the right at the bottom right of the window (see the arrow button circled in red):



You may also click on the small arrow pointing to the right in the Navigation bar at the bottom left of the window:



The new screen that appears is ready for you to enter next question.

The screenshot shows the 'Question builder' interface. It has three main sections: 'Category', 'Question', and 'Options'. The 'Category' section has a dropdown menu and an 'Add new category' button. The 'Question' section is a large text input field. The 'Options' section has a list of options with a '0' in a small box next to it. At the bottom, there are navigation buttons and a status bar showing 'Record: 1 of 1' and 'No Filter'.

This time the “Category” to be selected is “**B. ASSESS AND CLASSIFY**”:

The screenshot shows the 'Question builder' interface with the 'Category' dropdown menu open. The menu lists several categories: A. IMCI guidelines, B. ASSESS AND CLASSIFY (highlighted), C. ASSESS FEEDING PROBLEMS, D. IDENTIFY TREATMENT, E. COUNSEL, F. YOUNG INFANT ASSESS AND CLASSIFY, G. YOUNG INFANT IDENTIFY TREATMENT, and I. text. The 'Category' label is circled in red. The 'Question' and 'Options' sections are empty. At the bottom, there are navigation buttons and a status bar showing 'Record: 1 of 1' and 'No Filter'.

- Repeat all the steps followed for the first MCQ. Once you are finished, your screen should look like the following:

Question builder

Category: B. ASSESS AND CLASSIFY Add new category

Question: B1. According to the IMCI guidelines, which of the following main symptoms should always be assessed in every sick child age 2 months up to 5 years? (circle all the correct options)

Options:

a. Cough	1
b. Abdominal pain	-1
c. Fever	1
d. Skin infection	-1
e. Diarrhoea	1
*	0

Record: 5 of 5 No Filter Search

Record: 2 of 2 No Filter Search

As this is the last MCQ that we enter in this exercise, you need to close the form.

- To close the screen, press the icon at the bottom right showing an ajar door  :

Question builder

Category: B. ASSESS AND CLASSIFY Add new category


Question: B1. According to the IMCI guidelines, which of the following main symptoms should always be assessed in every sick child age 2 months up to 5 years? (circle all the correct options)

Options:

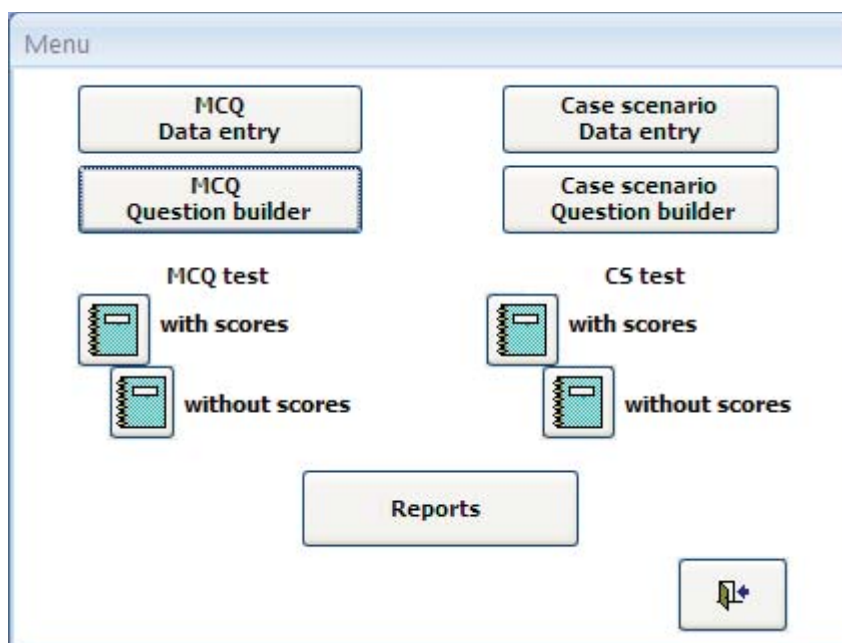
a. Cough	1
b. Abdominal pain	-1
c. Fever	1
d. Skin infection	-1
e. Diarrhoea	1
*	0

Record: 5 of 5 No Filter Search

Record: 2 of 2 No Filter Search



The menu screen will be displayed:



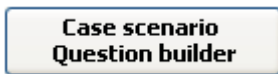
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**Now, let's enter the two questions of the case scenario.**

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## Case scenario

- Click on the “Case scenario Question builder” button, second from the top to the right:



The following screen will appear:

You will enter the case scenario below with two questions, following the instructions given in the next few pages.

### Case scenario 1 (Fatima)

Child age 2 months up to 5 years

Fatima is a 25-month-old baby girl. She is brought to the facility because she has been asleep since the morning and very difficult to wake up. This is an initial visit for this problem. When asked, her mother says that Fatima has not vomited and had no convulsions, has no cough, no throat problem, no ear problem, but has had watery diarrhoea for about six days. There is no blood in the stools. She weighs 10.5 kg. Her axillary temperature is 37.0 °C. You assess Fatima: she has no convulsions during your assessment; she does not watch your face when you talk, does not look at the mother either and shows no interest in what is happening around her. Her eyes look sunken. When you offer her some water with a spoon, the water runs out of her mouth. Her mother says that she has been like that since this morning. You also pinch Fatima’s skin and see that it goes back very slowly. There is no cholera in the area. Fatima has no visible severe wasting, no oedema of both feet, no palmar pallor. You complete your assessment and find no other problems.

**S.1.1 Which general danger signs does Fatima have? (circle all the correct options)**

- Unable to drink or breastfeed
- Vomiting everything
- History of convulsion
- Convulsing now
- Lethargic or unconscious

**S.1.2 What is your classification for dehydration? (circle only ONE option)**

- SEVERE DEHYDRATION
- SOME DEHYDRATION
- NO DEHYDRATION

- Enter “Case”, “AgeGroup”, “Scenario” and first question as shown below:

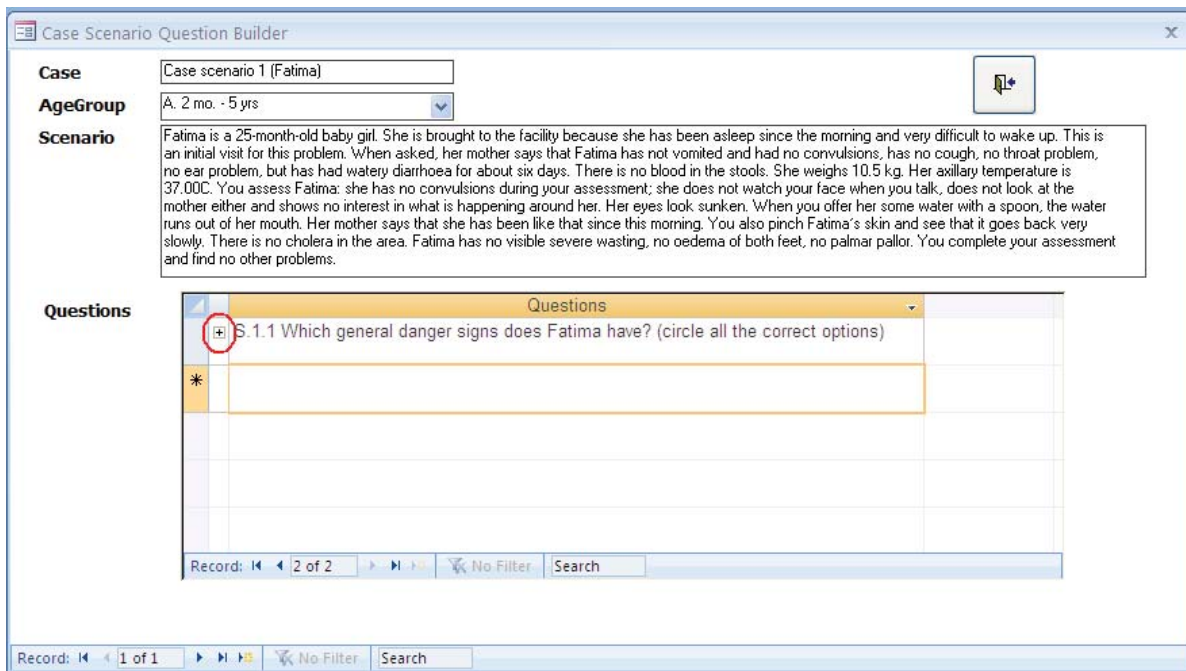
The screenshot shows the 'Case Scenario Question Builder' window. It contains the following fields and content:

- Case:** Case scenario 1 (Fatima)
- AgeGroup:** A. 2 mo. - 5 yrs
- Scenario:** Fatima is a 25-month-old baby girl. She is brought to the facility because she has been asleep since the morning and very difficult to wake up. This is an initial visit for this problem. When asked, her mother says that Fatima has not vomited and had no convulsions, has no cough, no throat problem, no ear problem, but has had watery diarrhoea for about six days. There is no blood in the stools. She weighs 10.5 kg. Her axillary temperature is 37.00C. You assess Fatima: she has no convulsions during your assessment; she does not watch your face when you talk, does not look at the mother either and shows no interest in what is happening around her. Her eyes look sunken. When you offer her some water with a spoon, the water runs out of her mouth. Her mother says that she has been like that since this morning. You also pinch Fatima's skin and see that it goes back very slowly. There is no cholera in the area. Fatima has no visible severe wasting, no oedema of both feet, no palmar pallor. You complete your assessment and find no other problems.
- Questions:** A table with one row containing the question: "S.1.1 Which general danger signs does Fatima have? (circle all the correct options)".

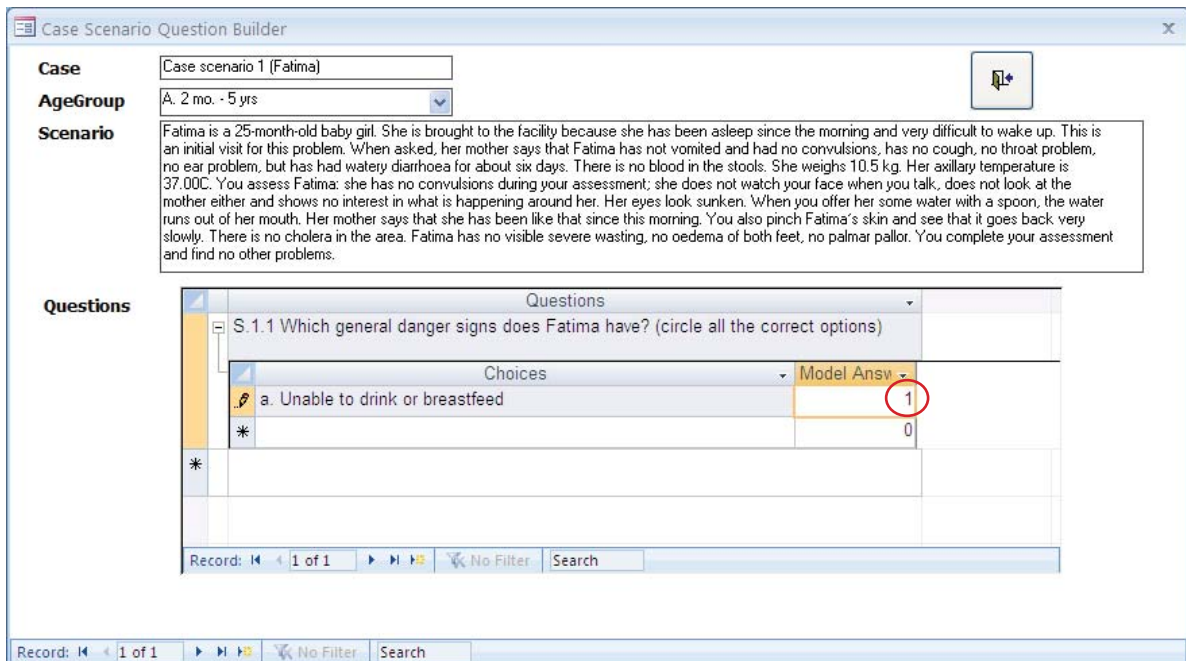
At the bottom of the window, there is a navigation bar with the text: Record: 1 of 1, No Filter, Search.



- Place the cursor in the row marked with the asterisk and click once. In the above row, where you have entered the first question, a small box with the sign **+** appears:



- Click on it to display the row where you can enter the options for this question.
- Place the cursor in the first row and enter the first option.
- Press the tab key and enter **1** as a score as this is a correct option:



- Enter the remaining four options. A correct option is “e” (enter score 1). Enter -1 for the other options (“b”, “c” and “d”):

The screenshot shows the 'Case Scenario Question Builder' window. The 'Case' field is 'Case scenario 1 (Fatima)' and the 'AgeGroup' is 'A. 2 mo. - 5 yrs'. The 'Scenario' text describes a 25-month-old baby girl with symptoms of watery diarrhoea and lethargy. The 'Questions' section contains a question: 'S. 1.1 Which general danger signs does Fatima have? (circle all the correct options)'. Below the question is a table of choices and model answers:

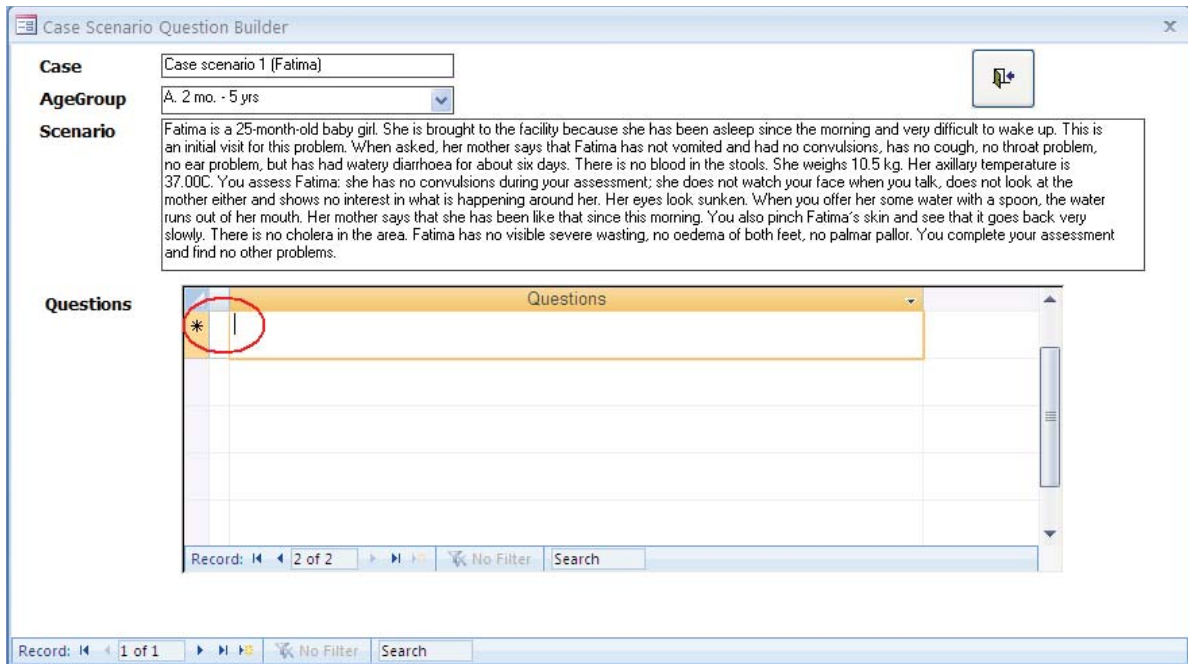
Choices	Model Answ
a. Unable to drink or breastfeed	1
b. Vomiting everything	-1
c. History of convulsion	-1
d. Convulsing now	-1
e. Lethargic or unconscious	1


The interface also shows navigation controls at the bottom, including 'Record: 1 of 5' and 'No Filter'.

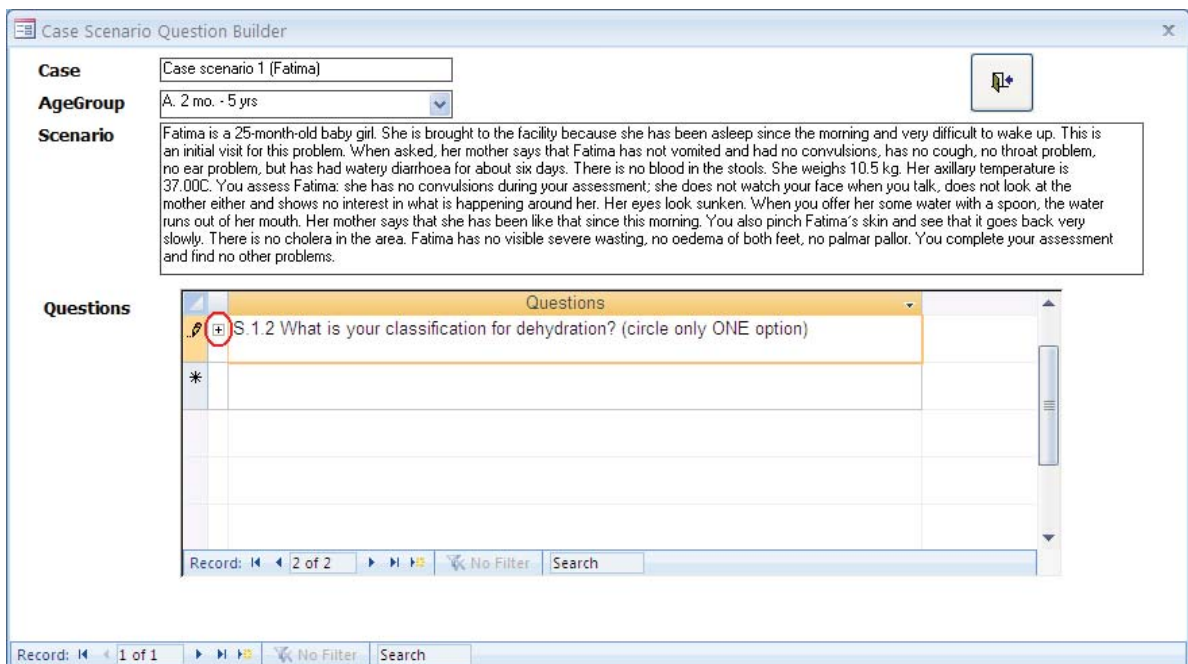
- To enter the second question for the same case scenario, click on the down arrow of the scroll bar on the right side of the screen:

This screenshot is identical to the previous one, showing the same question and table of choices. A red circle is drawn around the down arrow of the scroll bar on the right side of the question table, indicating where to click to add a new question.

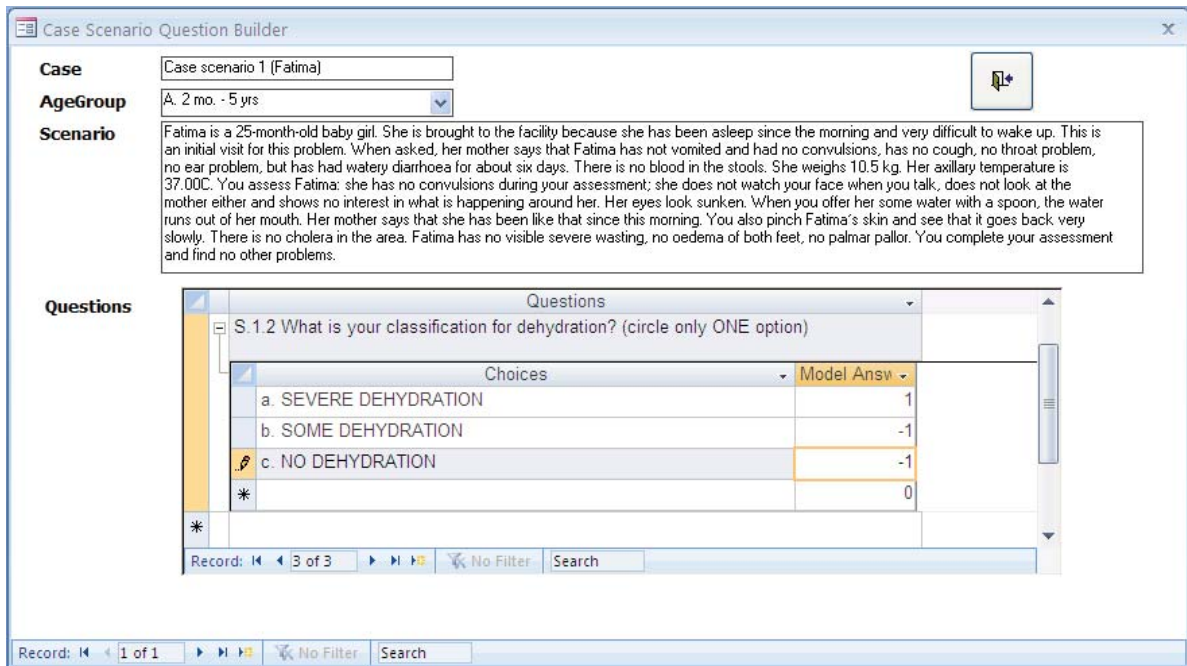
- Place the cursor in the row marked with the asterisk:



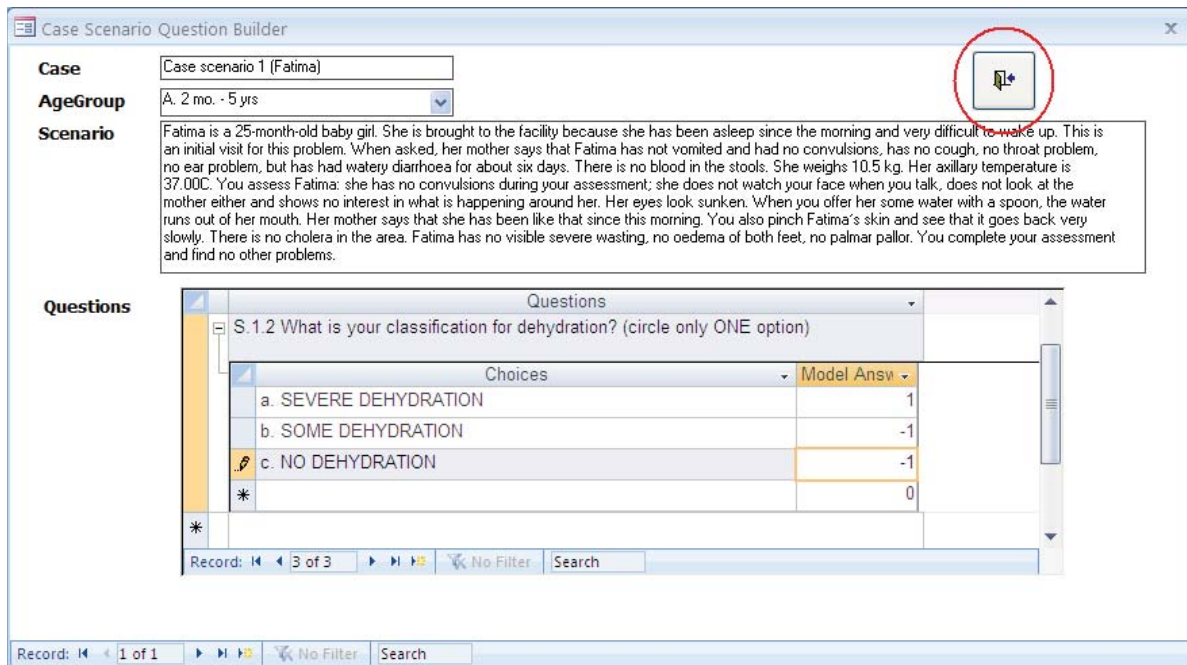
- and enter the second question.
- Now, click on the plus sign  beside the question to enter the options:



- Option “a” is correct (score = 1), while options “b” and “c” are incorrect (-1):



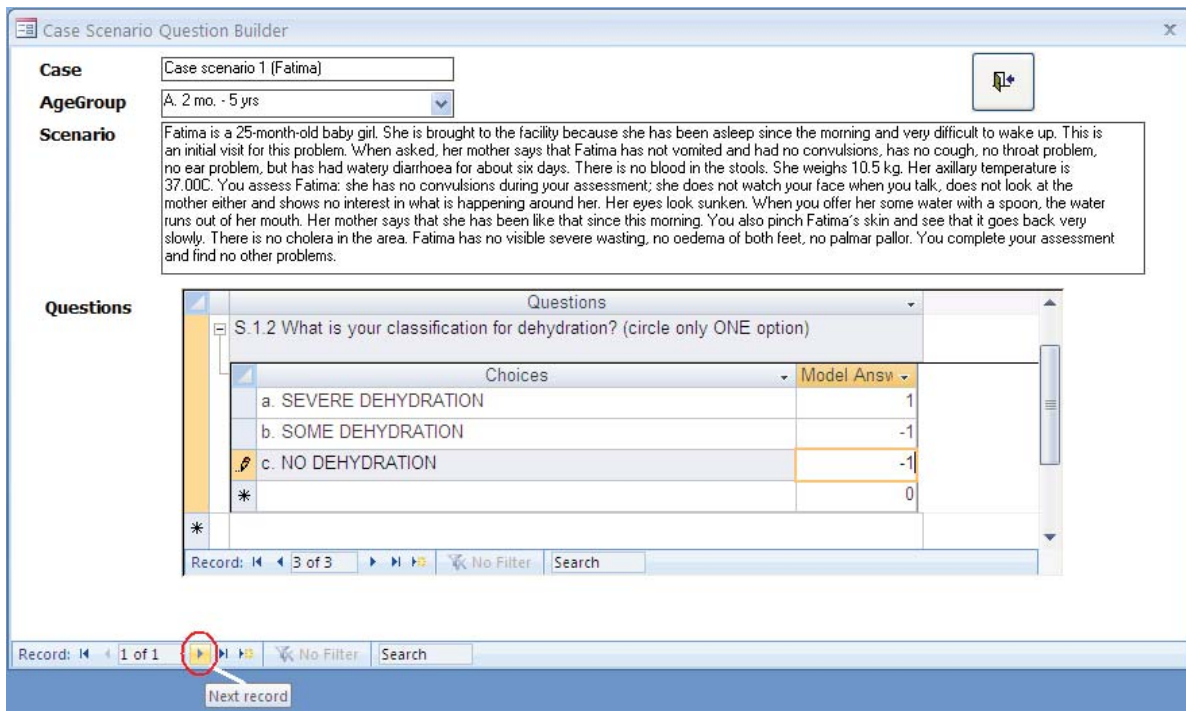
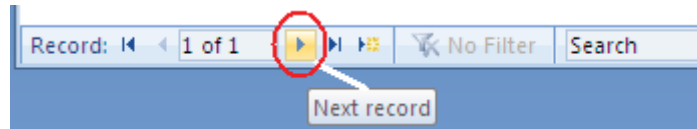
- As we are finished, click on the door ajar icon to leave the screen and return to the main menu:



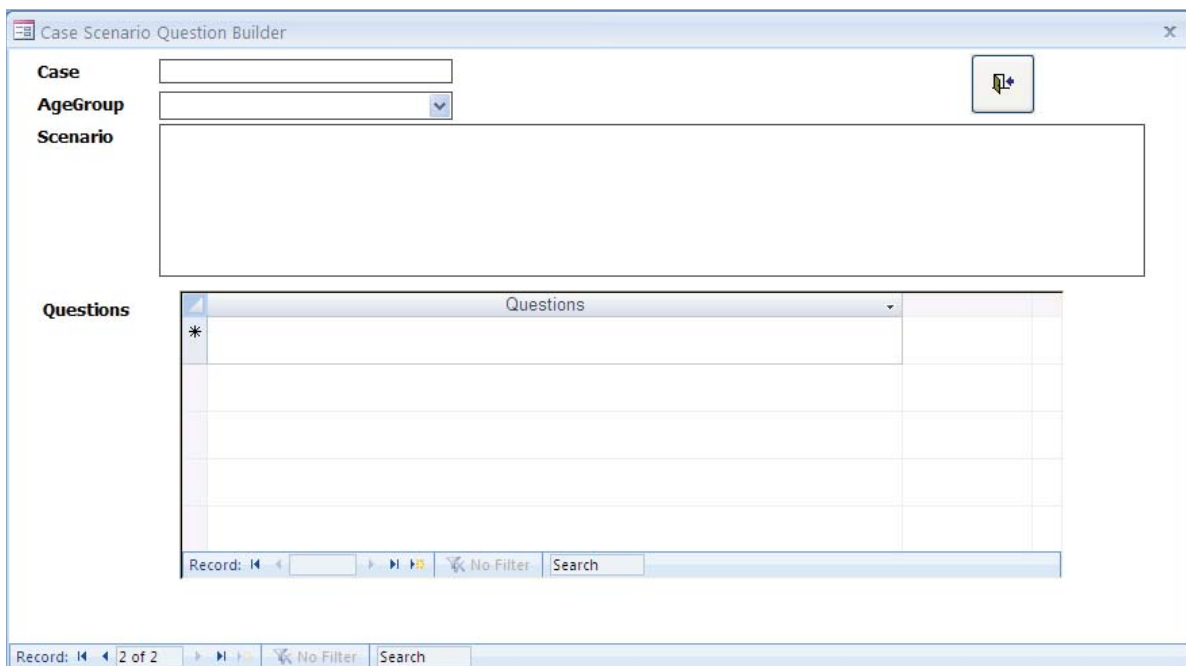


If we had wanted to enter a new case scenario (e.g., Case scenario 2), we would have used the Navigation bar, clicking on the arrow pointing to the right at the bottom of the screen:

Navigation bar

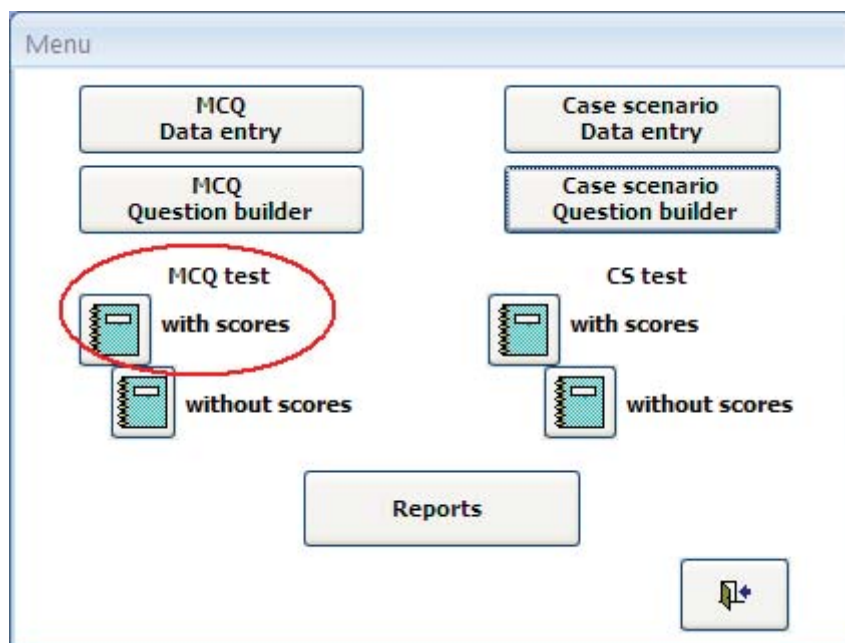
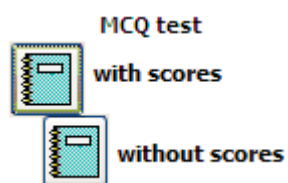


And we would have been ready to enter another case scenario:



- Let's exit and return to the menu.

To see the form we have just created, click under “**MCQ test**” the option “**with scores**” to see the score assigned to each option—or “**without scores**” to see the form without the scores:



- Magnify the window showing the form:



The screenshot shows a software interface with a main dashboard on the right and a magnified window on the left. The magnified window, titled 'Categories', displays an 'MCQ test with scores' form. The form contains two sections: 'A. IMCI guidelines' and 'B. ASSESS AND CLASSIFY'. Section A asks for the age group for IMCI clinical guidelines, with options: 'a. Birth up to 2 years', 'b. 2 months up to 2 years', 'c. 1 week up to 5 years', and 'd. 2 months up to 5 years'. Section B asks for main symptoms to assess in every sick child age 2 months up to 5 years, with options: 'a. Cough', 'b. Abdominal pain', 'c. Fever', 'd. Skin infection', and 'e. Diarrhoea'. The main dashboard on the right has buttons for 'Case scenario Data entry', 'Case scenario Question builder', 'CS test with scores', 'CS test without scores', and 'Reports'. A magnifying glass icon is also visible on the dashboard.

- Click once on the zoom lens to see the form that you have just created:

**MCQ test with scores**

**A. IMCI guidelines**

**A1. Which of the following age groups do the IMCI clinical guidelines address? (circle only ONE answer)**

a. Birth up to 5 years	1
b. 2 months up to 2 years	-1
c. 1 week up to 5 years	-1
d. 2 months up to 6 years	-1

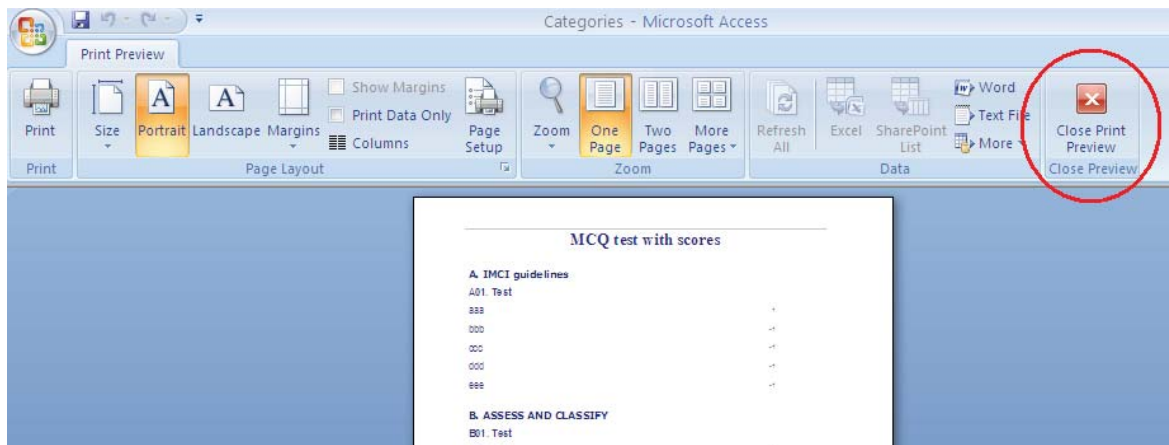
**B. ASSESS AND CLASSIFY**

**B1. According to the IMCI guidelines, which of the following main symptoms should always be assessed in every sick child age 2 months up to 5 years? (circle all the correct options)**



a. Cough	1
b. Abdominal pain	-1
c. Fever	1
d. Skin infection	-1
e. Diarrhoea	1

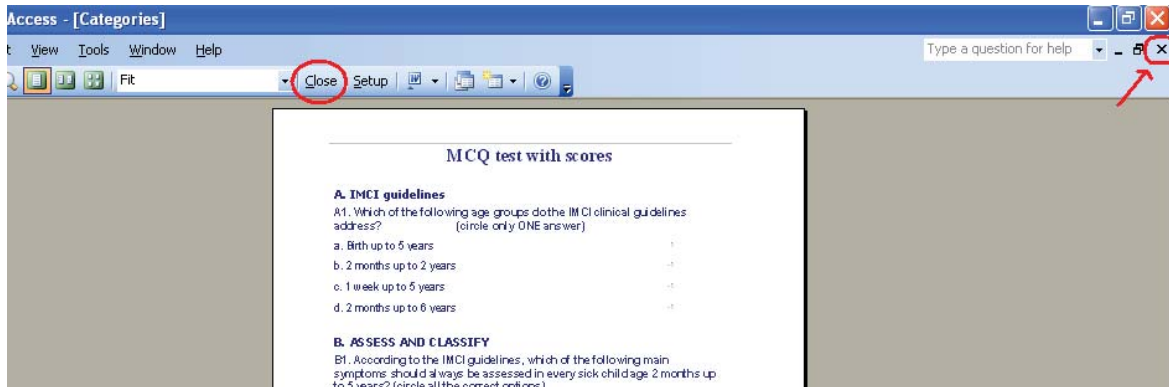
To close this window with the “MCQ test with scores” and return to the report menu:

- In ACCESS 2007: click on the “Close Print Preview” icon on top:

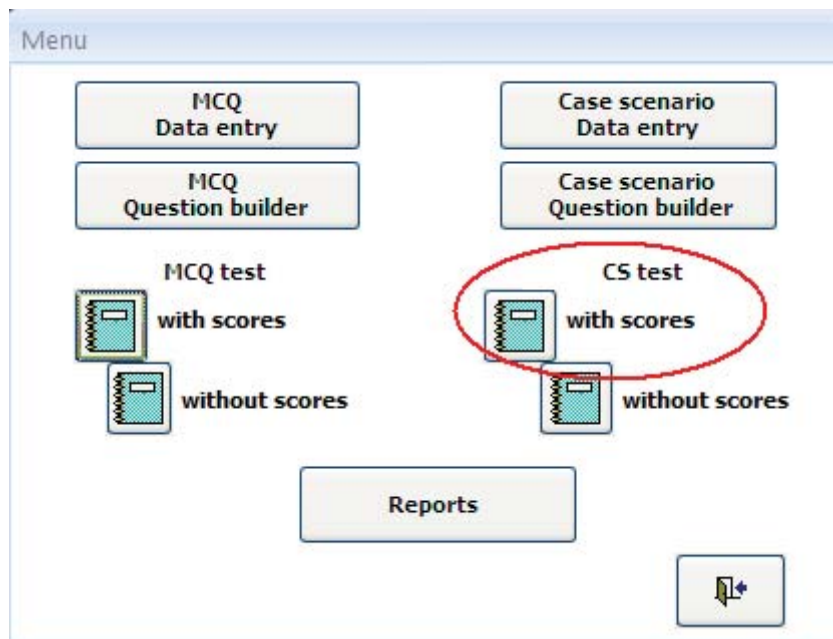




- In ACCESS 2003, click on the small black  icon on the top right-hand corner of the inside window, placed under the bigger  red icon (which, if clicked, would close the whole program) or click on “Close”, as shown below:



If you want to see the case scenario form, then click under “CS test” the option “with scores” or “without scores”:



## Case Scenarios Test with scores

### Case scenario 1 (Fatima)

Age Group **A. 2 mo. - 5 yrs**

Fatima is a 25-month-old baby girl. She is brought to the facility because she has been asleep since the morning and very difficult to wake up. This is an initial visit for this problem. When asked, her mother says that Fatima has not vomited and had no convulsions, has no cough, no throat problem, no ear problem, but has had watery diarrhoea for about six days. There is no blood in the stools. She weighs 10.5 kg. Her axillary temperature is 37.00C. You assess Fatima: she has no convulsions during your assessment; she does not watch your face when you talk, does not look at the mother either and shows no interest in what is happening around her. Her eyes look sunken. When you offer her some water with a spoon, the water runs out of her mouth. Her mother says that she has been like that since this morning. You also pinch Fatima's skin and see that it goes back very slowly. There is no cholera in the area. Fatima has no visible severe wasting, no oedema of both feet, no palmar pallor. You complete your assessment and find no other problems.

#### S.1.1 Which general danger signs does Fatima have? (circle all the correct options)

- |                                  |    |
|----------------------------------|----|
| a. Unable to drink or breastfeed | 1  |
| b. Vomiting everything           | -1 |
| c. History of convulsion         | -1 |
| d. Convulsing now                | -1 |

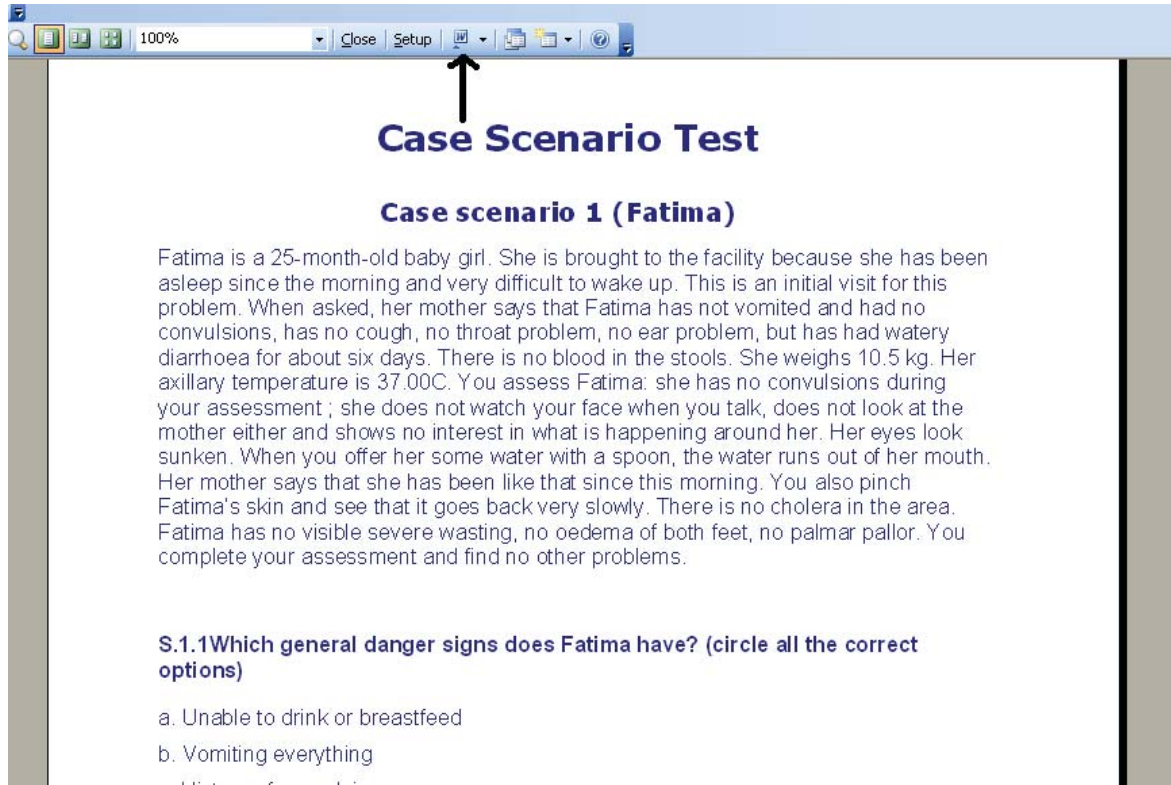
### Reminder:

**Always back up your data files on an external drive (e.g. pen drive) at the end of each data entry session.**

**Don't wait to have entered all the data until the last day!**

To improve the look of the form before printing it and distributing to students for the test, the form so created can be exported to Word, clicking the icon on top as shown here:

In Access 2003  :



In Access 2007  :



**Well done! You are now ready to enter the data!**

## Practising entering student answers to MCQs and case scenarios

In this exercise, you will enter answers of two students to the two MCQs and the case scenario that you have developed in the previous exercise.

### MCQs

#### A1. Which of the following age groups do the IMCI clinical guidelines address?

Options	Student 01	Student 02
a. Birth up to 5 years	✓	-
b. 2 months up to 2 years	-	-
c. 1 week up to 5 years	-	✓
d. 2 months up to 6 years	-	-

#### B1. According to the IMCI guidelines, which of the following main symptoms should always be assessed in every sick child age 2 months up to 5 years?

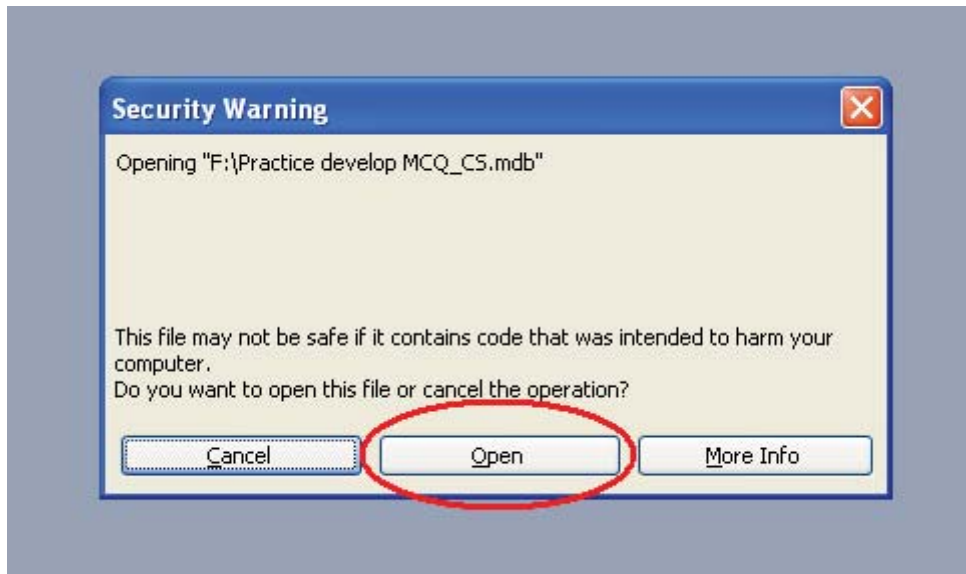
Options	Student 01	Student 02
a. Cough	✓	✓
b. Abdominal pain	-	✓
c. Fever	✓	✓
d. Skin infection	-	-
e. Diarrhoea	✓	✓

Now, let's see how to enter these results in the ACCESS program.

- Double click on the file "**Copy of Practice develop MCQ\_CS**" that you created in the previous exercise, in which you entered the two MCQs and the case scenario with two questions:

 Copy of Practice develop MCQ\_CS

- A security warning appears. As this file is safe:
  - In Access 2003: click on “**Open**”.



- In Microsoft Office Access 2007: enable content as described earlier<sup>3</sup>.

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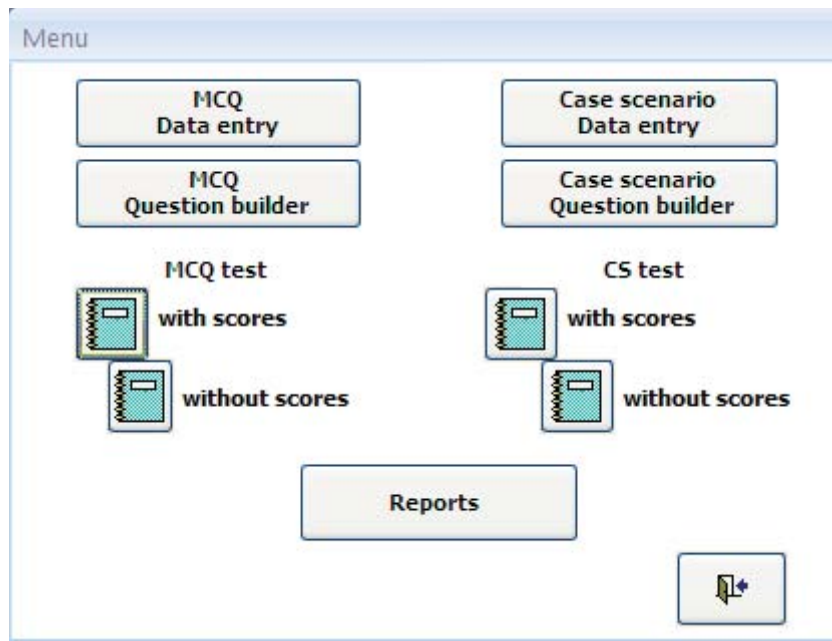
 **Reminder for users of Access 2007:**

**Always enable content when opening the program Access file as described in the previous section, otherwise the menu will be inactive and not work.**

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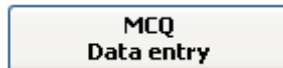
<sup>3</sup> Click on “**Options**” and then select “**Enable this content**” to be able to open the file, as described in the “Instructions for users of Microsoft Office Access 2007”.

The “Menu” is displayed on the screen:



- Click on the first button from the top on the left “MCQ Data entry “ to enter your data,

i.e. student answers to the MCQ test:

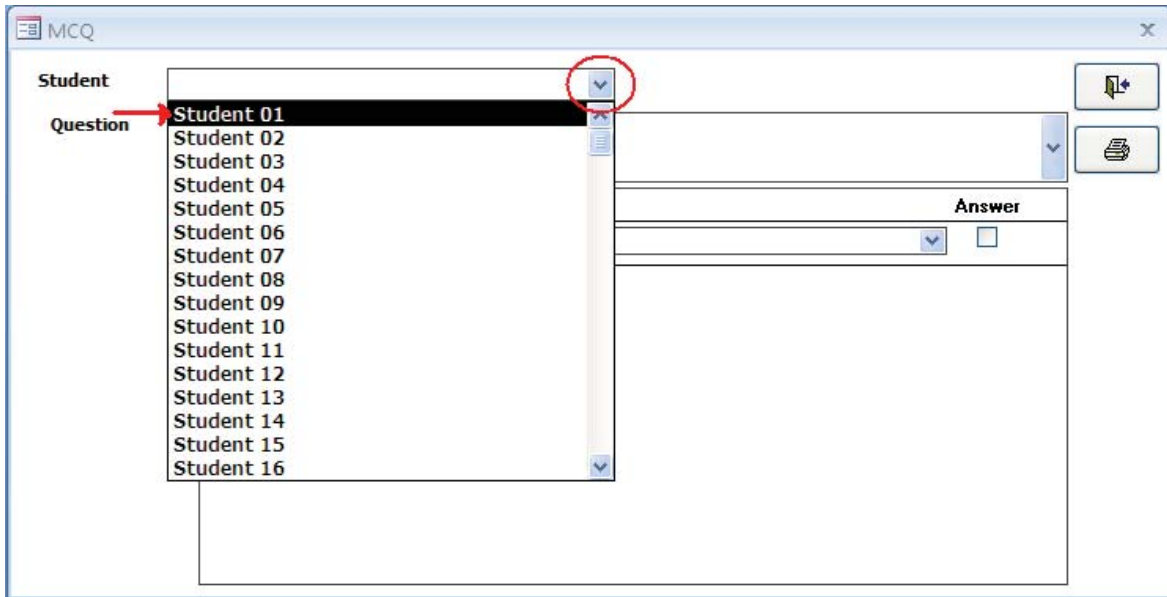


The following screen appears:

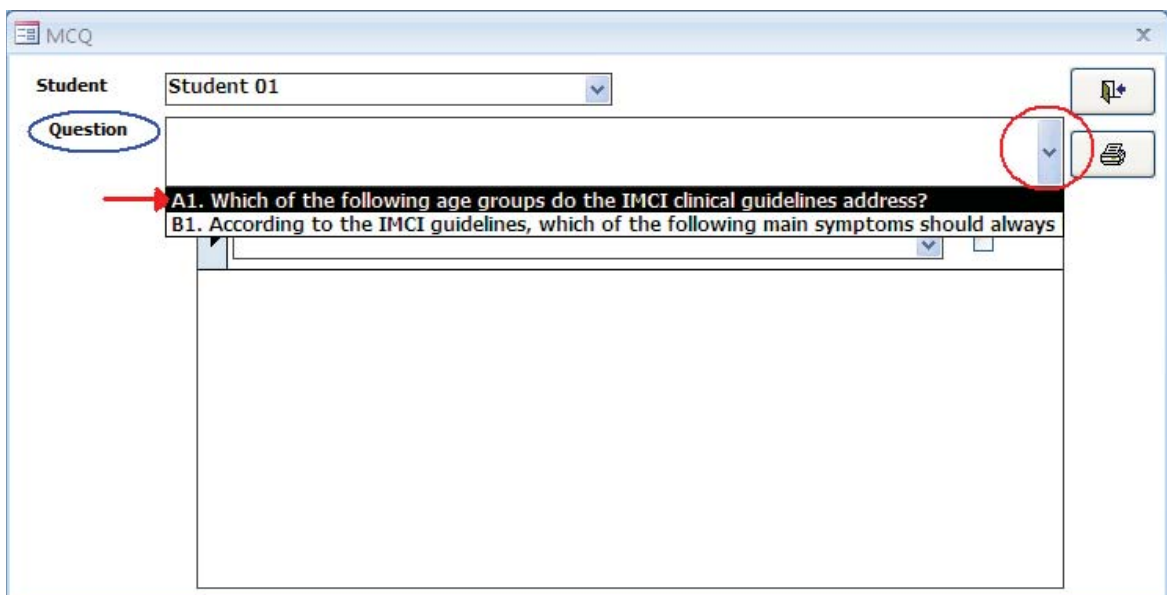
The 'MCQ' form includes the following fields and controls:

- Student:** A dropdown menu.
- Question:** A dropdown menu.
- Answer:** A dropdown menu with a checkbox to its right.
- Two icons on the right side: a speaker with a plus sign and a printer.

- Click on the small arrow on the right of the first item “Student” (circled in red in the picture below) to view the dropdown list and select Student 01:



- Now, move to the next field “Question”, click on the small arrow on the right of this item (see arrow circled in red below) to view the dropdown list and click on the first question (“A1. Which of the following...”), as shown here:



The answer box for that question, showing all the options, is automatically displayed on the screen, as shown below.

The screenshot shows a window titled "MCQ" with a student dropdown set to "Student 01". The question is "A1. Which of the following age groups do the IMCI clinical guidelines address? (circle only ONE answer)". Below the question is a table with four options and an asterisk option. The "Answer" column has checkboxes. A red box highlights the entire table area.

	Answer
a. Birth up to 5 years	<input type="checkbox"/>
b. 2 months up to 2 years	<input type="checkbox"/>
c. 1 week up to 5 years	<input type="checkbox"/>
d. 2 months up to 6 years	<input type="checkbox"/>
* [ ]	<input type="checkbox"/>

- Click on the "Answer" box by option "a" (see red circle below), as this is the option selected by the first student for this question. A tick appears in the box. If you wish to remove the tick, to place it in a different Answer box, simply click again where you placed the tick and the tick will disappear. This is how you can correct wrong entries. In fact, every action in ACCESS is automatically saved. You do not need to save. For the same reason, you can not "undo" actions.

The screenshot shows the same MCQ interface as above, but now a tick mark is present in the "Answer" checkbox for option "a". A red circle highlights this tick mark.

	Answer
a. Birth up to 5 years	<input checked="" type="checkbox"/>
b. 2 months up to 2 years	<input type="checkbox"/>
c. 1 week up to 5 years	<input type="checkbox"/>
d. 2 months up to 6 years	<input type="checkbox"/>
* [ ]	<input type="checkbox"/>

Next, you need to enter student 1's answer to question 2.



- Click on the small arrow to the right of the item “**Question**” as you did for the first question to view the dropdown list and click on the second question (“B1. According to the IMCI guidelines ...”):

The screenshot shows the MCQ interface for Student 01. The question list is expanded to show the second question, B1. The first question, A1, is highlighted in black. A red circle highlights the dropdown arrow next to the question text.

Question	Answer
A1. Which of the following age groups do the IMCI clinical guidelines address? (circle only ONE answer)	
B1. According to the IMCI guidelines, which of the following main symptoms should always	
a. Birth up to 5 years	<input checked="" type="checkbox"/>
b. 2 months up to 2 years	<input type="checkbox"/>
c. 1 week up to 5 years	<input type="checkbox"/>
d. 2 months up to 6 years	<input type="checkbox"/>
* [ ]	<input type="checkbox"/>

The answer box for that question, displaying all the options, is automatically displayed.

- Select options “a”, “c” and “e” by clicking on the corresponding answer boxes as shown below (circled in red):

The screenshot shows the MCQ interface for Student 01. The question list is expanded to show the second question, B1. The question text is highlighted in black. A red circle highlights the dropdown arrow next to the question text. The answer boxes for options a, c, and e are marked with red circles and checkmarks.

Question	Answer
B1. According to the IMCI guidelines, which of the following main symptoms should always be assessed in every sick child age 2 months up to 5 years? (circle all the correct options)	
a. Cough	<input checked="" type="checkbox"/>
b. Abdominal pain	<input type="checkbox"/>
c. Fever	<input checked="" type="checkbox"/>
d. Skin infection	<input type="checkbox"/>
e. Diarrhoea	<input checked="" type="checkbox"/>
* [ ]	<input type="checkbox"/>

You are finished with student 1, as there are only two MCQs. You’ll then start entering the answers of student 2 to the same questions.

- Click on the small arrow on the right of the first item **“Student”** to view the dropdown list and select Student 02 (see red arrow below):

The screenshot shows the 'MCQ' window with the 'Student' dropdown menu open. A red arrow points to the 'Question' dropdown menu. The 'Answer' column shows a grid of checkboxes for each student, with some already checked.

Student	Question	Answer
Student 01		
Student 02		
Student 03		
Student 04		
Student 05		
Student 06		
Student 07		<input checked="" type="checkbox"/>
Student 08		<input type="checkbox"/>
Student 09		
Student 10		<input checked="" type="checkbox"/>
Student 11		
Student 12		<input type="checkbox"/>
Student 13		
Student 14		<input checked="" type="checkbox"/>
Student 15		
Student 16		<input type="checkbox"/>

- You'll notice that question B1 is still displayed, as this was the last question entered for student 1. So, click on the small arrow to the right of the item **“Question”**, as you did for the first student, to view the dropdown list and click on the first question (**“A1. Which of the following...”**) (see red arrow below):

The screenshot shows the 'MCQ' window with the 'Question' dropdown menu open. A red arrow points to the first question in the list. The 'Answer' column shows a grid of checkboxes for each question, with some already checked.

Student	Question	Answer
Student 02	B1. According to the IMCI guidelines, which of the following main symptoms should always be assessed in every sick child age 2 months up to 5 years? (circle all the correct options)	
	A1. Which of the following age groups do the IMCI clinical guidelines address?	
	B1. According to the IMCI guidelines, which of the following main symptoms should always	

The answer box for that question, displaying all the options, is automatically displayed.

- Click on the answer box which corresponds to option “c”:

MCQ

Student: Student 02

Question: A1. Which of the following age groups do the IMCI clinical guidelines address? (circle only ONE answer)

	Answer
a. Birth up to 5 years	<input type="checkbox"/>
b. 2 months up to 2 years	<input type="checkbox"/>
c. 1 week up to 5 years	<input checked="" type="checkbox"/>
d. 2 months up to 6 years	<input type="checkbox"/>
* [ ]	<input type="checkbox"/>

Next, you need to enter student 2's answer to question 2.

- Click on the small arrow on the right of the item “Question”, as you did earlier for the first question, to view the dropdown list and click on the second question (“B1. According to the IMCI guidelines ...”) (see red arrow below):

MCQ

Student: Student 02

Question: A1. Which of the following age groups do the IMCI clinical guidelines address? (circle only ONE answer)

B1. According to the IMCI guidelines, which of the following main symptoms should always

a. Birth up to 5 years	<input type="checkbox"/>
b. 2 months up to 2 years	<input type="checkbox"/>
c. 1 week up to 5 years	<input checked="" type="checkbox"/>
d. 2 months up to 6 years	<input type="checkbox"/>
* [ ]	<input type="checkbox"/>

- Student 2 has selected options “a”, “b”, “c” and “e”. Tick on the corresponding answer boxes. Your screen should then look like this:

MCQ

Student: Student 02

Question: B1. According to the IMCI guidelines, which of the following main symptoms should always be assessed in every sick child age 2 months up to 5 years? (circle all the correct options)

	Answer
a. Cough	<input checked="" type="checkbox"/>
b. Abdominal pain	<input checked="" type="checkbox"/>
c. Fever	<input checked="" type="checkbox"/>
d. Skin infection	<input type="checkbox"/>
e. Diarrhoea	<input checked="" type="checkbox"/>
* [ ]	<input type="checkbox"/>

At this point, you have finished entering student answers to MCQs, as you had only two questions and two students to enter in this example.

- Leave this screen to go back to the main menu and be ready to enter the answers to the two questions of the case scenario. Click on the exit icon on the top right:

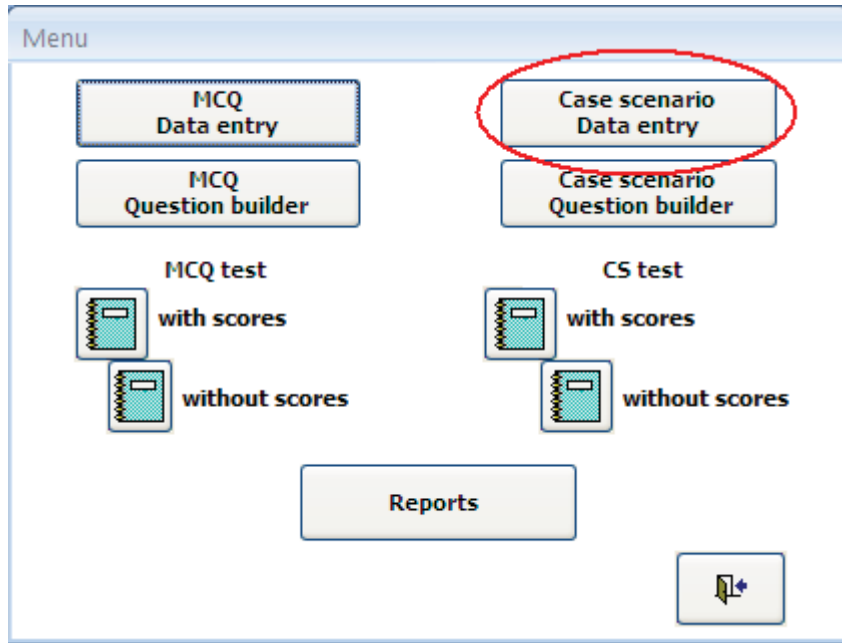
MCQ

Student: Student 02

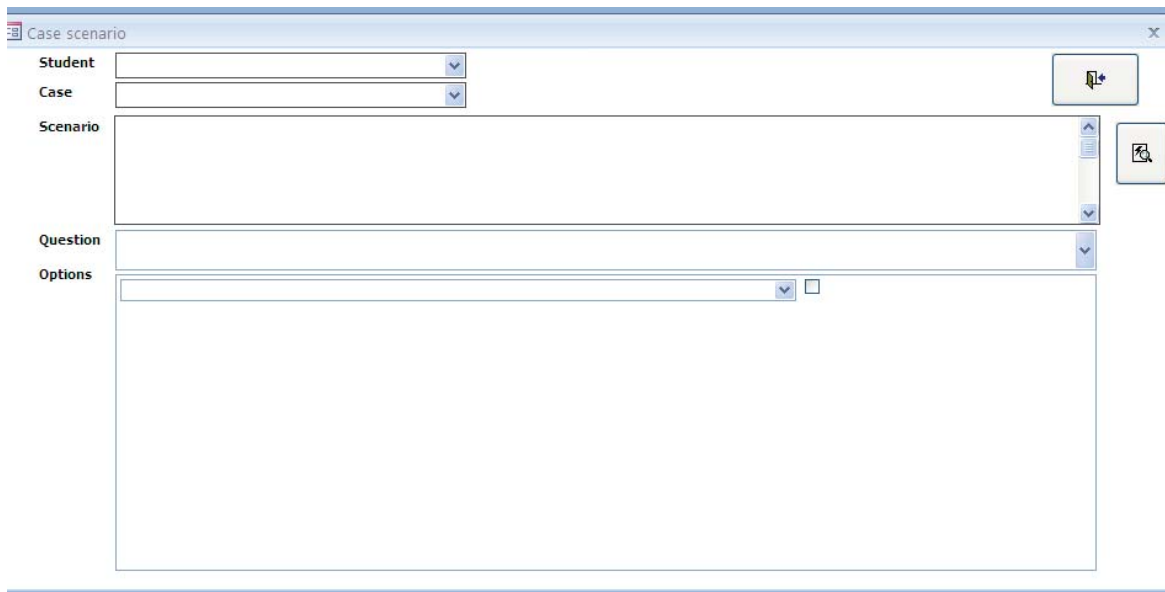
Question: B1. According to the IMCI guidelines, which of the following main symptoms should always be assessed in every sick child age 2 months up to 5 years? (circle all the correct options)

	Answer
a. Cough	<input checked="" type="checkbox"/>
b. Abdominal pain	<input checked="" type="checkbox"/>
c. Fever	<input checked="" type="checkbox"/>
d. Skin infection	<input type="checkbox"/>
e. Diarrhoea	<input checked="" type="checkbox"/>
* [ ]	<input type="checkbox"/>

- This takes you back to the main menu. Click on the “**Case scenario Data entry**” button, first from the top right:



A new screen appears:



Before entering the answers, let's see what the two students have answered in their test:

### Case scenario 1 (Fatima)

#### S.1.1 Which general danger signs does Fatima have?

Options	Student 01	Student 02
a. Unable to drink or breastfeed	✓	✓
b. Vomiting everything	-	-
c. History of convulsions	-	-
d. Convulsing now	-	-
e. Lethargic or unconscious	✓	✓

#### S.1.2 What is your classification for dehydration?

Options	Student 01	Student 02
a. SEVERE DEHYDRATION	✓	-
b. SOME DEHYDRATION	-	✓
c. NO DEHYDRATION	-	-

Let's now enter the data.

- Under “**Student**”, click on the on the small arrow on the right to view the dropdown list and click on Student 01;
- Then, move to “**Case**”, click on the on the small arrow on the right to view the dropdown list and click on “Case scenario 1 (Fatima)”. Next item “**Scenario**” automatically displays the text of the scenario:

Case scenario

Student: Student 01

Case: Case scenario 1 (Fatima)

Scenario: Fatima is a 25-month-old baby girl. She is brought to the facility because she has been asleep since the morning and very difficult to wake up. This is an initial visit for this problem. When asked, her mother says that Fatima has not vomited and had no convulsions, has no cough, no throat problem, no ear problem, but has had watery diarrhoea for about six days. There is no blood in the stools. She weighs 10.5 kg. Her axillary temperature is 37.00C. You assess Fatima: she has no convulsions during your assessment; she does not watch your face when you talk, does not look at the mother either and shows no interest in what is happening around her. Her eyes look sunken. When you offer her some water with a spoon, the water runs out of her mouth. Her mother says that she has been like that since this morning. You also pinch Fatima's skin and see that it goes back very slowly. There is no cholera in the area. Fatima has no

Question:

Options:

- Go to “Question”, click on the small arrow on the right to view the dropdown list and click on the first question (“S.1.1 Which general danger signs...”). The option section is automatically displayed to enable you to enter the answers:

The screenshot shows a 'Case scenario' window with the following details:

- Student:** Student 01
- Case:** Case scenario 1 (Fatima)
- Scenario:** Fatima is a 25-month-old baby girl. She is brought to the facility because she has been asleep since the morning and very difficult to wake up. This is an initial visit for this problem. When asked, her mother says that Fatima has not vomited and had no convulsions, has no cough, no throat problem, no ear problem, but has had watery diarrhoea for about six days. There is no blood in the stools. She weighs 10.5 kg. Her axillary temperature is 37.00C. You assess Fatima: she has no convulsions during your assessment; she does not watch your face when you talk, does not look at the mother either and shows no interest in what is happening around her. Her eyes look sunken. When you offer her some water with a spoon, the water runs out of her mouth. Her mother says that she has been like that since this morning. You also pinch Fatima's skin and see that it goes back very slowly. There is no cholera in the area. Fatima has no...
- Question:** S.1.1 Which general danger signs does Fatima have? (circle all the correct options)
- Options:**
  - a. Unable to drink or breastfeed
  - b. Vomiting everything
  - c. History of convulsion
  - d. Convulsing now
  - e. Lethargic or unconscious

- Enter options “a” and “e”:

The screenshot shows the same 'Case scenario' window as above, but with the following changes:

- Question:** S.1.1 Which general danger signs does Fatima have? (circle all the correct options)
- Options:**
  - a. Unable to drink or breastfeed
  - b. Vomiting everything
  - c. History of convulsion
  - d. Convulsing now
  - e. Lethargic or unconscious

You need to enter student 1’s answers to the second question.



- Go to “Question”, click on the on the small arrow on the right to view the dropdown list and click on the second question (“S.1.2 What is your classification ...”):

The screenshot shows the 'Case scenario' window. At the top, 'Student' is set to 'Student 01' and 'Case' is 'Case scenario 1 (Fatima)'. The 'Scenario' text describes a 25-month-old baby girl with watery diarrhoea. Under the 'Question' section, two questions are listed: 'S.1.1 Which general danger signs does Fatima have? (circle all the correct options)' and 'S.1.2 What is your classification for dehydration? (circle only ONE option)'. A red arrow points to the second question. A small dropdown arrow on the right of the second question is circled in blue.

The option section is automatically displayed to enable you to enter the answers.

- Enter option “a”:

This screenshot shows the same interface as the previous one, but now the 'Options' section for question S.1.2 is visible. The options are: 'a. SEVERE DEHYDRATION', 'b. SOME DEHYDRATION', and 'c. NO DEHYDRATION'. Each option has a dropdown arrow and a checkbox. The checkbox for option 'a' is checked and circled in red.

You are now finished with data entry for student 1’s answers to the two questions of case scenario 1 and are ready to enter student 2’s answers.

- Go to “Student” on top of the screen, click on the on the small arrow on the right to view the dropdown list and click on Student 02.
- As the case scenario displayed is Case scenario 1, you do not need to make any changes under “Case” and “Scenario”.



- Go to “Question” click on the on the small arrow on the right to view the dropdown list and click on the first question (S.1.1) to open the option section.
- Click on the boxes corresponding to options “a” and “e”:

Case scenario

Student: Student 02

Case: Case scenario 1 (Fatima)

Scenario: Fatima is a 25-month-old baby girl. She is brought to the facility because she has been asleep since the morning and very difficult to wake up. This is an initial visit for this problem. When asked, her mother says that Fatima has not vomited and had no convulsions, has no cough, no throat problem, no ear problem, but has had watery diarrhoea for about six days. There is no blood in the stools. She weighs 10.5 kg. Her axillary temperature is 37.00C. You assess Fatima: she has no convulsions during your assessment; she does not watch your face when you talk, does not look at the mother either and shows no interest in what is happening around her. Her eyes look sunken. When you offer her some water with a spoon, the water runs out of her mouth. Her mother says that she has been like that since this morning. You also pinch Fatima's skin and see that it goes back very slowly. There is no cholera in the area. Fatima has no

Question: S.1.1 Which general danger signs does Fatima have? (circle all the correct options)

Options:

a. Unable to drink or breastfeed	<input checked="" type="checkbox"/>
b. Vomiting everything	<input type="checkbox"/>
c. History of convulsion	<input type="checkbox"/>
d. Convulsing now	<input type="checkbox"/>
e. Lethargic or unconscious	<input checked="" type="checkbox"/>
	<input type="checkbox"/>

- Now, to enter the answer to the second question, go to “Question”, click on the small arrow on the right to view the dropdown list and click on the second question (S.1.2) to open the option section. Then, click on the box corresponding to answer “b”:

Case scenario

Student: Student 02

Case: Case scenario 1 (Fatima)

Scenario: Fatima is a 25-month-old baby girl. She is brought to the facility because she has been asleep since the morning and very difficult to wake up. This is an initial visit for this problem. When asked, her mother says that Fatima has not vomited and had no convulsions, has no cough, no throat problem, no ear problem, but has had watery diarrhoea for about six days. There is no blood in the stools. She weighs 10.5 kg. Her axillary temperature is 37.00C. You assess Fatima: she has no convulsions during your assessment; she does not watch your face when you talk, does not look at the mother either and shows no interest in what is happening around her. Her eyes look sunken. When you offer her some water with a spoon, the water runs out of her mouth. Her mother says that she has been like that since this morning. You also pinch Fatima's skin and see that it goes back very slowly. There is no cholera in the area. Fatima has no

Question: S.1.2 What is your classification for dehydration? (circle only ONE option)

Options:

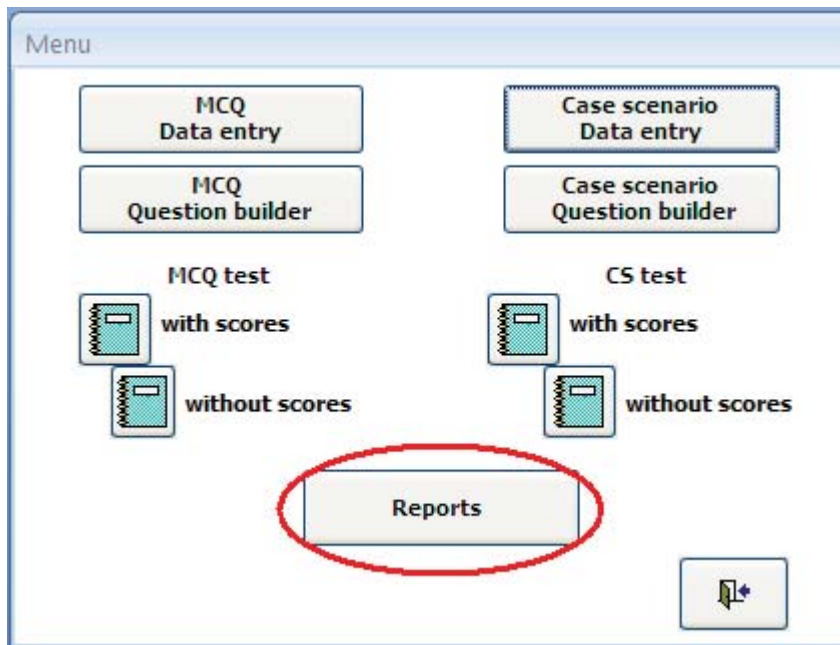
a. SEVERE DEHYDRATION	<input type="checkbox"/>
b. SOME DEHYDRATION	<input checked="" type="checkbox"/>
c. NO DEHYDRATION	<input type="checkbox"/>
	<input type="checkbox"/>

You have finished entering the two questions of Case scenario 1 for both students!

 **Remember: data are automatically saved each time you enter them.**

- Leave this screen to go back to the main menu. Click on the exit icon on the top right:

Well done! You are now ready to check the data and view the reports which have been automatically generated for the analysis of the data that you have entered!



 **Remember:**

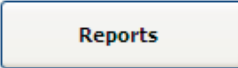
**Always back up your data: each day, save on an external drive the data you have entered!**

## Validating the data entered

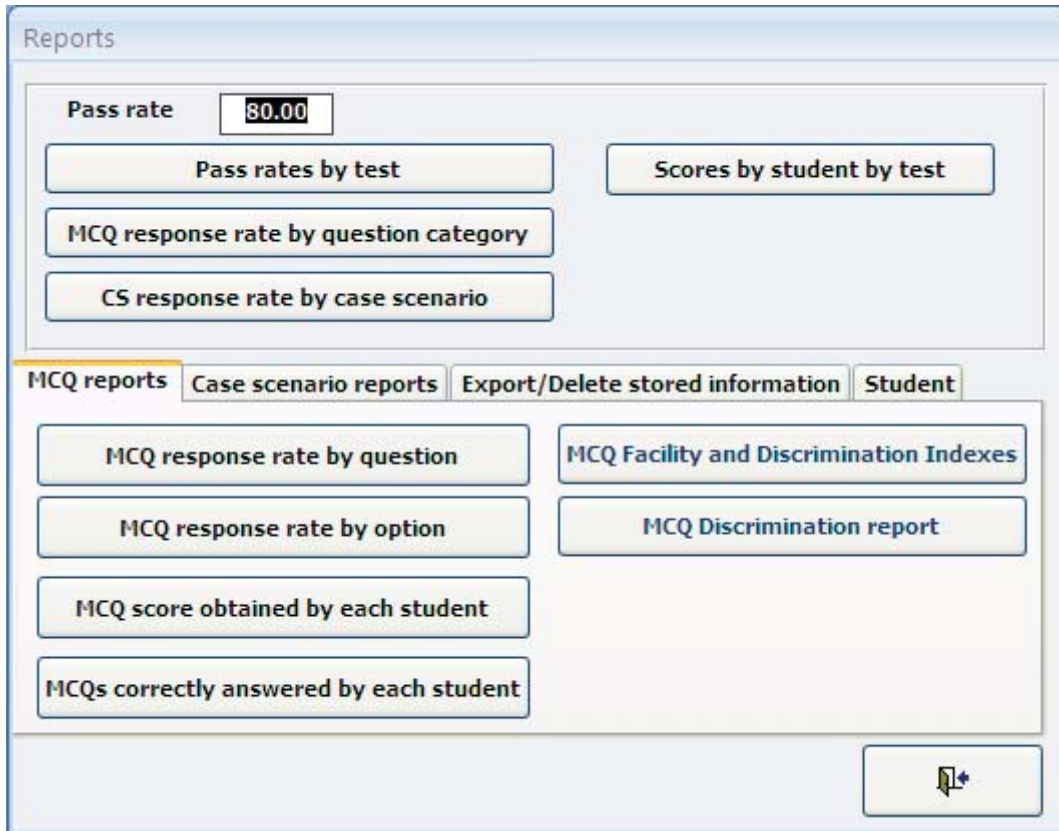
It is strongly recommended that data be entered by two different operators independently in two different computers, respectively, for data entry validation.

A fast way to check the data entered by the two operators is to look at the output tables.

- As in the previous section you had the menu window displayed, simply click on the button

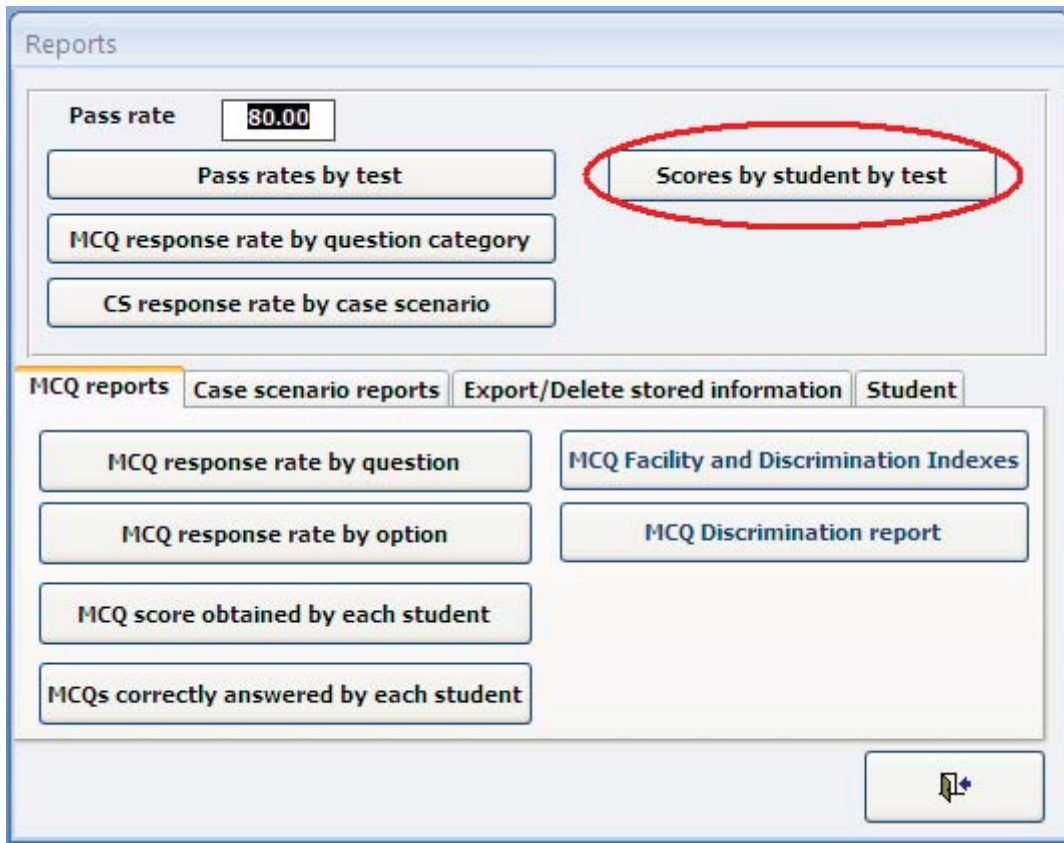
“Reports”: 

The following screen appears:

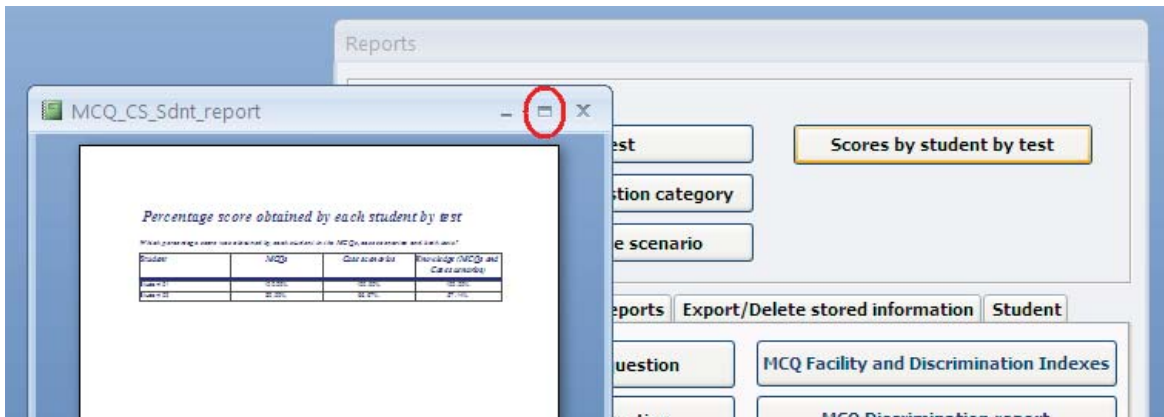


The screenshot shows a software window titled "Reports". At the top left, there is a "Pass rate" label next to a text box containing "80.00". Below this are several buttons: "Pass rates by test", "Scores by student by test", "MCQ response rate by question category", and "CS response rate by case scenario". A tabbed interface is present with four tabs: "MCQ reports" (which is selected and highlighted in yellow), "Case scenario reports", "Export/Delete stored information", and "Student". Under the "MCQ reports" tab, there are buttons for "MCQ response rate by question", "MCQ Facility and Discrimination Indexes", "MCQ response rate by option", "MCQ Discrimination report", "MCQ score obtained by each student", and "MCQs correctly answered by each student". A small icon button is located in the bottom right corner of the window.

- Click on the first button on the top to the right “Scores by student by test”:



- Maximize the new window, by clicking on  at the top right corner of the window:



- The mouse pointer turns to a lens with the + sign, to enable you to maximize the window. Click once with the mouse inside the window for a better view. It should look like this:

### *Percentage score obtained by each student by test*

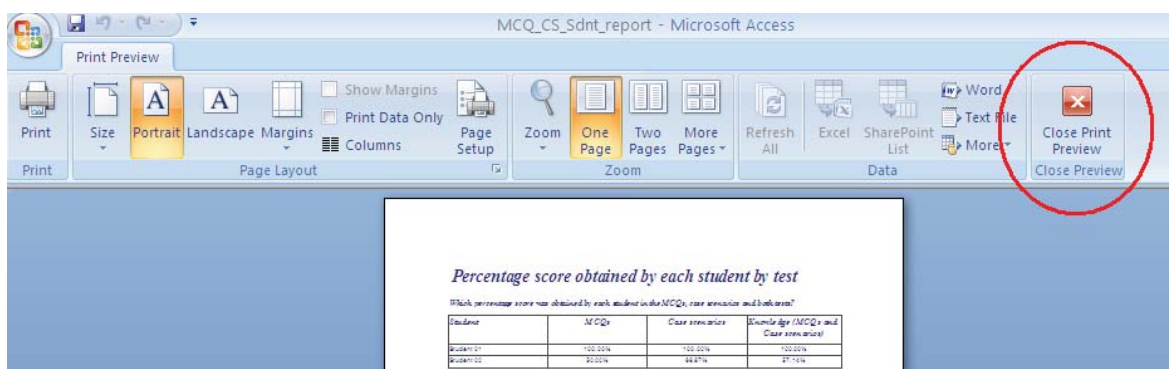
*Which percentage score was obtained by each student in the MCQs, case scenarios and both tests?*

<i>Student</i>	<i>MCQs</i>	<i>Case scenarios</i>	<i>Knowledge (MCQs and Case scenarios)</i>
Student 01	100.00%	100.00%	100.00%
Student 02	50.00%	66.67%	57.14%



- This report displays the percentage scores obtained by each student in the MCQ test, case scenario test and both (knowledge test). These scores result from the data which have been entered.
- Compare the two reports of the two computers: they should have the same values. For example, in this practice, you have entered data for two students. The row of student 01 should have “100%” under MCQs, “100%” under “Case scenarios” and “100%” in the last column under “Knowledge (MCQs and Case scenarios)”. The row of student 02 should have “50%” under MCQs, “66.67%” under “Case scenarios” and “57.14%” in the last column under “Knowledge (MCQs and case scenarios)”.
- As the percentage scores are based on the data you have entered, if you have any different value for the percentage scores (last column), this means that you have made a mistake in data entry. In this case, check which student no. the inconsistent data refer to. For example, if you had the value of “66.67%” under the “MCQs” column for student 01 instead of “100%”, you would need to check the data that you entered for this student. We will assume that there is this inconsistency between the two reports as an example to show how to correct it.

To close this window with the “Percentage score obtained by each student by test” and return to the report menu:


- In ACCESS 2007: click on the “Close Print Preview” icon on top:

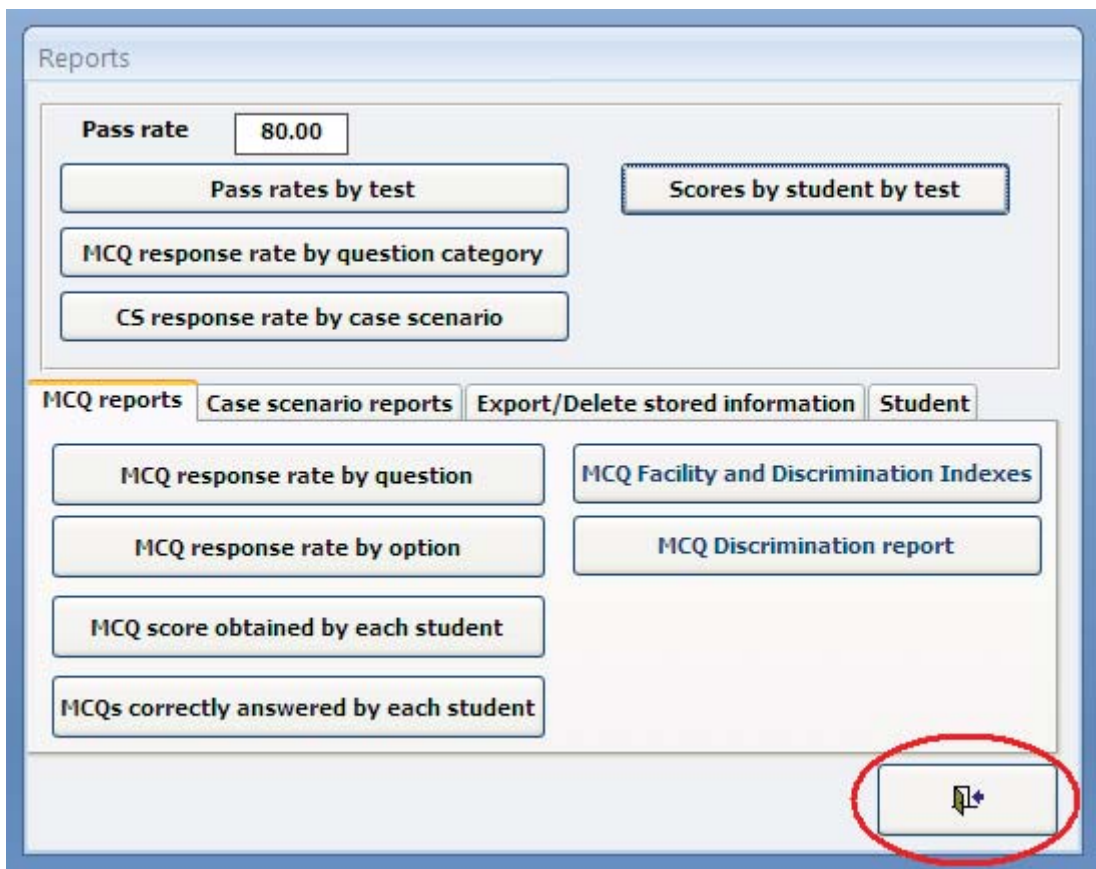




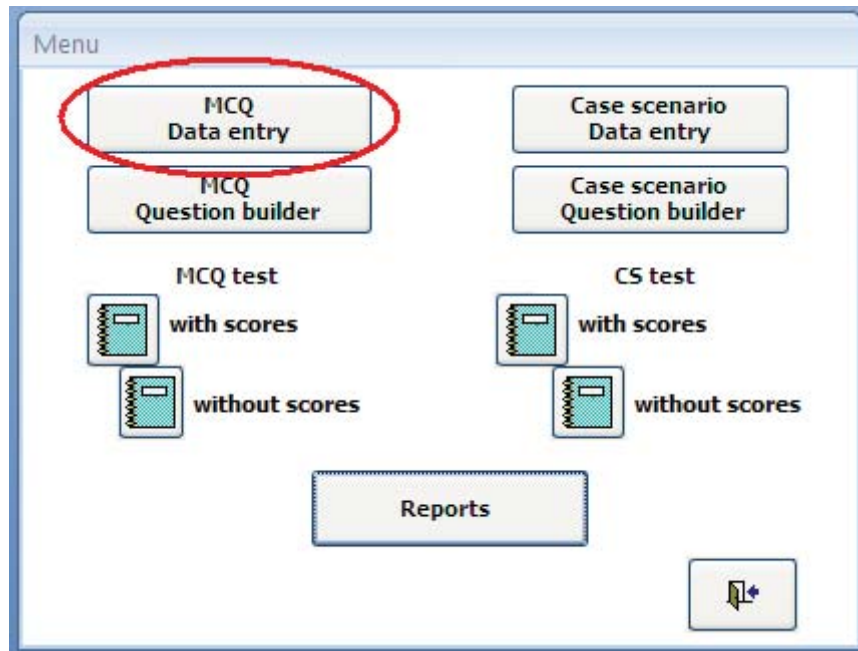
- In ACCESS 2003, click on the small black  icon on the top right-hand corner of the inside window, placed under the bigger  red icon (which, if clicked, would close the whole program) or click on “Close” in the menu, as shown below:



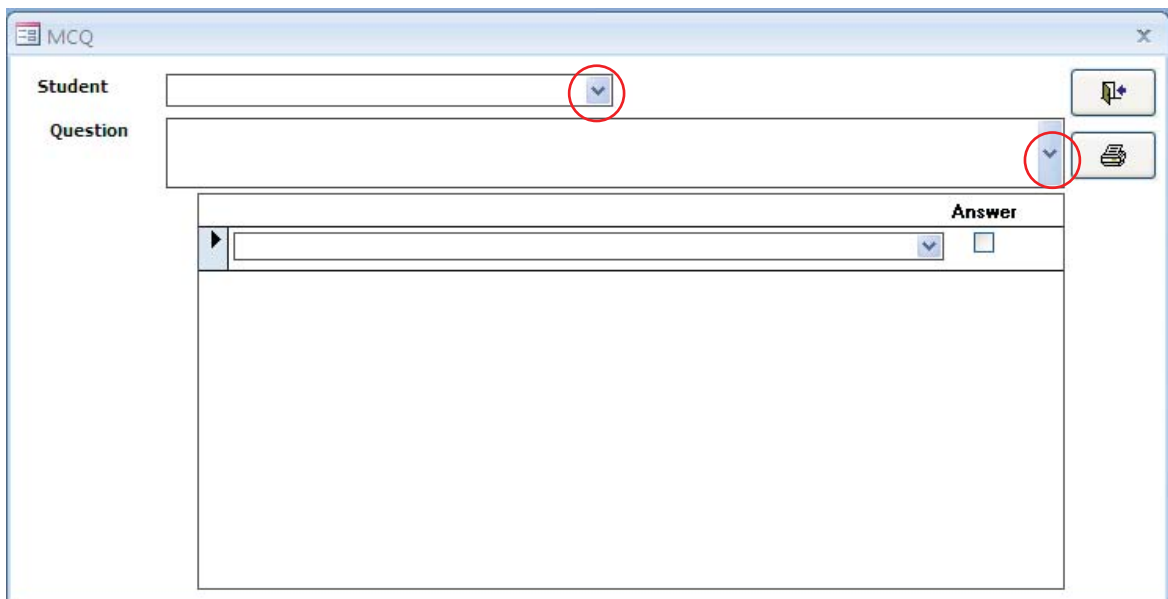
- Click on the exit icon at the bottom right-hand side of the window to exit the report menu, as shown here: 



- Click on “MCQ Data entry” button of the menu window:



- The data entry window is displayed:



- Click on the down arrow of the “Student” field and select “Student 01”, which in our example is the student for which you want to check the data entered because the report has showed a different value for the MCQ percentage score.
- Click on the down arrow of the “Question” field and select question “A01. Which of the following..”. The window populates right away with the answers that you have entered, shown as a tick:

- Check each item, one by one, to see whether any tick has been misplaced.

MCQ

Student: Student 01

Question: A1. Which of the following age groups do the IMCI clinical guidelines address? (circle only ONE answer)

	Answer
a. Birth up to 5 years	<input checked="" type="checkbox"/>
b. 2 months up to 2 years	<input type="checkbox"/>
c. 1 week up to 5 years	<input type="checkbox"/>
d. 2 months up to 6 years	<input type="checkbox"/>
* [ ]	<input type="checkbox"/>

- Repeat the process for each question. In our example, there are only two questions, so click on the second question to see the data entered as answers to this question for the student 01:

MCQ

Student: Student 01

Question: B1. According to the IMCI guidelines, which of the following main symptoms should always be assessed in every sick child age 2 months up to 5 years? (circle all the correct options)

	Answer
a. Cough	<input checked="" type="checkbox"/>
b. Abdominal pain	<input type="checkbox"/>
c. Fever	<input checked="" type="checkbox"/>
d. Skin infection	<input type="checkbox"/>
e. Diarrhoea	<input checked="" type="checkbox"/>
* [ ]	<input type="checkbox"/>

- If you need to make any correction, simply click on the ticked checkbox to remove the wrong “tick” or tick on an empty checkbox to place the “tick” on a different option.
- Data are automatically saved by the program.



- So, once you are finished, simply click on the exit icon, on the top right-hand side corner to go back to the menu window:

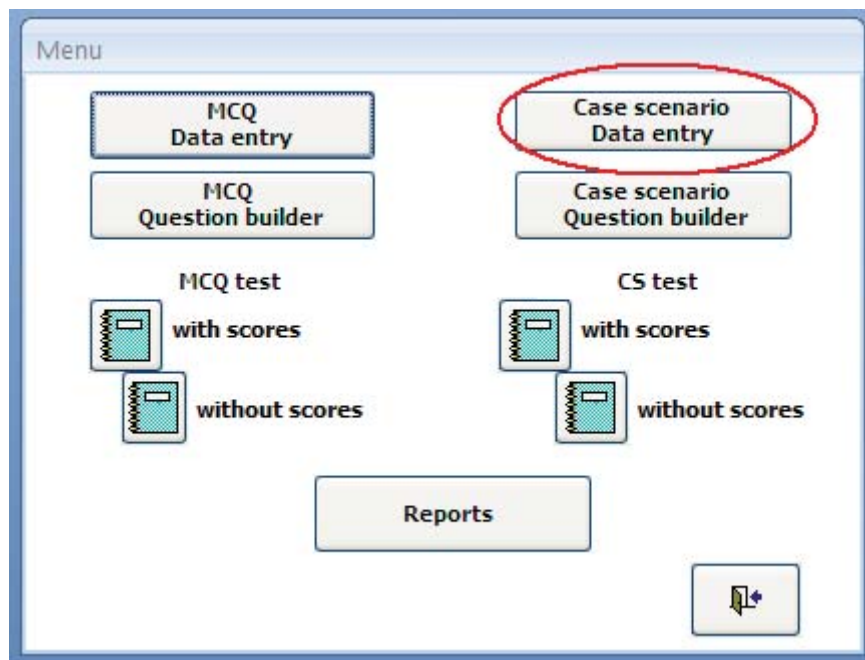
MCQ

Student: Student 01

Question: B1. According to the IMCI guidelines, which of the following main symptoms should always be assessed in every sick child age 2 months up to 5 years? (circle all the correct options)

	Answer
a. Cough	<input checked="" type="checkbox"/>
b. Abdominal pain	<input type="checkbox"/>
c. Fever	<input checked="" type="checkbox"/>
d. Skin infection	<input type="checkbox"/>
e. Diarrhoea	<input checked="" type="checkbox"/>
* [ ]	<input type="checkbox"/>

- In the report menu window, click again on the “**Reports**” button to check the percentage scores for student 01 and see whether they now correspond with those of the other data entry operator. If they do and there are no other inconsistencies, you are finished with data validation and can proceed to view the reports on data analysis. If there are still unmatched percentage scores, check them as described for student 01. If there is any different percentage score for the case scenario, then go to the data entry area for case scenarios in the menu window and follow the steps described for the MCQs:



This process of data validation is essential to make sure that all entries are correct. The percentage scores given in the report of one data entry operator for each student for MCQs, Case scenarios and both (knowledge) must match those displayed in the report of the second data entry operator. Any mismatching value must be checked as explained above.

The knowledge test contains many MCQs and case scenarios, so data entry takes time but also checking for any mismatching values is rather time-consuming. Therefore, it is important to place much attention when the data are entered, so that data entry is performed correctly and there is no need to validate too many items. It is preferable to enter data more slowly but correctly than to spend time checking them afterwards if any of them has been entered incorrectly.

It is advisable that the two different data entry operators check the data entered every day at the end of each day. In fact, on the last day of data entry, data should be ready for the analysis on the same day and there would be very limited time to check possible inconsistencies for the whole dataset of knowledge assessment test.

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 **Reminder: Always validate your data!**

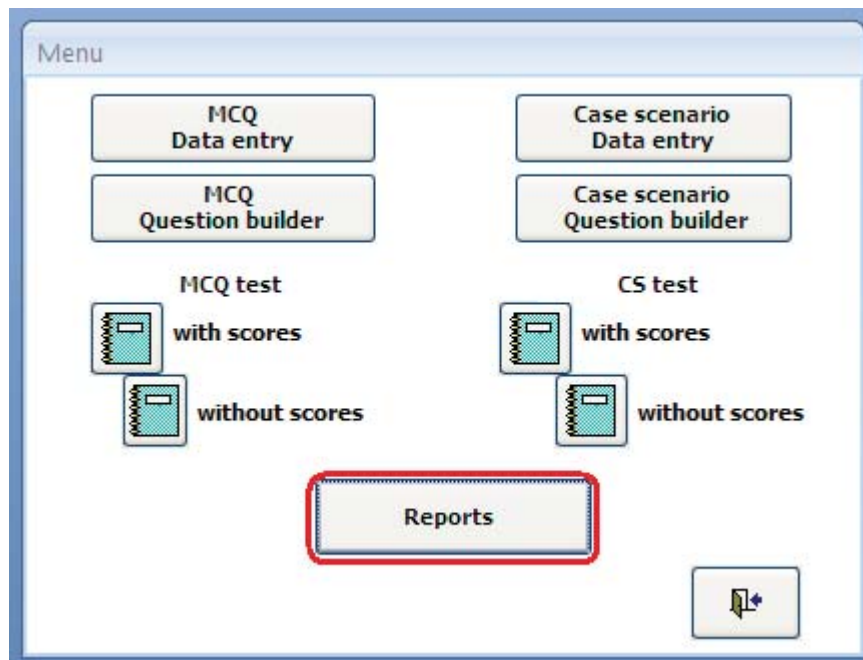
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## Data analysis: understanding the report indicators

The program automatically generates information on a number of indicators for data analysis. More information on the indicators and their definitions is given in the Evaluation Guide's section 8.2.2 Analysing and presenting results under 8. Analysis and presentation of findings.

To access the report section of the program, follow the steps described below. The example used here follows through the same example given earlier based on the data you have entered.

- To access the dataset, follow the instructions given in the previous sections: double click on the file "**Copy of Practice develop MCQ\_CS**" that you created in the previous exercise—in which you entered the two MCQs and the case scenario with two questions—and then click "**Open**" in Access 2003 when the security warning appears ("enable content" under "Options" in Access 2007).
- The "**Menu**" is displayed on the screen; click on the button "**Reports**":



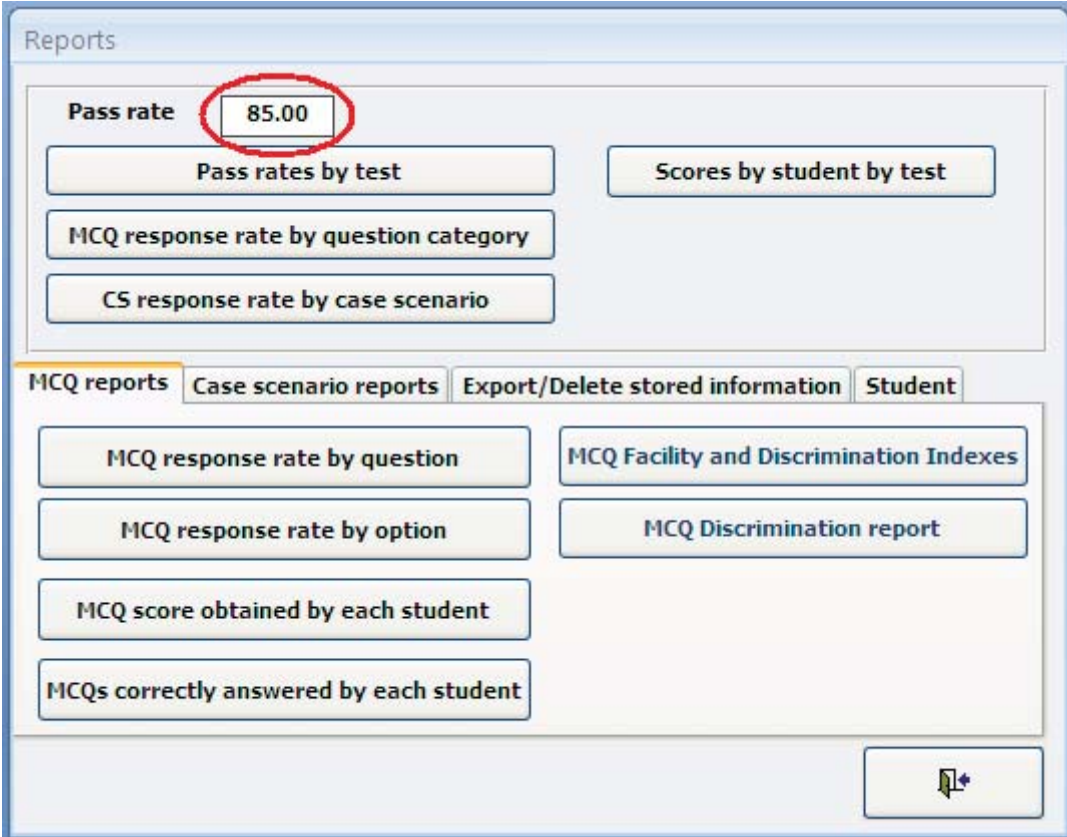
The following screen appears:

The screenshot shows a software interface titled "Reports". At the top, there is a "Pass rate" label followed by a text input field containing the value "80.00". Below this, there are four buttons: "Pass rates by test", "Scores by student by test", "MCQ response rate by question category", and "CS response rate by case scenario". A horizontal tab bar below these buttons has four tabs: "MCQ reports" (which is selected and highlighted in yellow), "Case scenario reports", "Export/Delete stored information", and "Student". Under the "MCQ reports" tab, there are seven buttons arranged in two columns: "MCQ response rate by question", "MCQ Facility and Discrimination Indexes", "MCQ response rate by option", "MCQ Discrimination report", "MCQ score obtained by each student", and "MCQs correctly answered by each student". At the bottom right of the interface, there is a button with a printer icon.

The key indicator of this analysis is the “**knowledge percentage score**”, which is the proportion of students taking the test who obtained the “passing score”, meaning the agreed percentage of the maximum score allotted to the test. So, if it was agreed that students should get at least 80% of the total score, “80%” is the passing score level.

The program allows the user to enter any passing score level, which depends on what has been agreed earlier based on the difficulty of the test. This cut-off value of percentage score needs to be entered manually.

- On top of the report window, there is a small window (“labelled as “**Pass rate**”), which displays the value “**80.00**” (that is “80%”) by default. Enter here the passing score level that has been agreed for your test. For example, type with the keyboard the value of **85** if the agreed value is 85%. Then, press “**Enter**”. The window will look like this:



The screenshot shows a software interface titled "Reports". At the top, there is a "Pass rate" label next to a text input field containing the value "85.00", which is circled in red. Below this are several buttons: "Pass rates by test", "Scores by student by test", "MCQ response rate by question category", and "CS response rate by case scenario". A tabbed interface follows, with "MCQ reports" selected. Under this tab, there are buttons for "MCQ response rate by question", "MCQ Facility and Discrimination Indexes", "MCQ response rate by option", "MCQ Discrimination report", "MCQ score obtained by each student", and "MCQs correctly answered by each student". A small icon with a plus sign is located in the bottom right corner of the window.

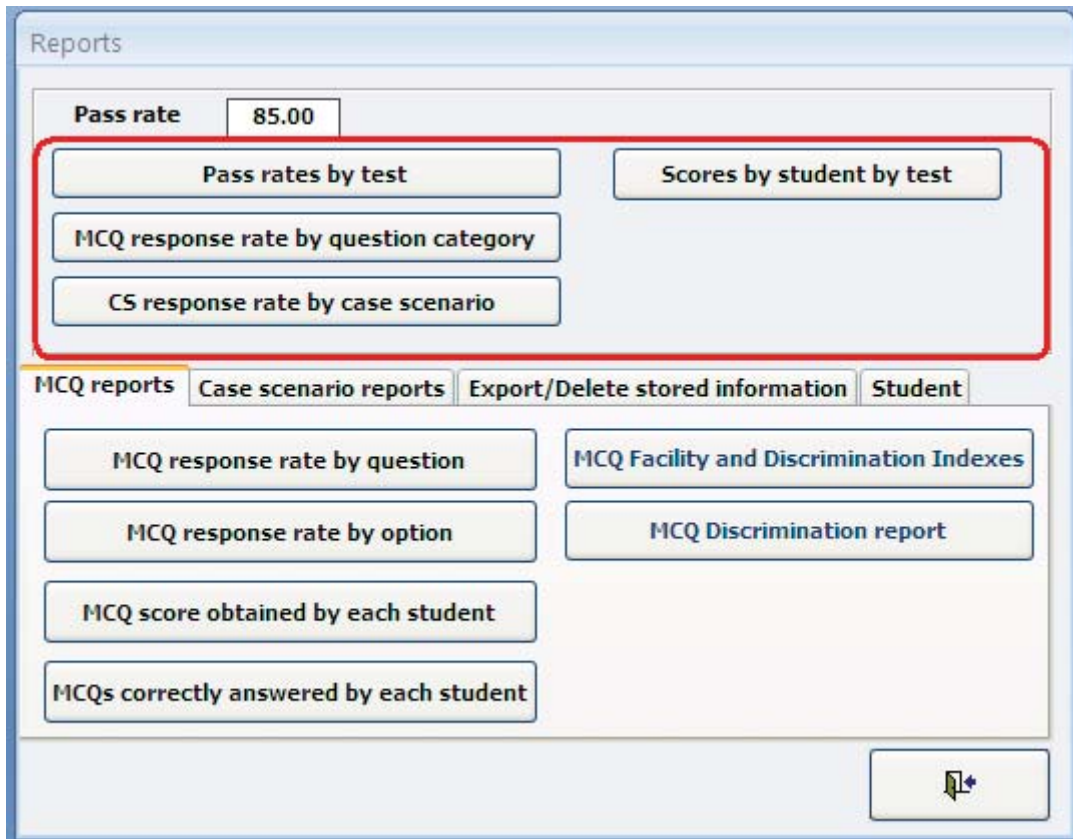
Below this little window where you have just entered “85”, in the upper left part of the report window, are three buttons related to indicators that are affected by the value of the passing score that you have just entered. This means that, depending on which value you enter in the little window of the “**Pass rate**”, the results will differ.

The screenshot shows a software interface titled "Reports". At the top left, there is a "Pass rate" label next to a text input field containing the value "85.00". This input field and the three buttons below it are enclosed in a red rectangular box. The buttons are labeled "Pass rates by test", "MCQ response rate by question category", and "CS response rate by case scenario". To the right of these buttons is another button labeled "Scores by student by test". Below the main report area, there are four tabs: "MCQ reports", "Case scenario reports", "Export/Delete stored information", and "Student". Under the "MCQ reports" tab, there are several buttons: "MCQ response rate by question", "MCQ response rate by option", "MCQ score obtained by each student", and "MCQs correctly answered by each student". To the right of these buttons are two more buttons: "MCQ Facility and Discrimination Indexes" and "MCQ Discrimination report". At the bottom right of the window, there is a small icon of a printer with a plus sign.

No other indicator in this report section is affected by such value: this is because all the other indicators refer to the percentage scores actually obtained by each student or the number of questions correctly answered by each student, which are irrespective of any passing score level, to enable further analysis of the test results.

The indicators are arranged in a hierarchical pattern (first overall results of the test, then results by each MCQ and finally by each option per MCQ) as follows:

- In the upper half of the window:



To the left:

- **“Pass rates by test”**: first is the percentage of students who passed the whole knowledge test—this is the overall indicator—with breakdown by test component, so the percentage of students who passed the MCQ component and the percentage of those who passed the Case scenario component of the test;
- **“MCQ response rate by question category”**: next, below, are the results for the MCQs presented by question category;
- **“CS response rate by case scenario”**: next, similarly, are the results for the case scenarios presented by each case scenario.

To the right:

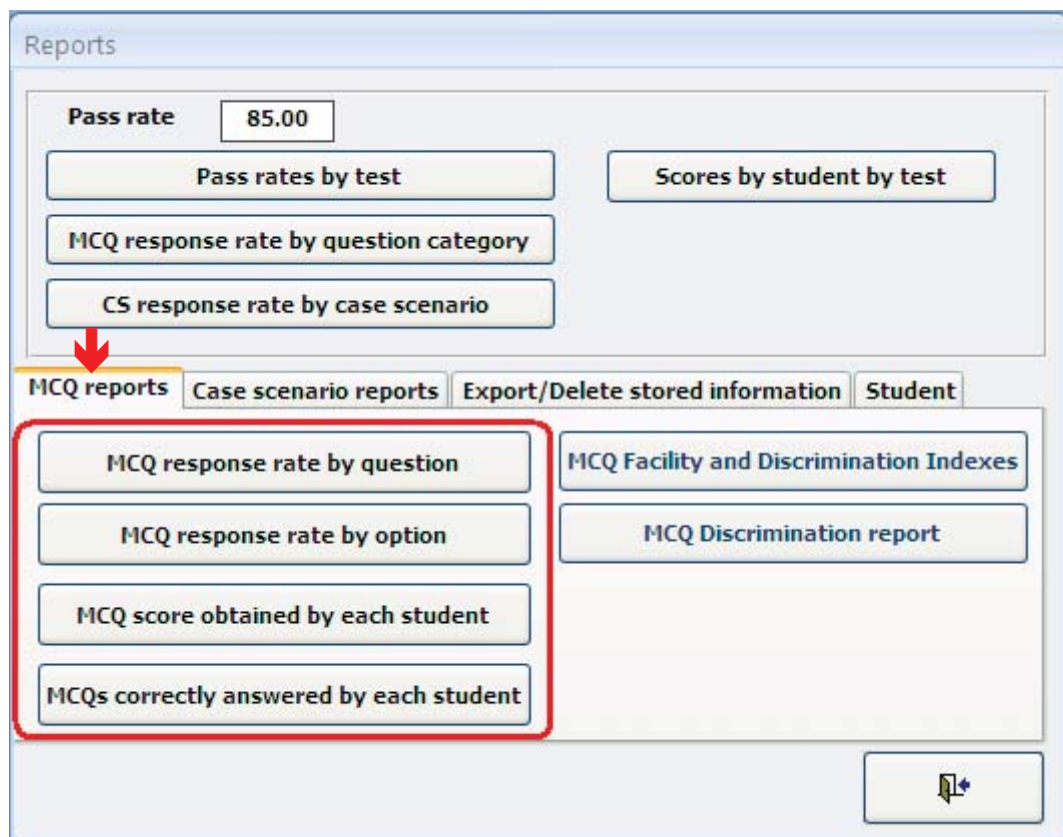
- **“Scores by student by test”**: these are the results with the percentage scores obtained by each student by test.



- In the lower half of the window:

*Under the tab “MCQ reports”*

To the left:



- “MCQ response rate by question”: details of correct responses to each question;
- “MCQ response rate by option”: details of correct responses to each question by option;
- “MCQ score obtained by each student”: percentage scores obtained by each student in the MCQ test;
- “MCQs correctly answered by each student”: number of MCQs correctly answered by each student;



To the right:

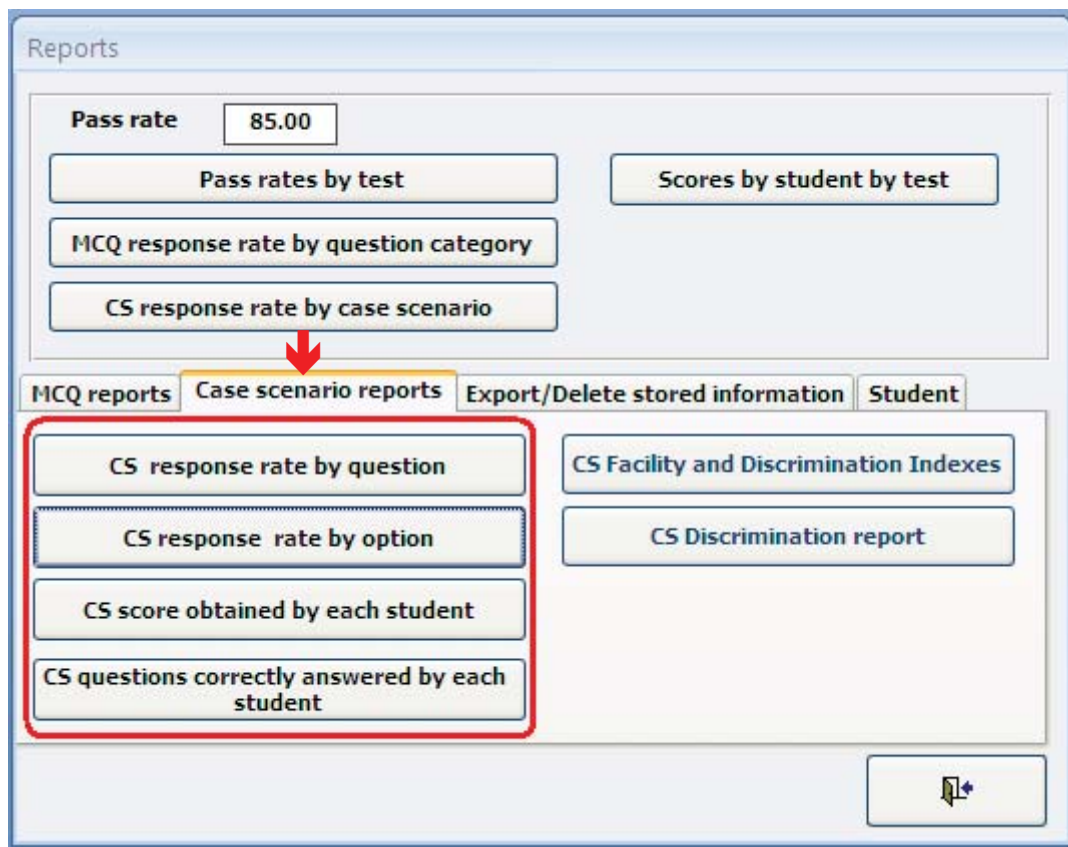
The screenshot shows a 'Reports' window with the following elements:

- Pass rate:** 85.00
- Buttons:**
  - Pass rates by test
  - Scores by student by test
  - MCQ response rate by question category
  - CS response rate by case scenario
- MCQ reports tab (selected):**
  - MCQ response rate by question
  - MCQ response rate by option
  - MCQ score obtained by each student
  - MCQs correctly answered by each student
  - MCQ Facility and Discrimination Indexes** (highlighted)
  - MCQ Discrimination report** (highlighted)
- Other tabs:** Case scenario reports, Export/Delete stored information, Student
- Bottom right:** A button with a printer icon and a plus sign.

- **“MCQ Facility and Discrimination Indexes”** and **“MCQ Discrimination report”**: report on the facility index (FI) and discrimination index (DI) of each MCQ as part of the knowledge test item analysis. These indexes are explained in the section on “Item analysis”.

Under the tab “Case scenario reports”

To the left:



- “CS response rate by question”: details of correct responses to each question by case scenario;
- “CS response rate by option”: details of correct responses to each question of case scenarios by option ;
- “CS score obtained by each student”: percentage scores obtained by each student in the case scenario test;
- “CS questions correctly answered by each student”: number of questions of case scenarios correctly answered by each student.

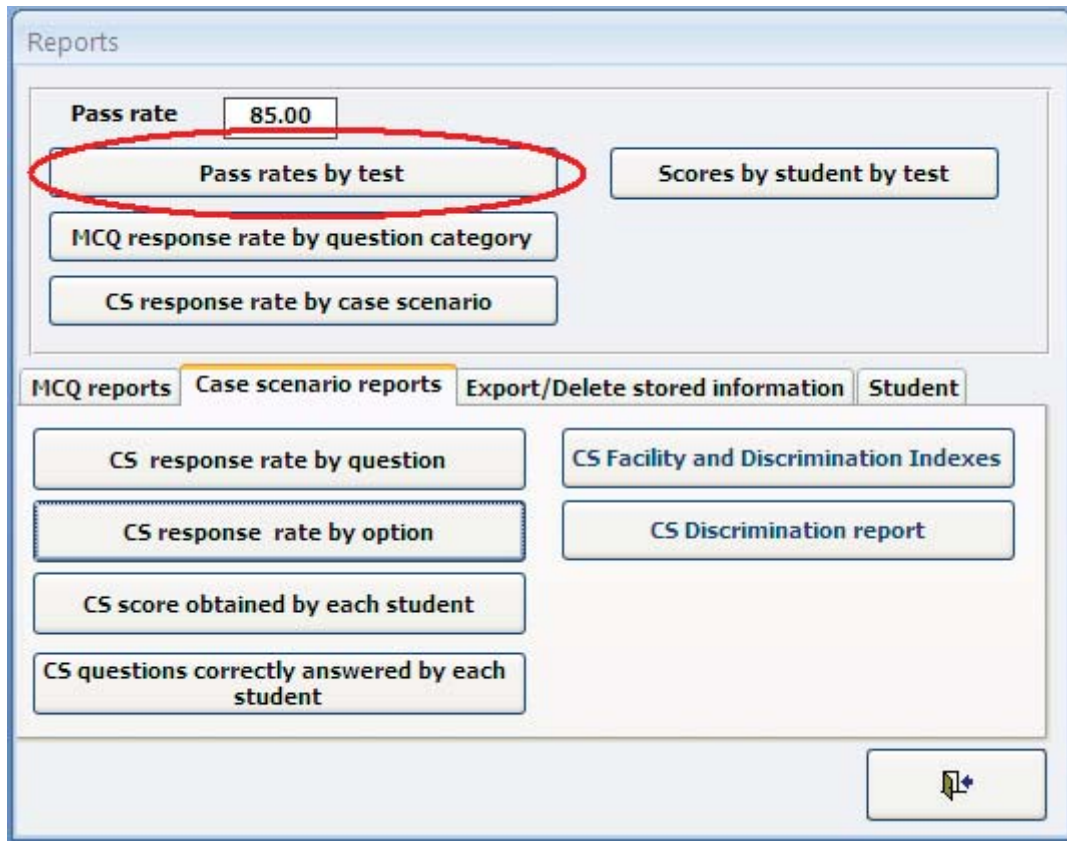
To the right:

- “**CS Facility and Discrimination Indexes**” and “**CS Discrimination report**”: report on the facility index (FI) and discrimination index (DI) of each question of the case scenarios as part of the knowledge test analysis. These indexes are explained in the section on “Item analysis”.

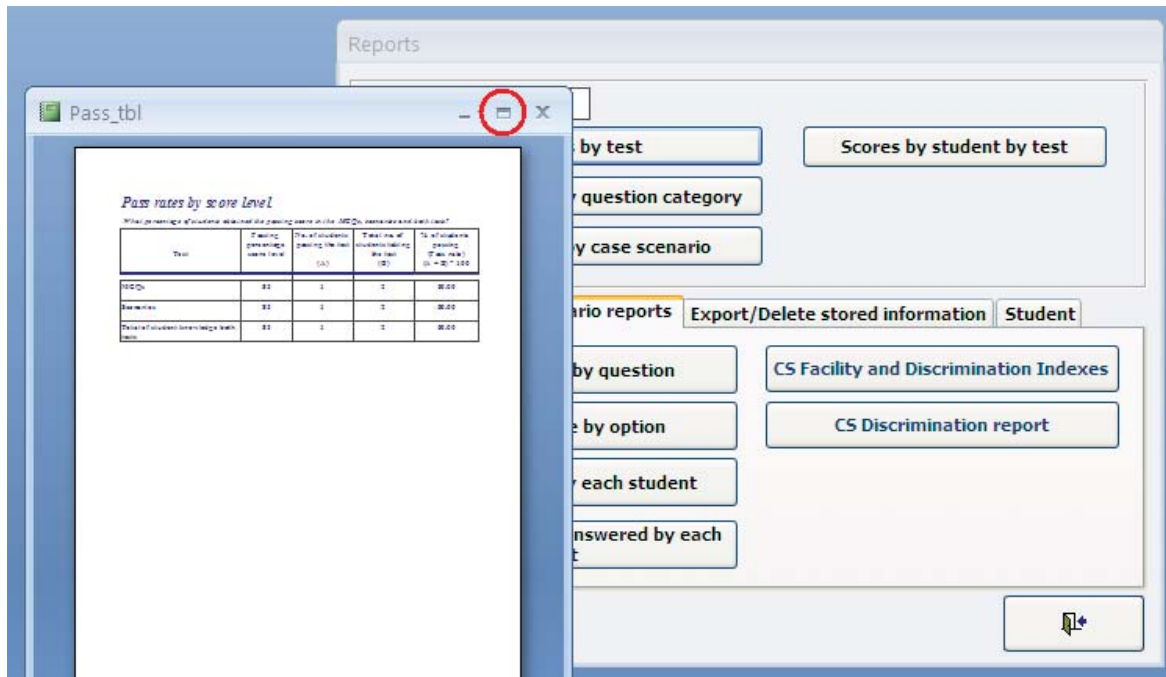
To view these reports, you only need to click on the respective buttons and maximize the view.

Remember that the first three reports listed in the upper left half of the window give the results based on the passing score value that you enter in the little window above each time. As we have entered “85%” in our example, the three reports will display the results of the percentage of students who obtained 85% or more of the total score allotted to the test. All the other reports are unaffected by this value, as explained earlier.

- Click on “Pass rates by test” to view the report on the overall indicator of the test:



- Maximize the new window, by clicking on  at the top right corner of the window:



- The mouse pointer turns to a lens with the + sign, to enable you to maximize the window. Click once with the mouse inside the window for a better view. The report display on the screen should now look like this:

### *Pass rates by score level*

*What percentage of students obtained the passing score in the MCQs, scenarios and both tests?*

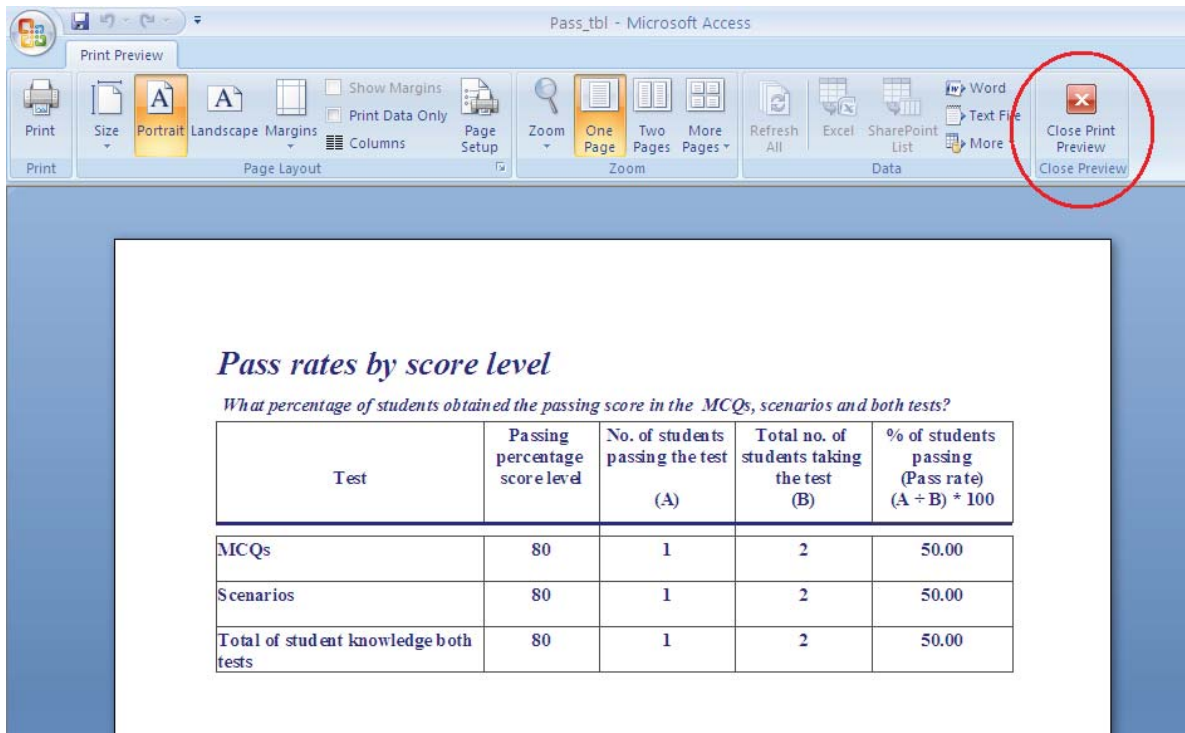
Test	Passing percentage score level	No. of students passing the test (A)	Total no. of students taking the test (B)	% of students passing (Pass rate) $(A \div B) * 100$
MCQs	85	1	2	50.00
Scenarios	85	1	2	50.00
Total of student knowledge both tests	85	1	2	50.00



This report, titled “**Pass rates by score level**” answers the question: “**What percentage of students obtained the passing score in the MCQs, scenarios and both tests?**” The report displays: the “passing percentage score level” that was set, “85%” in our example; the number of students passing the test based on that level (numerator); the number of students who took the test (denominator); and the rate, namely the percentage of students passing the test based on a passing score level of “85%”. In the example given, 1 out of 2 students (i.e. 50% of students taking the test) obtained a percentage score of at least 85%.

Had we entered a passing percentage score level of 100 (100%), the results displayed would then have referred to the percentage of students who answered all the MCQs, scenarios and both tests correctly.

To exit this report and return to the report menu:

- In ACCESS 2007: click on the “Close Print Preview” icon on top:



- In ACCESS 2003, click on the small black  icon on the top right-hand corner of the inside window, placed under the bigger  red icon (which, if clicked, would close the whole program) or click on “Close” in the menu, as shown below:





- To view the next report, click on the button “**MCQ response rate by question category**” and follow the same steps described above for the “Pass rates by test” report:

The screenshot shows a software interface for generating reports. At the top, there is a 'Pass rate' field set to '85.00'. Below this are four buttons: 'Pass rates by test', 'Scores by student by test', 'MCQ response rate by question category' (highlighted with a red circle), and 'CS response rate by case scenario'. Below these buttons are tabs for 'MCQ reports', 'Case scenario reports', 'Export/Delete stored information', and 'Student'. Under the 'MCQ reports' tab, there are several report options: 'CS response rate by question', 'CS Facility and Discrimination Indexes', 'CS response rate by option', 'CS Discrimination report', 'CS score obtained by each student', and 'CS questions correctly answered by each student'. A small icon with a plus sign is located at the bottom right of the interface.

### **MCQ correct response rate by question category (based on percentage score level)**

*What percentage of students obtained the passing score in each MCQ category?*

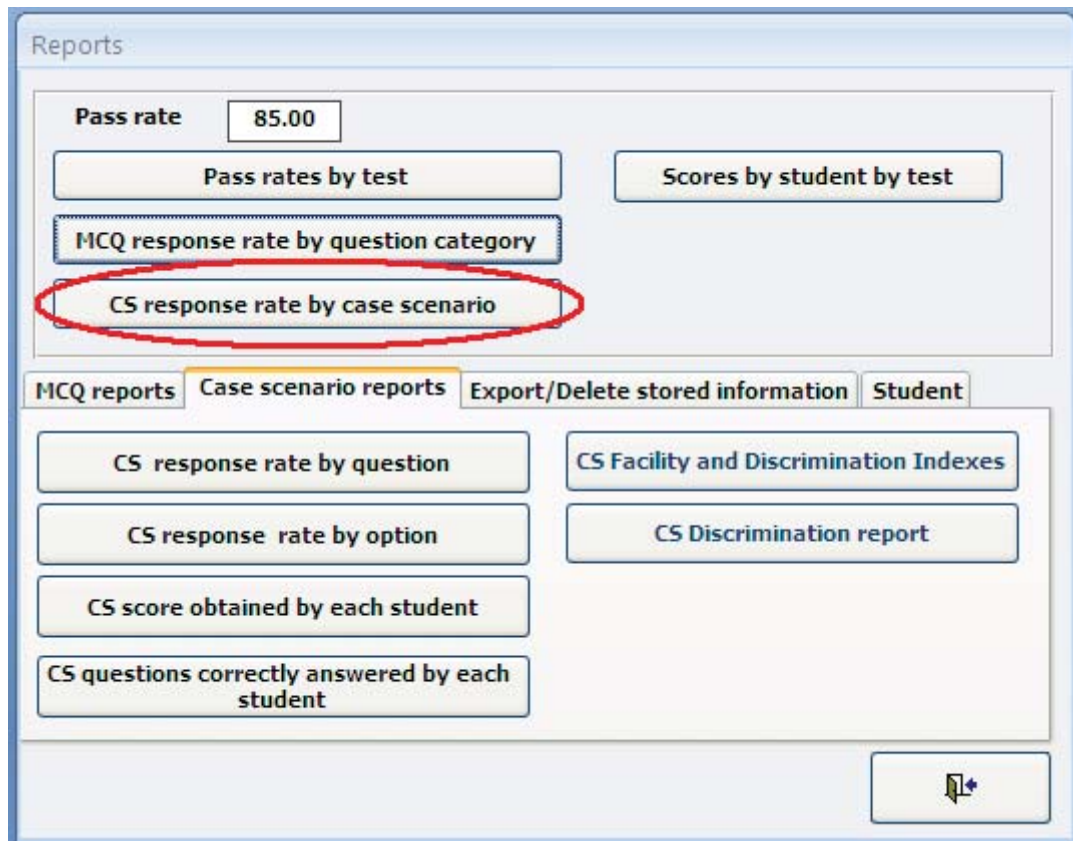
Category	No. of students passing MCQs within the category (A)	Total no. of students taking the test (B)	% of students passing MCQs within the category $(A \div B) * 100$	Passing percentage score level
A. IMCI guidelines	1	2	50.00%	85
B. ASSESS AND CLASSIFY	1	2	50.00%	85

This report, titled “**MCQ correct response rate by question category**” answers the question: “**What percentage of students obtained the passing score in each MCQ category?**” In this example, the report shows the results for two categories of questions, namely “**A. IMCI guidelines**” and “**B. Assess and classify**”: the number of students passing each category of MCQs (numerator), the number of students who took the MCQ test (denominator) and the rate, namely the percentage of students passing MCQs within each category based on a passing score level of “85%”, shown in the last column. In the example given, one out of two students (i.e. 50% of students taking the test) obtained a percentage score of at least 85% in the category of MCQs related to the “IMCI guidelines” and the same percentage of students (50%) obtained a percentage score of at least 85% in the category of case scenarios related to “Assess and classify”.

This information helps analyse results by topics, to identify potential issues with a specific topic.

Exit this report as described earlier to return to the report menu.

- To view the next report, click on the button “**CS response rate by case scenario**” and follow the same steps described above for the “Pass rates by test”:



### ***CS correct response rate by case scenario (based on percentage score level)***

*What percentage of students obtained the passing score in each case scenario?*

Case scenario	No. of students passing each case scenario (A)	Total no. of students taking the case scenario test (B)	% of students passing each case scenario $(A \div B) * 100$	Passing percentage score level
Case scenario 1 (Fatima)	1	2	50.00%	85

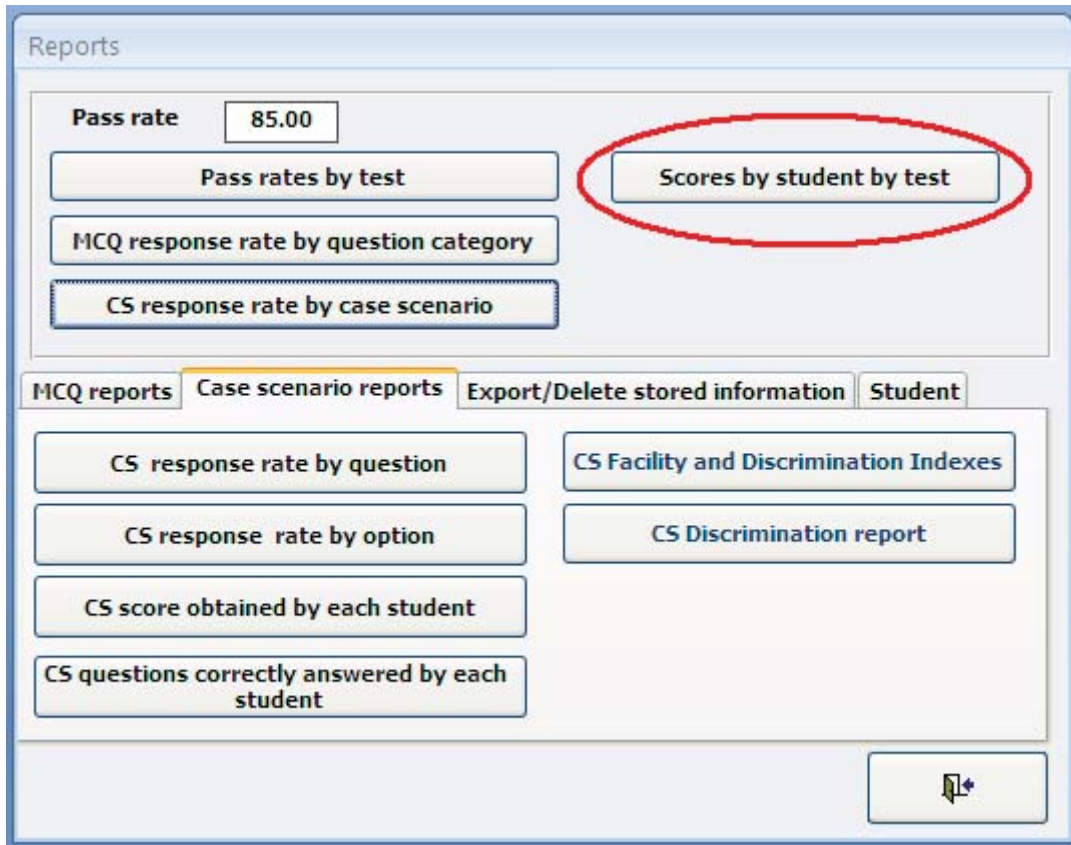
This report, titled “**CS correct response rate by case scenario**” answers the question: “***What percentage of students obtained the passing score in each case scenario?***” In this example, the report shows the results only for one case scenario (Fatima) as that was the only case scenario that was entered. However, if more than one case scenario is included in the test, the results will be presented by each case scenario, in the same way as those for MCQs are presented by each question category. The report shows the number of students passing each case scenario (numerator), the number of students who took the case scenario test (denominator) and the rate, namely the percentage of students passing each case scenario based on a



passing score level of “85%”, shown in the last column. In the example given, one out of two students (i.e. 50% of students taking the test) obtained a percentage score of at least 85% in case scenario 1.

This information helps analyse the results by case scenario to identify potential issues with a specific case scenario.

- To view the last report of the upper part of the report menu window, Click on the first button on the top to the right “Scores by student by test”:



### *Percentage score obtained by each student by test*

*Which percentage score was obtained by each student in the MCQs, case scenarios and both tests?*

<i>Student</i>	<i>MCQs</i>	<i>Case scenarios</i>	<i>Knowledge (MCQs and Case scenarios)</i>
Student 01	100.00%	100.00%	100.00%
Student 02	50.00%	66.67%	57.14%

This report, titled “Percentage scores obtained by each student by test” answers the question: “*Which percentage score was obtained by each student in the MCQs, case scenario and both tests?*” In this example, the report shows the results obtained by each of the two students for whom we entered the data.

This information gives a useful overview of the test results.

The reports listed under the tabs “MCQ reports” and “Case scenario reports” provide further information for detailed analysis.

## Item analysis

The program provides also useful information to analyse the items of the test and determine their effectiveness. This analysis helps place and present the results in the right context and revise items for future tests. The analysis becomes especially important if the test is used for summative assessments (examinations) when the *individual* student is tested rather than the *group* of students as is instead the case in evaluations of IMCI pre-service education. In the case of examinations, it is essential to measure the level of difficulty of each test item, how well it discriminates between the group of students with the highest performance in the overall test and those with the lowest performance and how well each item is constructed in terms of both stem and options.

The report generates information for the analysis of the following three items:

- the Facility Index (FI);
- the Discrimination Index (DI); and
- distractor options.

Results on FI and DI are also presented as graphs in the Excel file linked to the program (see “Exporting data to Excel and generating graphs”).

The “Facility Index” (FI) refers to how easy a question is: it is given by the proportion of students who answered correctly a specific item. It is also called “Difficulty Index”. This gives an idea about the level of difficulty not only of each MCQ but also of the whole test. An FI of “0.95” for a specific MCQ item means that that MCQ was answered correctly by 95% of students who took the test. An item is considered:

- “*easy*” if the FI is  $> 0.70$  (i.e. the item has been answered correctly by more than 70% of students who took the test);
- of “*intermediate*” difficulty (average) if the FI is between 0.30 and 0.70 (i.e. the item has been answered correctly by 30% to 70% of students who took the test); and
- “*difficult*” if the FI is  $< 0.30$  (i.e. the item has been answered correctly by more than 70% of students who took the test).

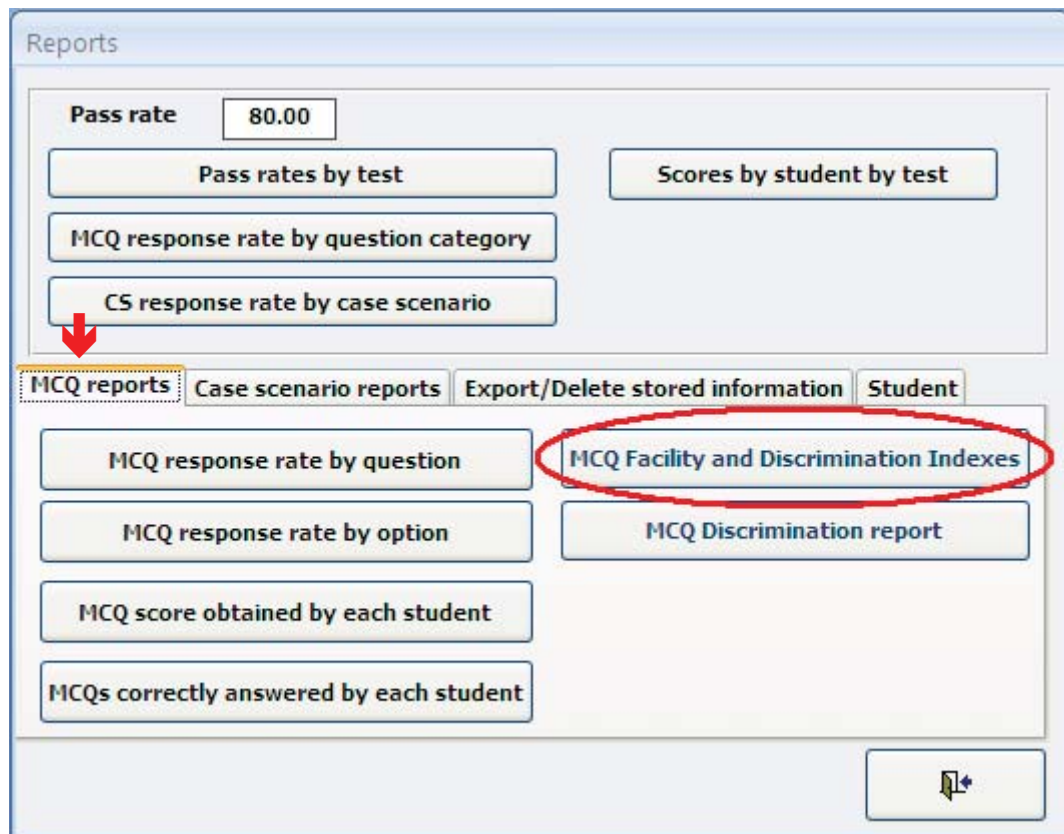
The “Discrimination Index” (DI) refers to how well an MCQ item “discriminates” (distinguishes, differentiates) between two groups of students: those who have had the highest performance in the overall test and those who have had the lowest.<sup>4</sup> It is measured as the difference between the number of students in the higher performance group who answered that MCQ correctly and the number of students in the lower performance group who answered the same MCQ correctly over the total number of students in the first group. A  $DI < 0.30$  is considered low—but may still be acceptable—while a  $DI < 0.15$  is very low and inadequate to discriminate properly between the high and low performance groups. Finally, a negative value means that a higher proportion of students in the low performance group answered that item correctly than the high performance group: this suggests a problem with the construction of the item (options).

<sup>4</sup> The percentages considered here are the 27% top and 27% bottom performers, respectively, of the students taking the test, based on the overall test results. Please, note that the program provided here to calculate the DI gives just an estimate of the DI and will not work reliably if the dataset includes a small number of students or if many students have obtained the same score, as it will be unable to separate the 27% high performance from the 27% low performance group in this case.

Finally, the distractor option analysis is useful to determine how well the “incorrect options” for each MCQ perform as “distractors”, i.e. how plausible they are, and identify areas which may confuse students. The report on the “**MCQ response rate by option**”, described earlier, enables to conduct such an analysis. If many students select an incorrect option, there may be a problem with the formulation of the MCQ item (the question itself or the options provided) or students may have some misunderstanding about that topic. This should be checked with the students and teachers as it is useful feedback for teaching.

The analysis should look at all the three indicators and interpret them together.

To see the FI and DI, the menu report item “**MCQ Facility and Discrimination Indexes**” is provided. Please, note that it may take a long time for the report to be generated and displayed on the screen (one or more minutes), depending on the total number of students for whom data have been entered, the total number of MCQs and your computer. In our case, however, as you have entered the results of only two students to practise, it is not possible to calculate these indexes: if you click at this stage, you may receive an *error message*. In fact, the results of a higher number of students need to be entered, for the index to be calculated by the program based on the top and low performance students.



Please, note that the program to calculate the DI gives just an estimate of the DI and will not work reliably if many students have obtained the same score. In this case, it will not be possible to separate the high performance from the low performance group and you should ignore the DI report.

As an example of the report, below is a sample of such a report obtained from a dataset of an evaluation.

<b>MCQ FACILITY AND DISCRIMINATION</b>			
Facility index: < 0.3 = difficult; 0.3 - 0.7 = intermediate; > 0.7 = easy - Discrimination index: < 0.3 = low and < 0.15 = very low			
Question	Facility index	Discrimination index	Discrimination level
A1. Which of the following is one of the 5 leading causes of mortality in under-five children in the country?	0.95	0.17	LOW
A2. Which of the following age groups do the IMCI clinical guidelines address?	0.56	0.42	GOOD
A3. Which of the following colour-coded classification rows for fever of the IMCI chart booklet would apply to a 5-month-old child with fever and convulsions?	1.00	0.00	LOW
B01. Which of the following signs is a "general danger sign" that you should always check for in every sick child age 2 months up to 5 years, according to the IMCI guidelines?	0.98	0.08	LOW
B02. Which of the following questions should you ask to check for "general danger signs" in a 4-month-old child with fever for 3 days?	0.71	0.50	GOOD

Let's have a look at some of the items of this report. The FI reported for the item A1 above is 0.95. This means that this question has been answered correctly by 95% of students taking the test. As the value of 0.95 is greater than 0.70, this MCQ is considered "easy". The DI for the same item is 0.17. A value less than 0.30 is considered to be "low" (as reported in the last column of the report under "Discrimination level"): this means that this item tends not to discriminate well between high and low performance students. Because of the combination of high 'facility' and low 'discrimination', this item would in principle not be very suitable for an examination.

The FI reported for next item, A2, is 0.56 (i.e. question answered correctly by 56% of students): as the value of 0.56 falls in the range between 0.30 and 0.70, this item has an "intermediate" difficulty. The DI for the same MCQ is 0.42. As this value is > 0.30, it has a good level of discrimination between high and low performance students. This item is suitable for an examination.


An interesting item above is B02. This item has an FI of 0.71 (just above the 0.70 cut-off level for easy items) and a DI of 0.50 (good discrimination level). Because of its good discrimination level, also this item would be suitable for an examination.

Another item in that test—B10, not shown above—has an FI of 0.98 (easy item) and a DI of -0.08 (poor discrimination level). The negative DI means that more students in the low performance group answered correctly this item than the high performance group. This is obviously anomalous. In this case, the analysis should look into the formulation of the incorrect options or distractors (distractor analysis), as some of them may have been misleading to students.

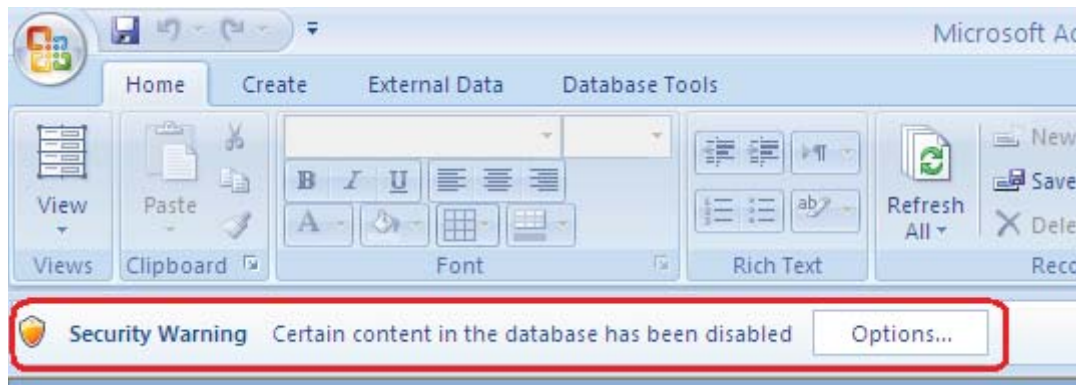
## Exporting data to excel and generating graphs

The program allows you to export the dataset to an Excel file, for those wishing to carry out further analysis and also exporting it to other programs. It also automatically generates a number of graphs in the Excel file for immediate presentation of findings based on the data which have been entered.

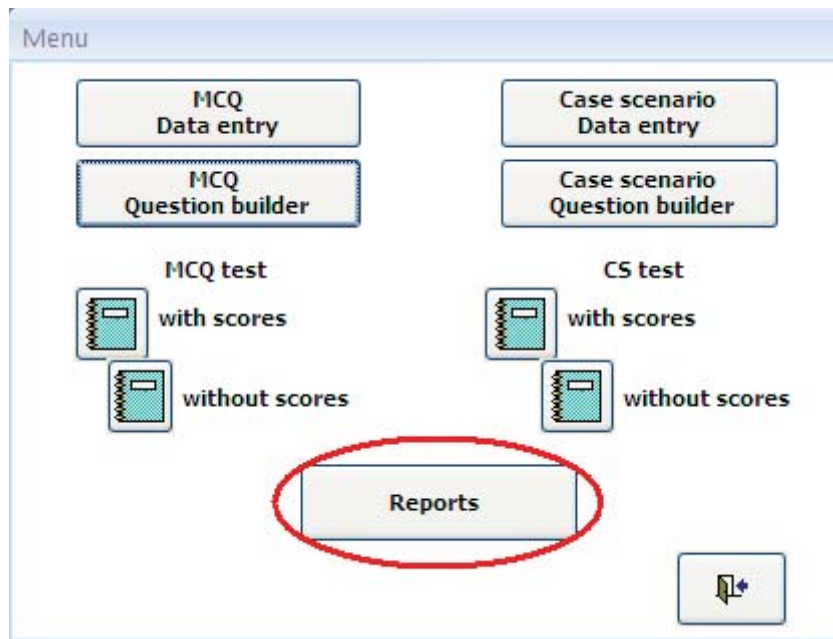
As you have entered data on only two students for two MCQs and one case scenario to practise with data entry, the CD-ROM contains another file for you to practise with this aspect of the program. The file contains data of many students already entered from an easy test of 30 MCQs and five case scenarios. In the folder “**ACCESS practice**” of the CD-ROM, double click on the Access file “**Assessment of student knowledge.mdb**”:

 Assessment of student knowledge.mdb 2,768 KB

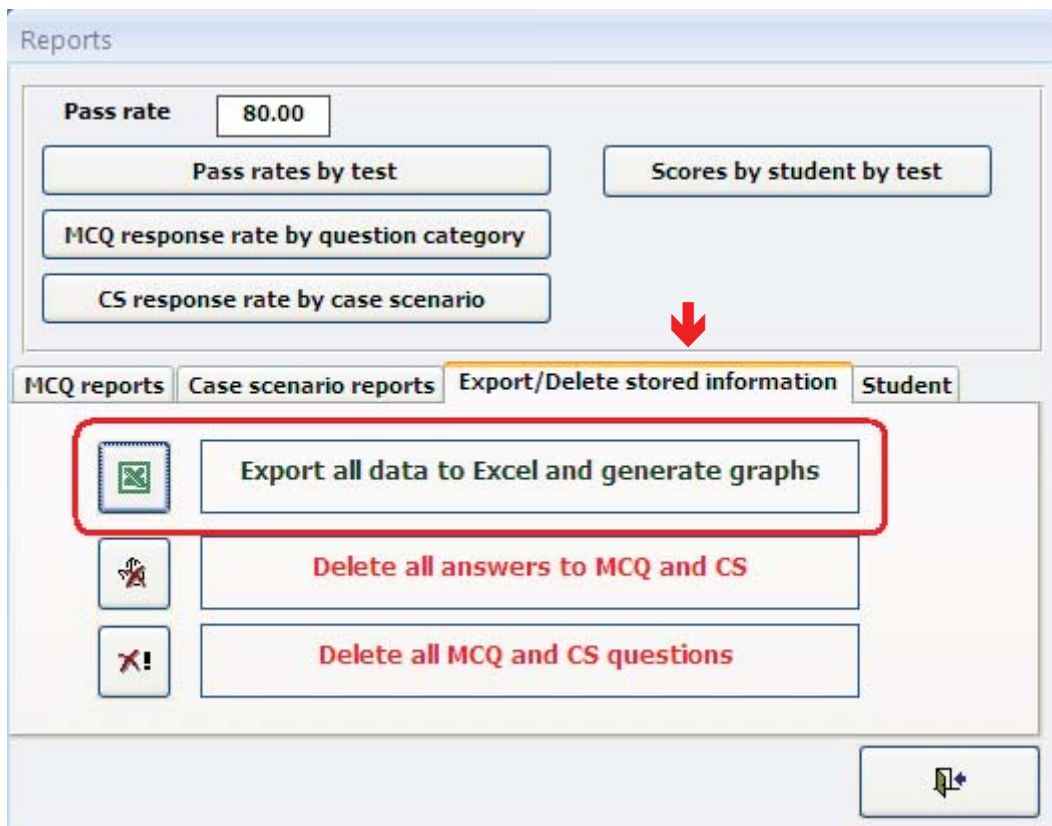
When the security warning appears, remember to enable content, as described in “Instructions for users of Microsoft Office Access 2007” or “Instructions for users of Access 2003”, depending on the version of Access you have.



In the menu, click on “**Reports**”:



Next, click on the tab “**Export/Delete stored information**”. Three items are displayed under this tab. The first on top is “**Export all data to Excel and generate graphs**”.

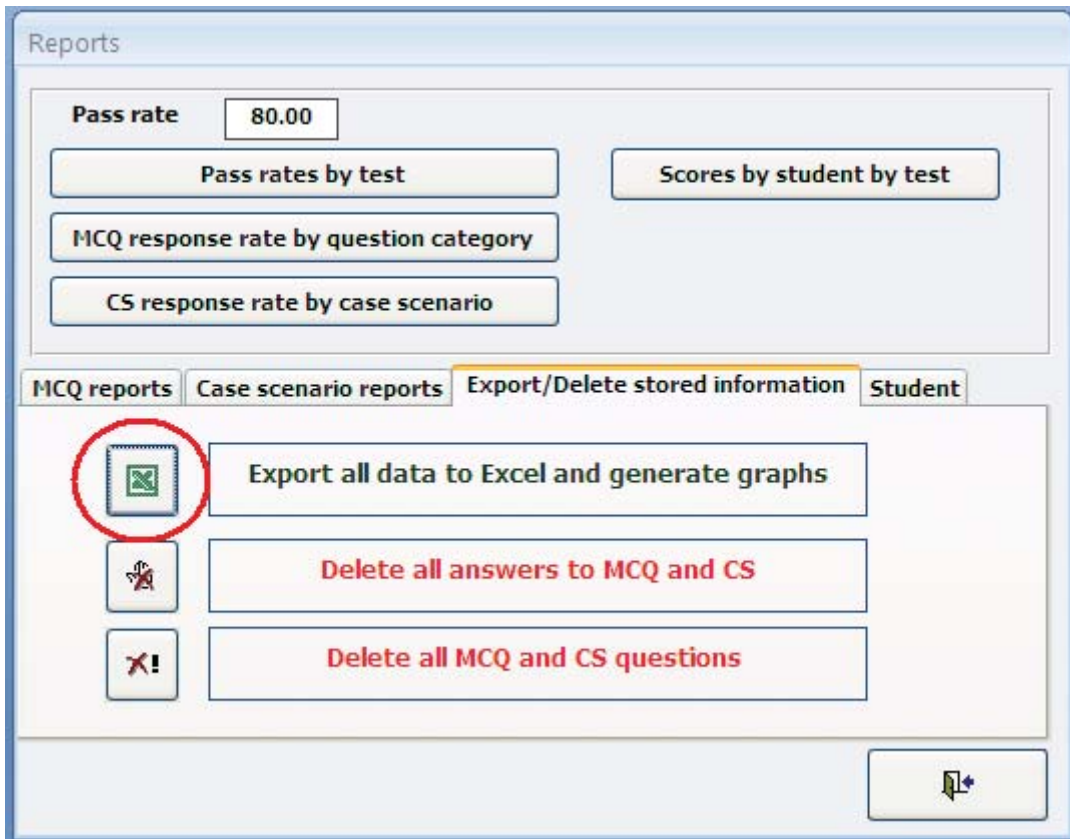




 **Reminder**

**Always ensure that you have both the Access file containing your dataset and the Excel file "CAH\_info" in the same folder, otherwise the export tool will not work.**

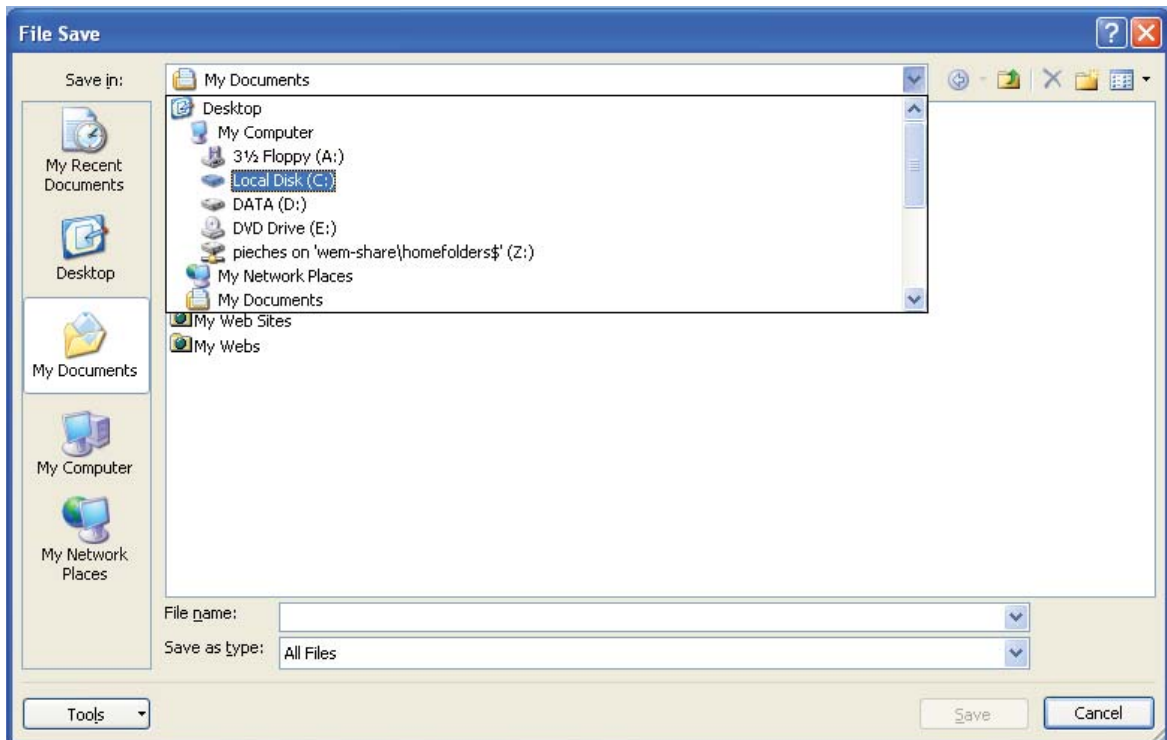
- To export all the data to an Excel file and view the graphs which have been automatically generated, click on the Excel icon:



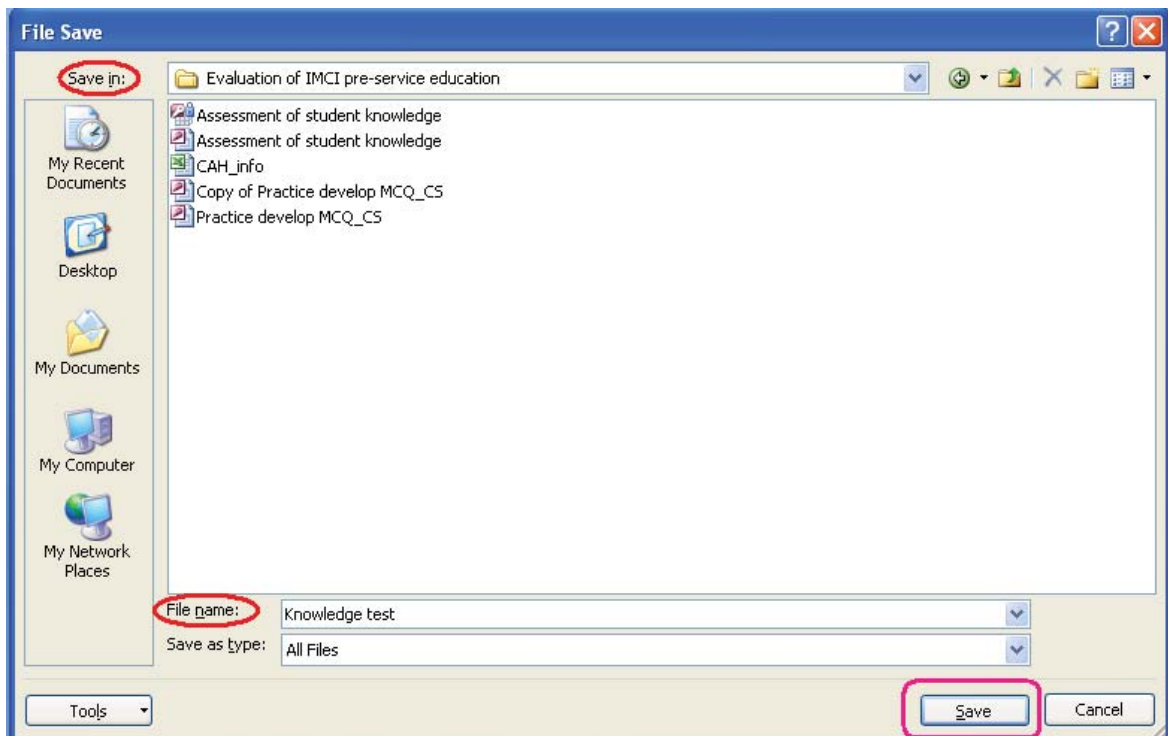
The screenshot shows a 'Reports' window with a 'Pass rate' of 80.00. Below this are buttons for 'Pass rates by test', 'Scores by student by test', 'MCQ response rate by question category', and 'CS response rate by case scenario'. A tabbed interface at the bottom has four tabs: 'MCQ reports', 'Case scenario reports', 'Export/Delete stored information', and 'Student'. The 'Export/Delete stored information' tab is active and contains three buttons: 'Export all data to Excel and generate graphs' (with an Excel icon circled in red), 'Delete all answers to MCQ and CS' (with a trash icon), and 'Delete all MCQ and CS questions' (with a trash icon and an exclamation mark). A 'Print' icon is located at the bottom right of the window.



The following window will appear:

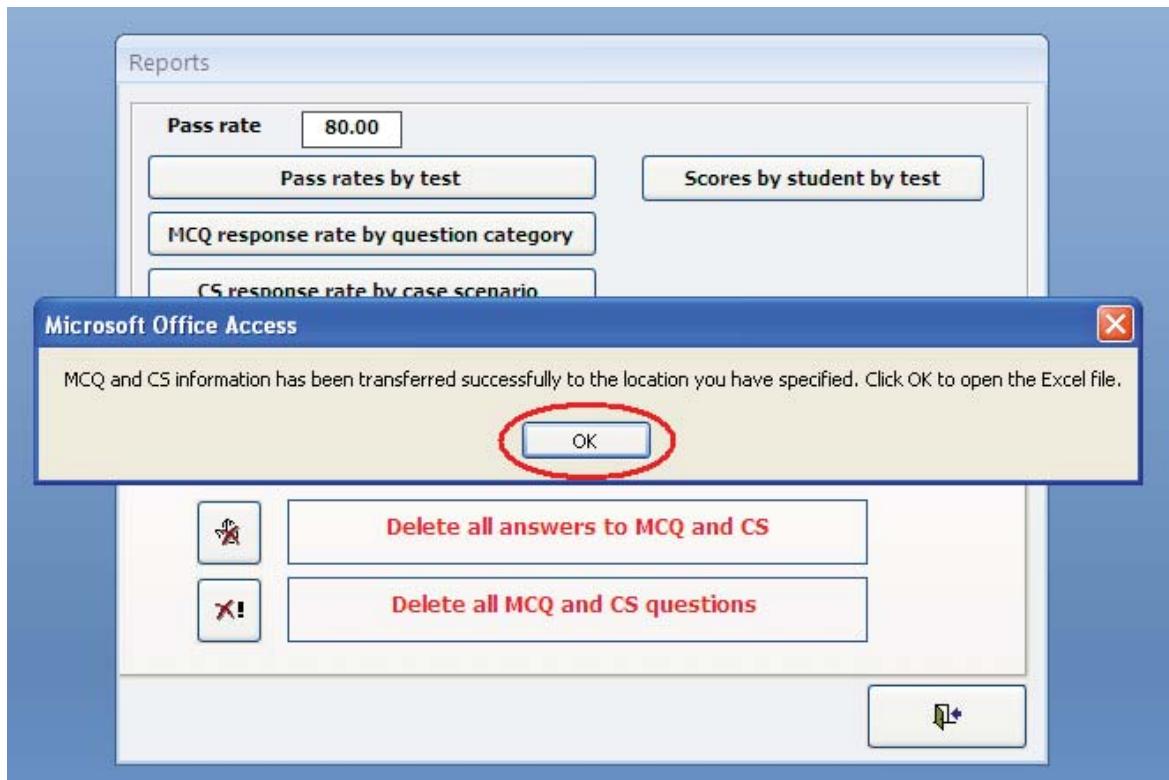


- Select in which folder you want to save your Excel file.
- Then, give a name to the Excel file to which you are exporting the data (e.g. **“Knowledge test”** as shown in the picture below):



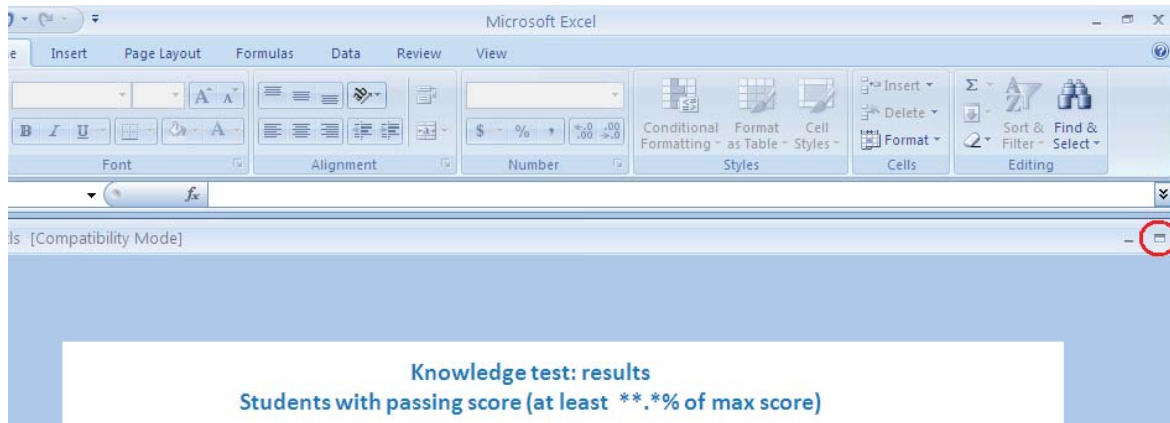
- Click on **“Save”**.

After a while, the following message will be displayed on the screen, indicating that the dataset has been transferred successfully:

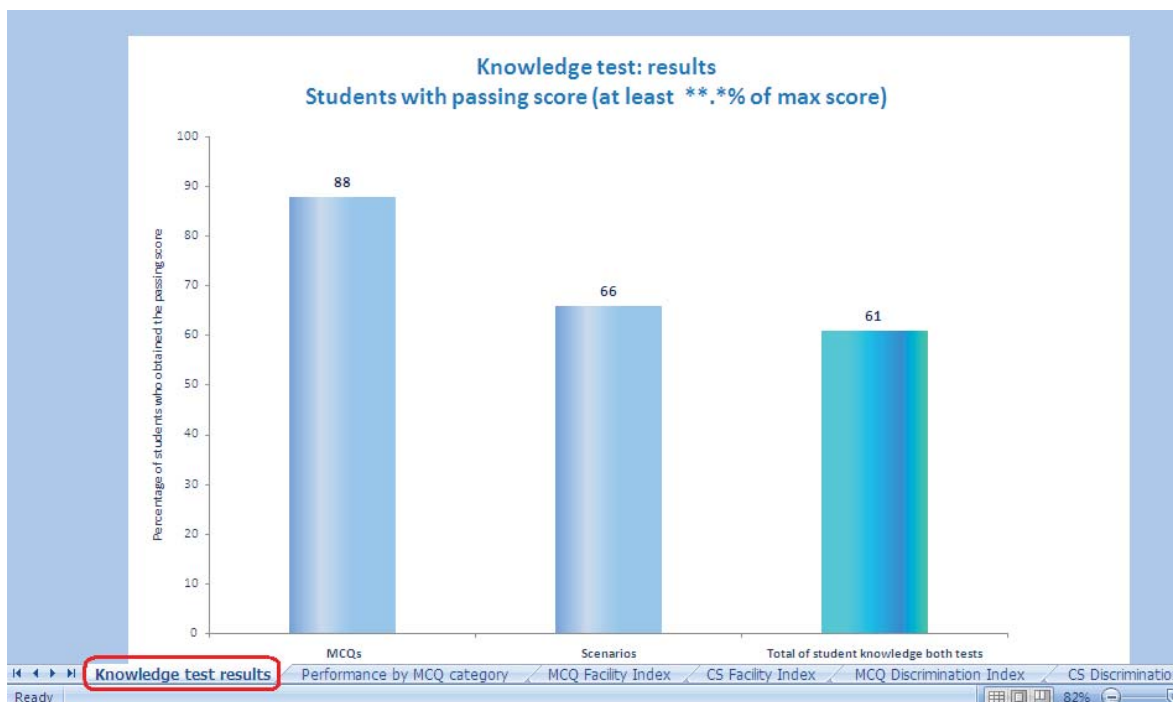


- Click on “**OK**”, to open the file right away. After a few seconds, the Excel file (which has been saved in the folder you have specified) will open automatically.

If you can not see the tabs at the bottom of the Excel file, maximize the inside window by clicking on the icon, as shown below (icon circled in red):



- Click on the tab “**Knowledge test results**” to see the first graph (a column chart):



To view the rest of the Excel file content, click on the other tabs at the bottom of the Excel window, one by one. These are, proceeding from left to right:

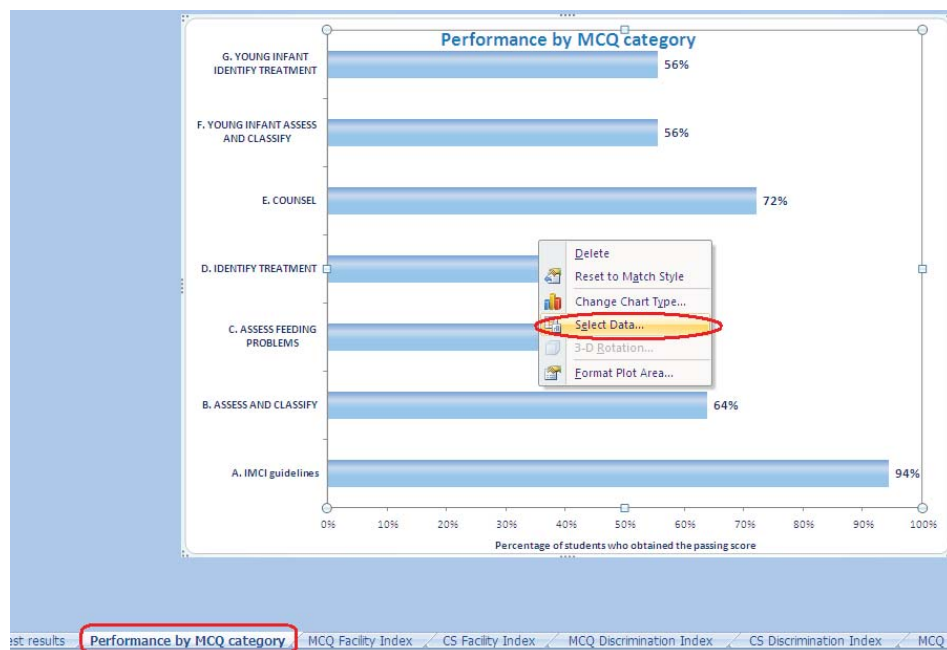
- “**Performance by MCQ category**”, with a graph showing the results of the MCQ test broken down by question categories (e.g. “IMCI guidelines”, “Assess and classify” etc.);
- “**MCQ Facility Index**”, with a graph showing the index for each MCQ;
- “**CS Facility Index**”, with a graph showing the index for each question of the Case scenarios;

- “**MCQ Discrimination Index**”, with a graph showing the index for each MCQ;
- “**CS Discrimination Index**”, with a graph showing the index for each question of the Case scenarios;
- “**MCQ Discrimination Level**”, with a pie chart showing the percentage of MCQs with a low and good discrimination index;
- “**CS Discrimination Level**”, with a pie chart showing the percentage of questions of the Case scenarios with a low and good discrimination index;
- “**MCQ\_trans**” and “**CS\_trans**”, containing the dataset.

The graphs can be modified, copied and pasted in a presentation to provide immediate feedback on the results of the student knowledge assessment<sup>5</sup>.

There may be a need to update the graphs, especially the first two graphs, namely “**Knowledge test results**” and “**Performance by MCQ category**”. To update the graphs in order to ensure that they are based on the actual dataset of the new evaluation, do as follows:

- open the graph, clicking the tab displaying the graph name (e.g. “**Performance by MCQ category**”);
- place the mouse in the middle of the graph and right click;

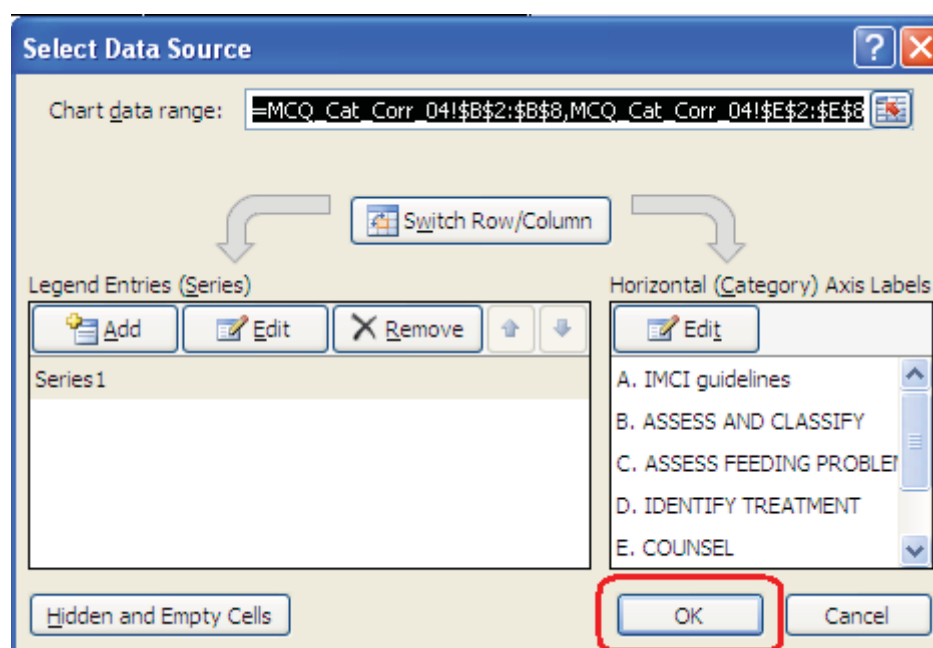


- In the new sheet which opens, i.e. “**MCQ\_Cat\_corr\_04**”, select the reference data. For example, for “**Performance by MCQ category**”, select the columns under “**Category**”—which contains the categories—and “**PrcntSdnt**”—which contains the percentage values, respectively, using the “**Ctrl**” key to select the second column, as shown below (see the cells within the rectangle with black borders in the picture):

<sup>5</sup> If the charts or axis categories are not displayed properly (e.g. “S.01” instead of “S.01.1”), ensure that the numbers of MCQs have been entered with no more than 3 digits (e.g., “A01”, “B13”) and the numbers of Case scenarios have been entered with six digits (e.g. “S.01.1”, “S.01.2”, “S.02.1”, etc.). The display can be edited at any time in the Excel file.

	A	B	C	D	E
1	CAT	Category	NoStndt	CountOfSt udent	PrcntSdnt
2	1	A. IMCI guidelines	34	36	0.944444
3	2	B. ASSESS AND CLASSIFY	23	36	0.638889
4	3	C. ASSESS FEEDING PROBLEMS	20	36	0.555556
5	4	D. IDENTIFY TREATMENT	16	36	0.444444
6	5	E. COUNSEL	26	36	0.722222
7	6	F. YOUNG INFANT ASSESS AND CLASSIFY	20	36	0.555556
8	7	G. YOUNG INFANT IDENTIFY TREATMENT	20	36	0.555556
9					

- Finally, click the **“OK”** button of the **“Select Data Source”** box:



The updated graph will be displayed on the screen automatically.

## Deleting data: student answers and test questions

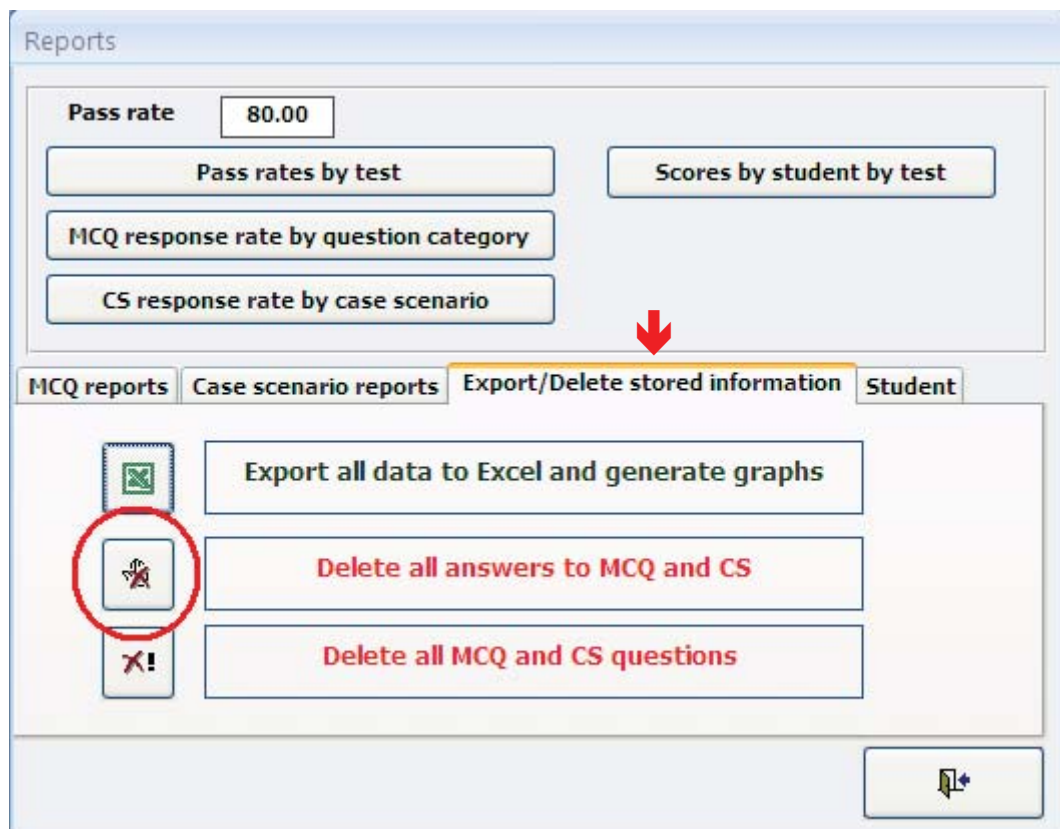
It is possible to delete all the student answers which have been entered for this assessment in order to obtain a clean file with the same MCQ and Case scenarios ready for adaptation and use for a new assessment. Before proceeding, it is strongly recommended that you save the data file (e.g. **Copy of Practice develop MCQ\_CS.mdb**) first, on an external drive (e.g. pen drive) or on a different folder, so that you do not lose your data.

### Remember:

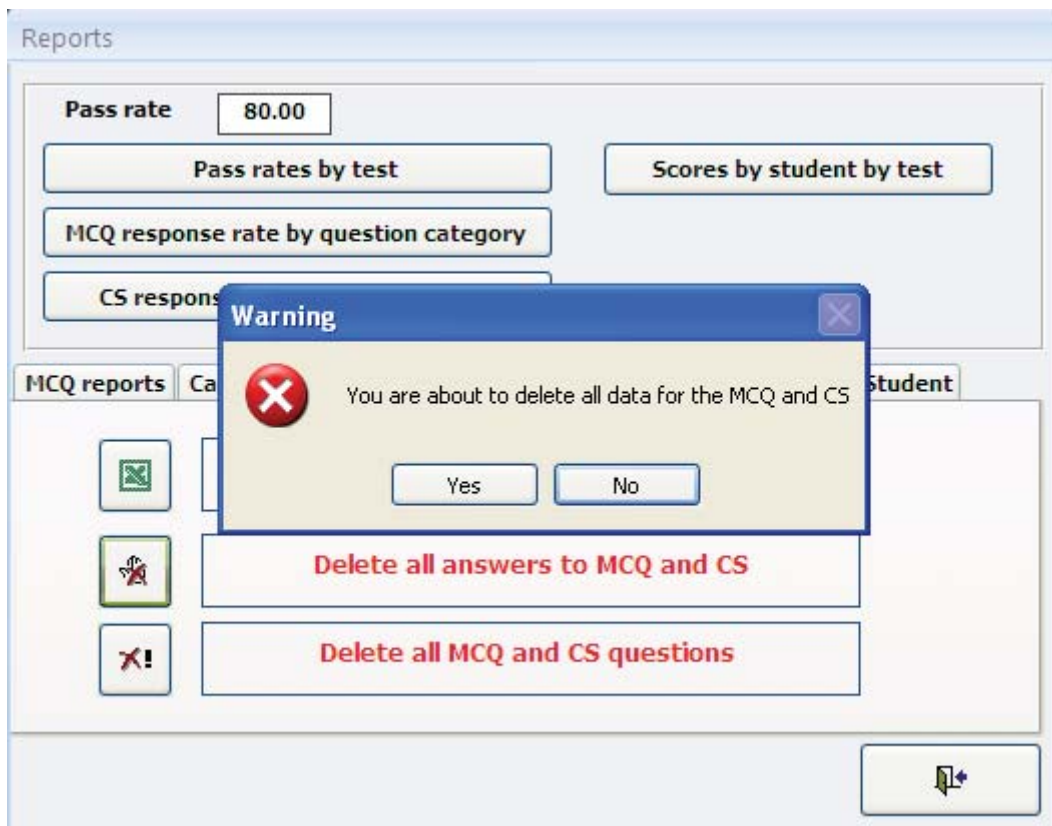
**Always back up your data: each day, save on an external drive the data you have entered!**

The tab “**Export/Delete stored information**” of the “Report” section of the menu includes the item “**Delete all answers to MCQ and CS**”. This command will delete all the data which have been entered while keeping the MCQs and Case scenarios. For this reason, it is marked in red.

- Click on the corresponding icon (circled in red in the picture below):

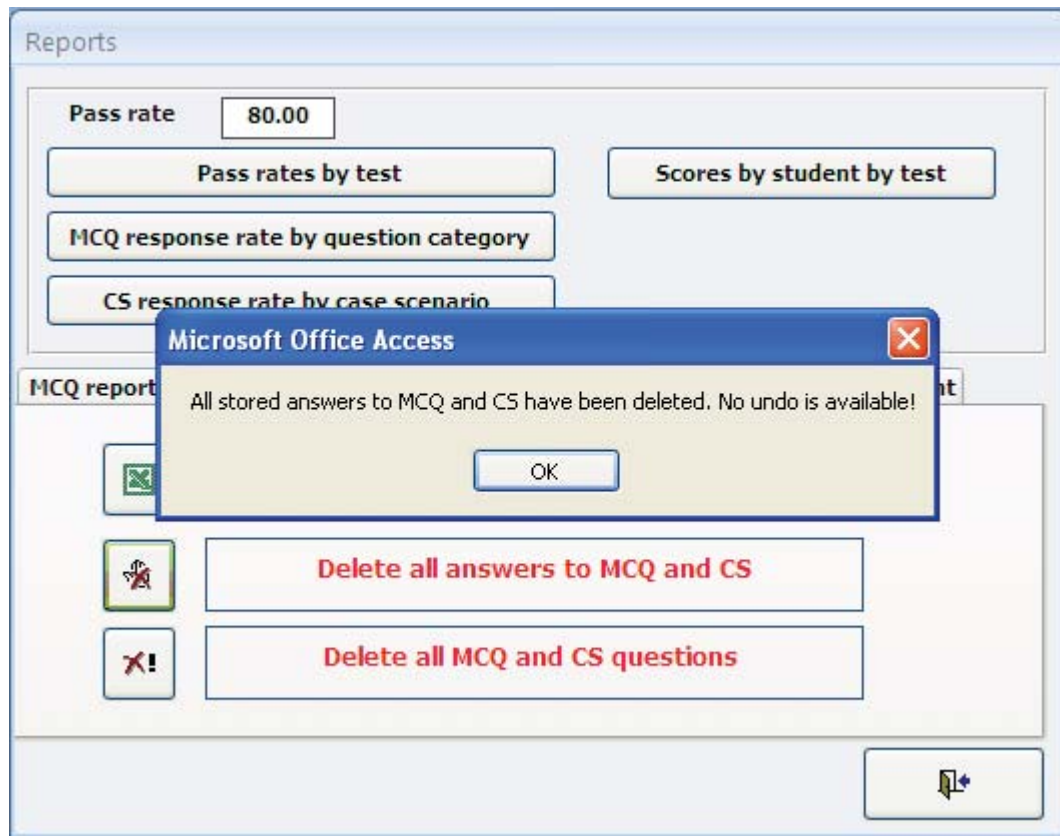


The following message is displayed, warning that all the data entered are about to be deleted and asking for confirmation. If you want to continue and delete all the data, click “Yes”; if you want to cancel and keep the data, press “No”.





If you click “Yes”, all the data will be deleted and a message will appear confirming that the data have been deleted and can no longer be restored:



- Click “OK” to return to the menu reports.

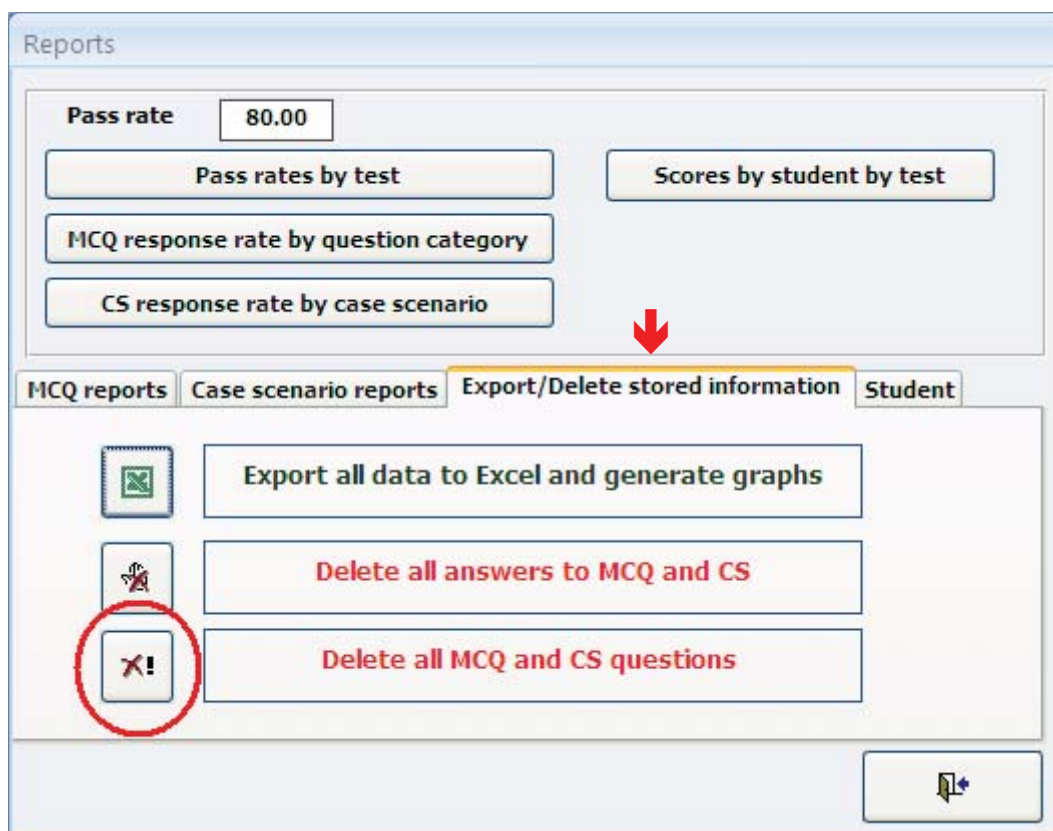
### **△ Warning!**

**Once you click to delete all answers, the data are deleted and it is not possible to restore them. Always make at least one backup copy of the original file after you have entered all the data, before the analysis, and store it in a different folder with another name to be safe.**

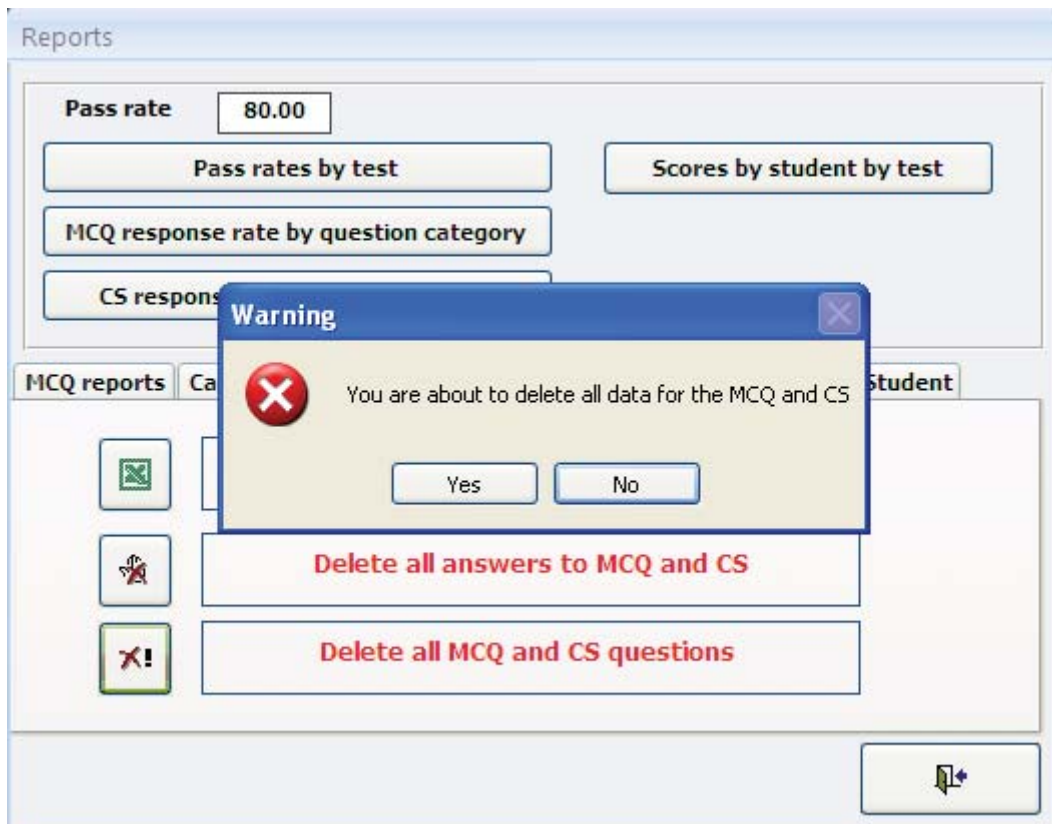
After deleting the data (student answers), it is possible to delete also the text of all the MCQs and Case scenarios, in order to obtain a clean file in which to enter new MCQs and Case scenarios for a new test. The new Access file will keep the original format and formulas to generate reports once data have been entered. Before proceeding, it is strongly recommended that you save the file first, as the action is irreversible.

The tab “**Export/Delete stored information**” of the “Report” section of the menu includes the item “**Delete all MCQs and CS questions**”. This command will delete all the test items.

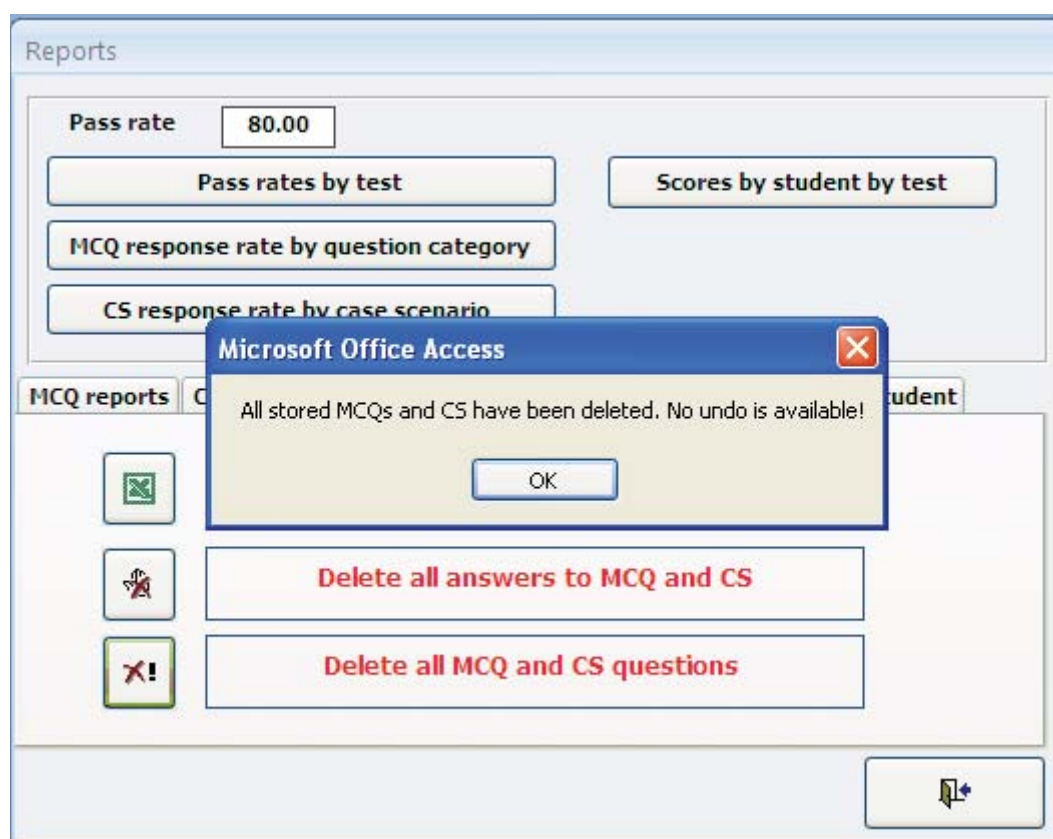
- Click on the corresponding icon (circled in red in the picture below):



The following message is displayed, warning that the text of all the test items (questions and options) of MCQs and Case scenarios is about to be deleted and asking for confirmation. If you want to continue and delete it, click “Yes”; if you want to cancel and keep it, press “No”.



The following message is displayed, confirming that all the data have been deleted and can not be restored:



---

### **⚠ Warning!**

Once you click to delete all questions, the data are deleted and it is not possible to restore them. Always make at least one backup copy of the original file after you have entered the data, before the analysis, and store it in a different folder with another name to be safe.

---

- Click "OK" to return to the menu reports.

- Click on the door ajar icon to exit the report menu:

The screenshot shows a 'Reports' window with a 'Pass rate' of 80.00. It contains several report options: 'Pass rates by test', 'Scores by student by test', 'MCQ response rate by question category', and 'CS response rate by case scenario'. Below these are tabs for 'MCQ reports', 'Case scenario reports', 'Export/Delete stored information' (which is highlighted), and 'Student'. Under the 'Export/Delete stored information' tab, there are three options: 'Export all data to Excel and generate graphs' (with a green checkmark icon), 'Delete all answers to MCQ and CS' (with a red hand icon), and 'Delete all MCQ and CS questions' (with a red X icon). A red circle highlights a door ajar icon in the bottom right corner of the menu.

## Adding and deleting student records

The fourth and last tab of the report menu (“**Student**”) enables two more actions:

- “**Add more students to the student list**”, if your assessment includes a number of students greater than 60, which is the number pre-listed in the original Access file;
- “**Delete all MCQ and CS data entered for a student**”, if you have entered data for the wrong student by mistake (e.g. if you entered data for student 51 instead of student 41).

The screenshot shows the 'Reports' window with a 'Pass rate' of 80.00. Below this are several report buttons: 'Pass rates by test', 'Scores by student by test', 'MCQ response rate by question category', and 'CS response rate by case scenario'. A red arrow points down to the 'Student' tab, which is highlighted in yellow. The 'Student' tab contains two main sections, both enclosed in a red box:

- The first section has a button labeled 'Add more students to the student list' and an 'Add' button.
- The second section has a button labeled 'Delete all MCQ and CS data entered for a student' in red text. Below this is a dropdown menu labeled 'Choose student to be deleted' and a 'Delete' button.

At the bottom right of the window is a refresh button.

To add more students:

- Click on “Add”:

The screenshot shows a software interface titled "Reports". At the top, there is a "Pass rate" field with the value "80.00". Below this are four buttons: "Pass rates by test", "Scores by student by test", "MCQ response rate by question category", and "CS response rate by case scenario". A tabbed interface below has four tabs: "MCQ reports", "Case scenario reports", "Export/Delete stored information", and "Student". The "Student" tab is active and highlighted in yellow. Inside the "Student" tab, there are two main sections. The first section contains two buttons: "Add more students to the student list" and "Add". The "Add" button is circled in red. The second section contains a red heading "Delete all MCQ and CS data entered for a student", a dropdown menu labeled "Choose student to be deleted", and a "Delete" button. At the bottom right of the interface is a button with a refresh icon.

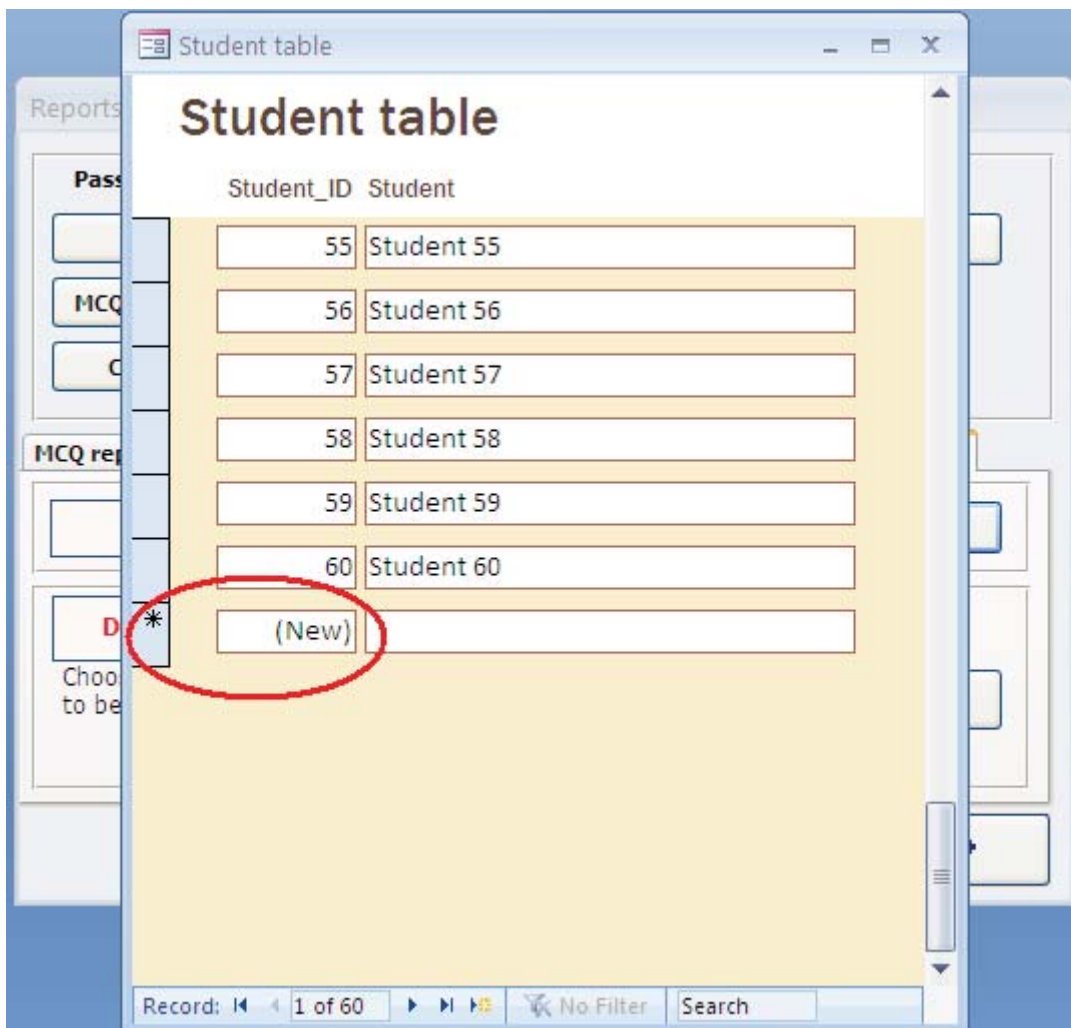


The following window appears:

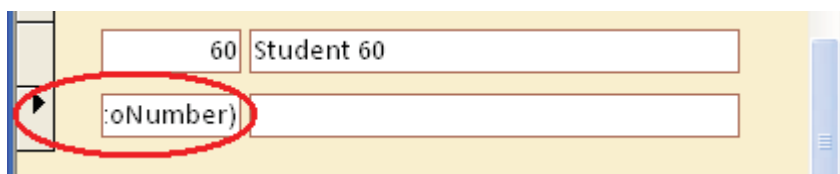
Student_ID	Student
1	Student 01
2	Student 02
3	Student 03
4	Student 04
5	Student 05
6	Student 06
7	Student 07
8	Student 08
9	Student 09
10	Student 10
11	Student 11
12	Student 12

Record: 1 of 60 | No Filter | Search

- Scroll it down to the row marked with an asterisk.
  - In Access 2007, “(New)” appears in the first column, the “Student\_ID” column, while the next column (the “Student” column) is empty:



- In Access 2003, “(AutoNumber)” is shown instead of “(New)”:



- Manually enter “**Student 61**” in the last column, the “**Student**” column. You will see that the number “61” automatically replaces “(New)” and a new row marked with an asterisk appears below “61”:

The screenshot shows a window titled "Student table" with a table containing the following data:

Student_ID	Student
51	Student 51
52	Student 52
53	Student 53
54	Student 54
55	Student 55
56	Student 56
57	Student 57
58	Student 58
59	Student 59
60	Student 60
61	Student 61
	(New)

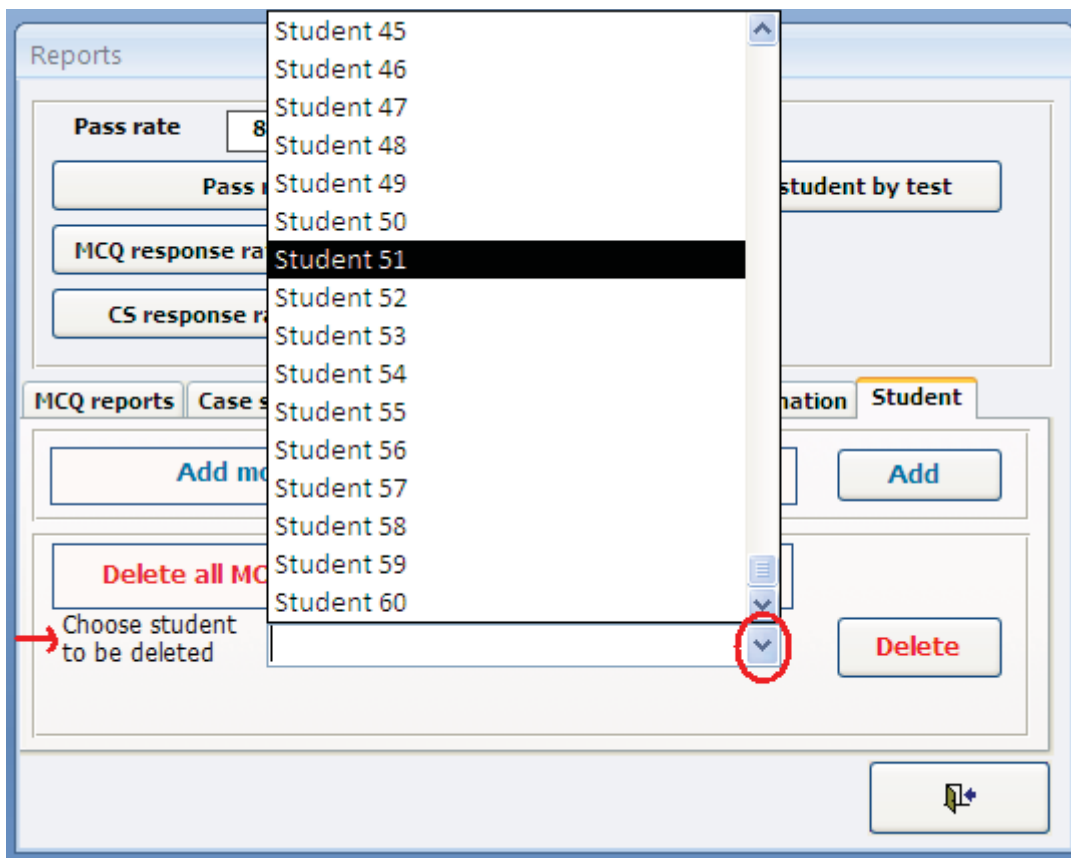
The status bar at the bottom indicates "Record: 61 of 61" and "No Filter".

- Repeat the procedures for the number of students to be added. Then, close the window to return to the report menu:

The screenshot shows the same window, but only the first two rows are visible: Student 51 and Student 52. The close button (X) in the window title bar is circled in red.

If you want to delete a student record in which you entered data by mistake, proceed as follows:

- Below **“Delete all MCQ and CS data entered for a student”**, click on the drop down list of **“Choose student to be deleted”** to select the student number whose record should be deleted:



- Next, click on **“Delete”**:

The screenshot shows the 'Reports' window with a 'Pass rate' of 80.00. Below this are buttons for 'Pass rates by test', 'Scores by student by test', 'MCQ response rate by question category', and 'CS response rate by case scenario'. A tabbed interface at the bottom includes 'MCQ reports', 'Case scenario reports', 'Export/Delete stored information', and 'Student'. The 'Student' tab is active, showing a button 'Add more students to the student list' and an 'Add' button. Below that, a red heading reads 'Delete all MCQ and CS data entered for a student'. A dropdown menu labeled 'Choose student to be deleted' is set to 'Student 51'. A red circle highlights the 'Delete' button. A small icon with a plus sign is visible at the bottom right.

- The following warning message appears; click **“Yes”** to permanently delete the record:

This screenshot is identical to the previous one, but with a 'Warning' dialog box overlaid in the center. The dialog box has a red 'X' icon and the text: 'Warning: You are about to delete all data for the selected student'. It contains two buttons: 'Yes' and 'No'. The background interface remains visible but slightly dimmed.

- Click on the door ajar to exit the report menu:

Reports

Pass rate

MCQ reports | Case scenario reports | Export/Delete stored information | **Student**

**Delete all MCQ and CS data entered for a student**

Choose student to be deleted

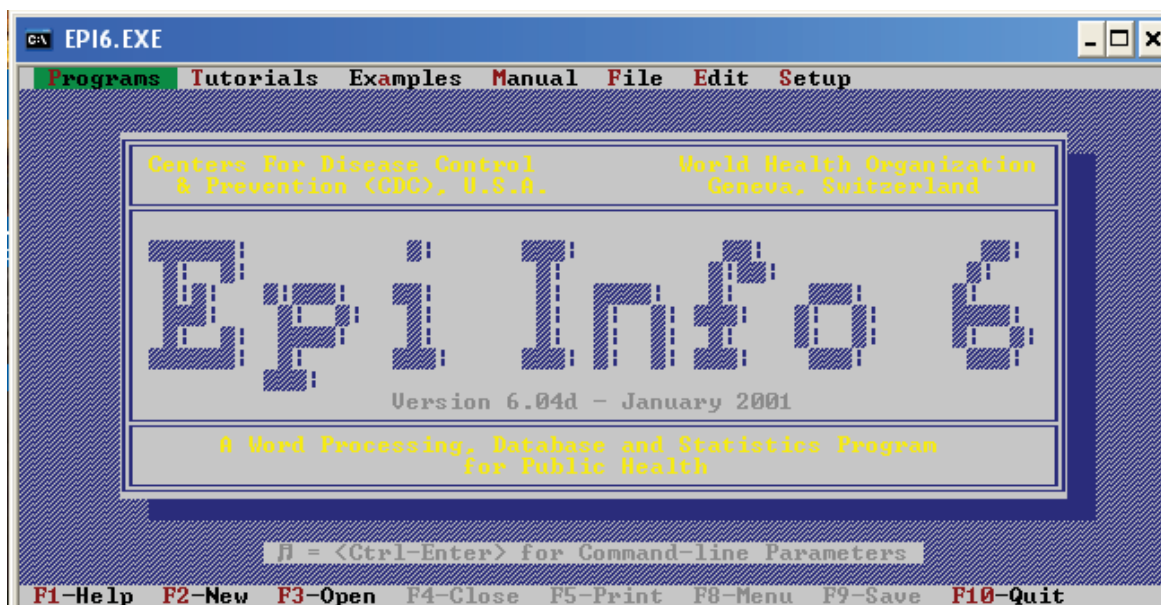


## Skill test

### Epi Info™ 6

Epi Info™ 6 (for DOS) has been used in the first evaluations of IMCI pre-service education to enter and analyse data on student skill assessment. Epi Info™ 6 (version 6.04d) is the last DOS version of a word processing, database and statistics program for epidemiology on microcomputers developed by the Centers for Disease Control and Prevention, Atlanta, Georgia, U.S.A., in collaboration with the World Health Organization (WHO), Geneva, Switzerland. Despite being a relatively old DOS version, the rationale for the choice of this software includes a number of advantages:

- no copyright: the program may be freely copied and distributed;
- wide distribution and use in many countries in the world for different public health programs;
- fast installation and very minimum hardware requirements;
- rapid development of data entry forms and setup of data files and many data management and analysis features;
- double entry verification;
- very small size of files;
- possibility of exporting files to other programs for further analysis.



Data files can be imported (“read”) for analysis also in the Epi Info™ version for Windows, which is another program that can be freely downloaded and distributed.



For more information on Epi Info™ 6 (for DOS) consult the CDC web site at:

<http://www.cdc.gov/epiinfo/epi6/ei6.htm> (accessed on 10 May 2010):

CDC Home Search Health Topics A-Z

Home | Capacity Building | Data Systems | Public Health Surveillance | Contact Us

## Epi Info™ 6

**Epi Info™ 6**  
for DOS  
Current Version 6.04d

**Epi Map 2**  
for DOS  
Current Version 2.01a

- Downloads
- How to Install
- Online Manual
- FAQs
- Do Epi Tutorials
- Translations

Epi Info™ 6 is a series of microcomputer programs for handling

For more information on Epi Info™ (for Windows) consult the CDC web site at:

<http://www.cdc.gov/epiinfo/> (accessed on 10 May 2010):

CDC Home Search Health Topics A-Z

DISSS Home | Contact Us

## What Is Epi Info™?

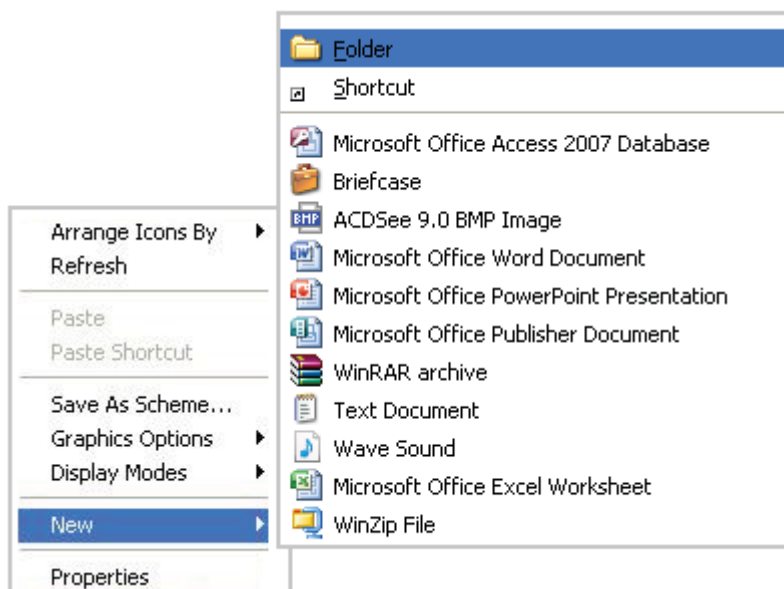
[Download](#)

Latest Version: Epi Info™ Version 3.5.1  
Release Date: August 18, 2008

## Installing Epi Info™ 6 on your computer

To install Epi Info™ 6 (**Epi6** in short) on your computer, follow these steps:

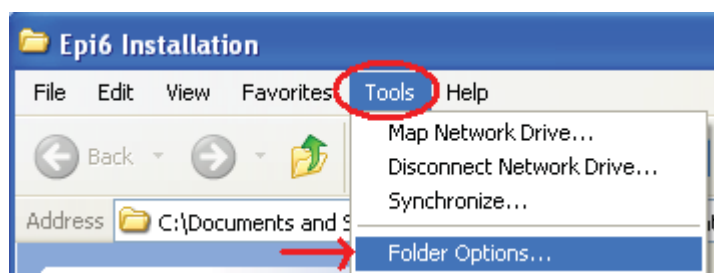
- Right click with your mouse on an empty space of the desktop, select “**New**” and then “**Folder**” to create on your C: drive a new folder:



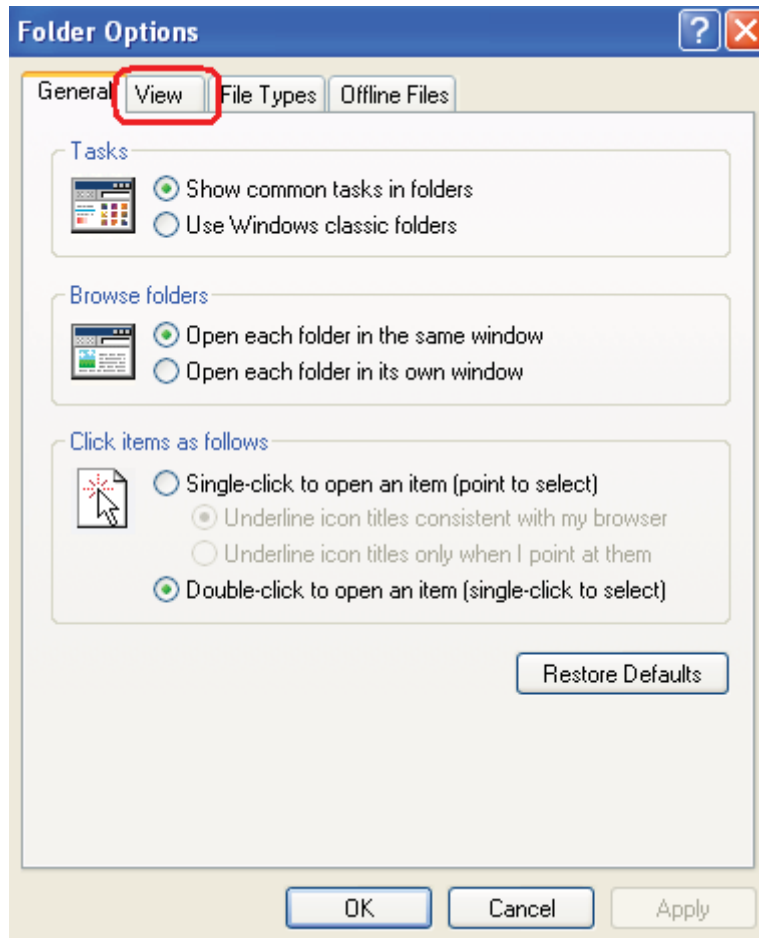
- Type the name of this new folder: “**Epi6 installation**”:



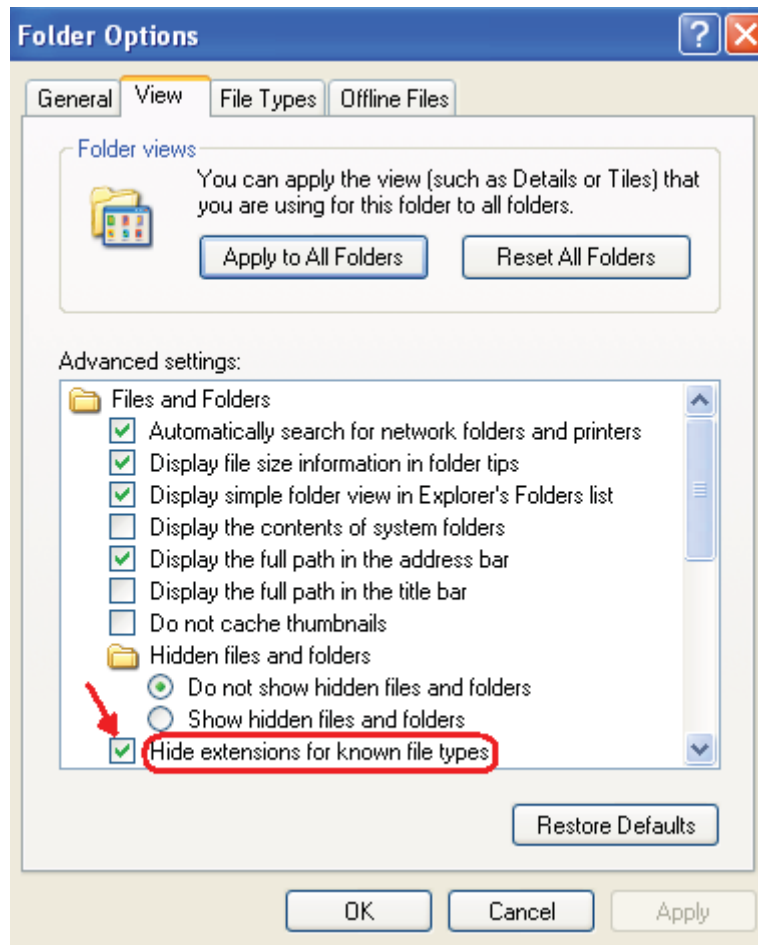
- Double click on the icon of this new folder;
- When the folder opens, on the top menu click on “**Tools**” and select “**Folder Options...**”:



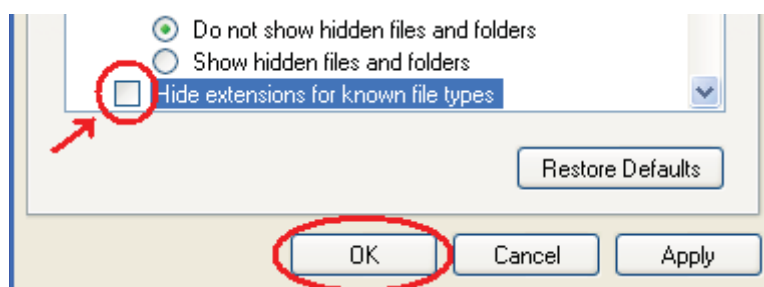
- In the “Folder option” window, click on the tab “**View**”:



- Next, uncheck the box of the item “**Hide extensions for known file types**” if it is checked by clicking on it once:



It should then look like this:



- Click the “**OK**” button and then close this window clicking on the close icon on the top right:

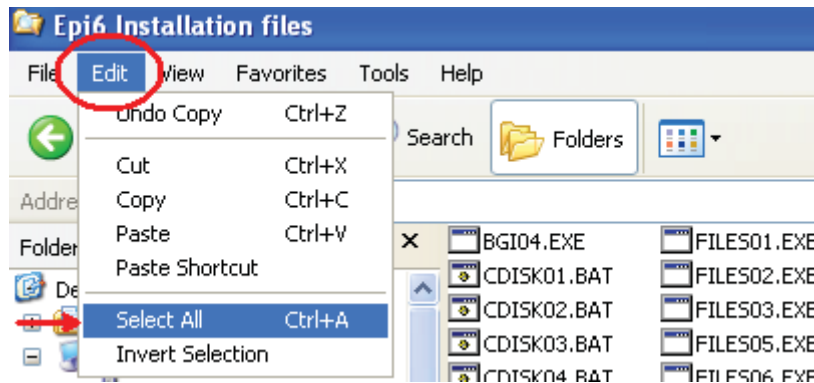


- Insert the CD-ROM enclosed in this guide into your CD-drive;

- Open the folder “**Epi6 Installation files**” on the CD-ROM:

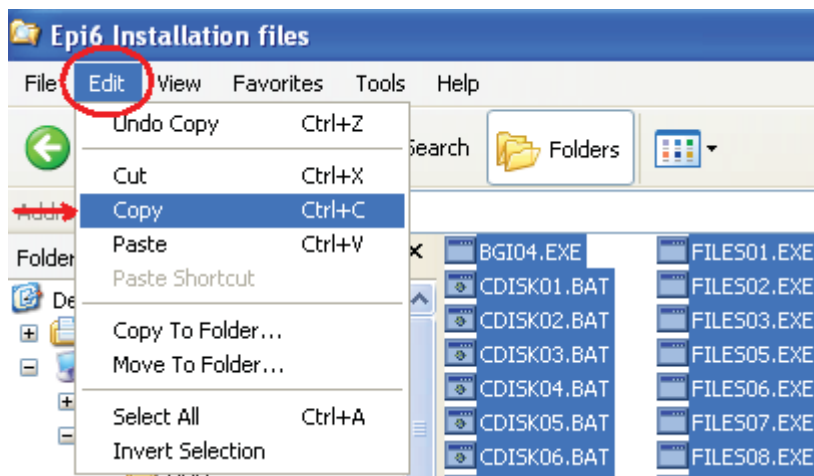


- On the top menu, click on “**Edit**” and then “**Select All**”, to select all the files contained in that folder:



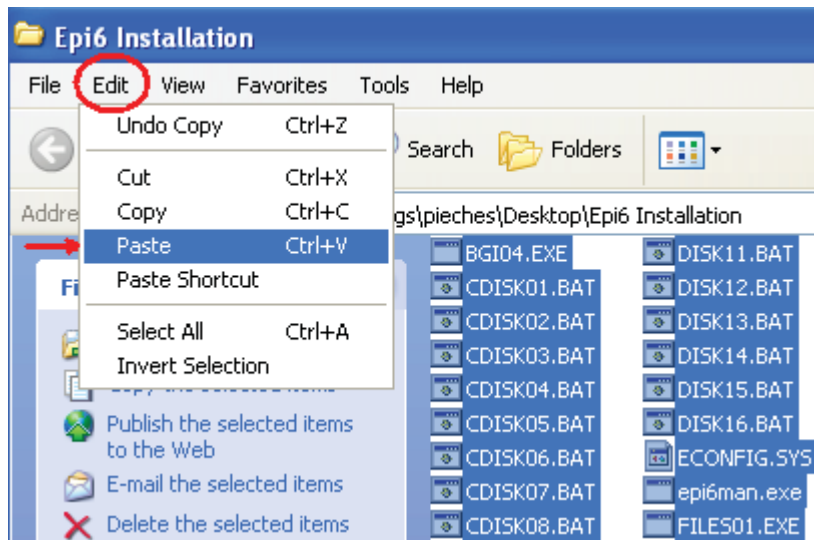
You will see that all the files have been highlighted.

- Next, on the top menu, click again on “**Edit**” and then “**Copy**”, to be able to copy all these files:



- Open the folder “**Epi6 installation**” that you have just created on the desktop of your computer;

- Click on the top menu on “**Edit**” and then “**Paste**”: all the files for the installation will be copied into this folder:

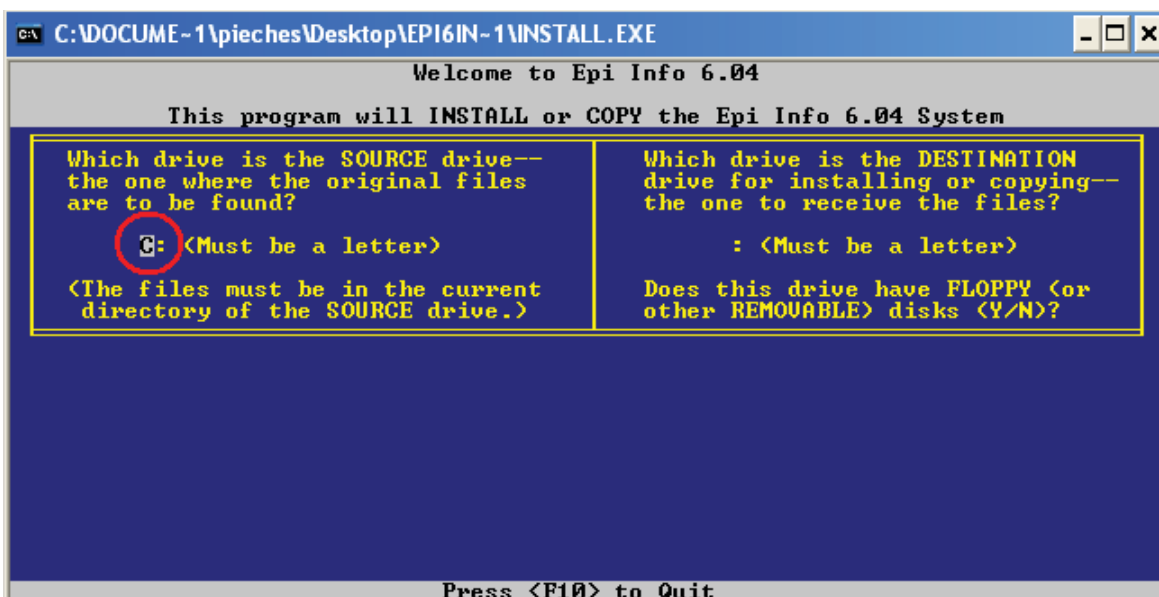


- In the same folder “**Epi6 installation**” where you have just copied all the files, double click on the file “**INSTALL.EXE**”:

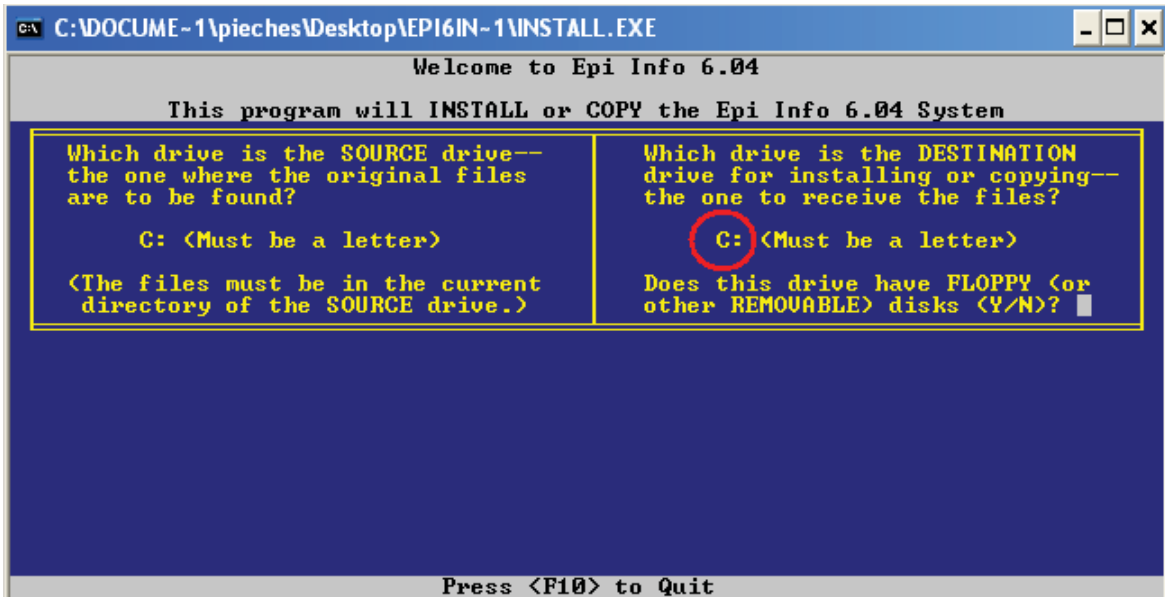
FILES15.EXE	274 KB	Application	30/01/2001 05:04
FILES16.EXE	215 KB	Application	30/01/2001 05:04
GROUPS.DAT	1 KB	DAT File	30/01/2001 05:04
<b>INSTALL.EXE</b>	77 KB	Application	30/01/2001 05:04
PRINTER.DAT	1 KB	DAT File	30/01/2001 05:04
README.604	70 KB	604 File	30/01/2001 05:04
readme_604.txt	70 KB	Text Document	05/02/2004 14:22

Follow the installation instructions as they appear on the screen.

- First, type on your keyboard the letter “**C**” as the source drive:

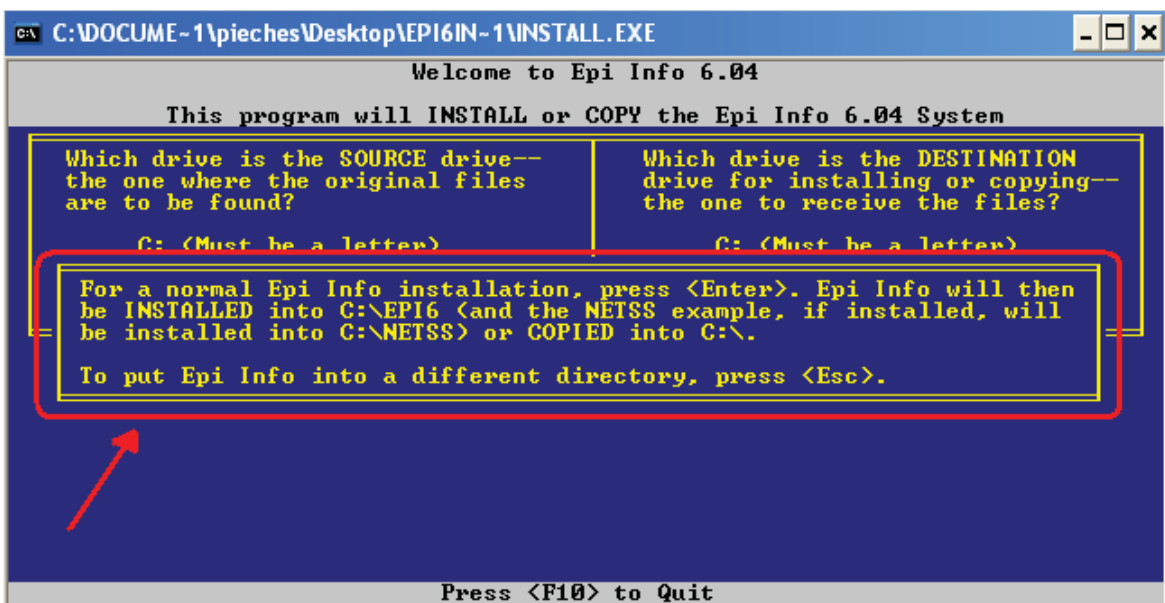


- The cursor moves to the right. Type again the letter “C” as the destination drive:



- The cursor moves to the next field in this window: type “N” [(No FLOPPY (or other REMOVABLE) disks)];

A new smaller window appears inside:

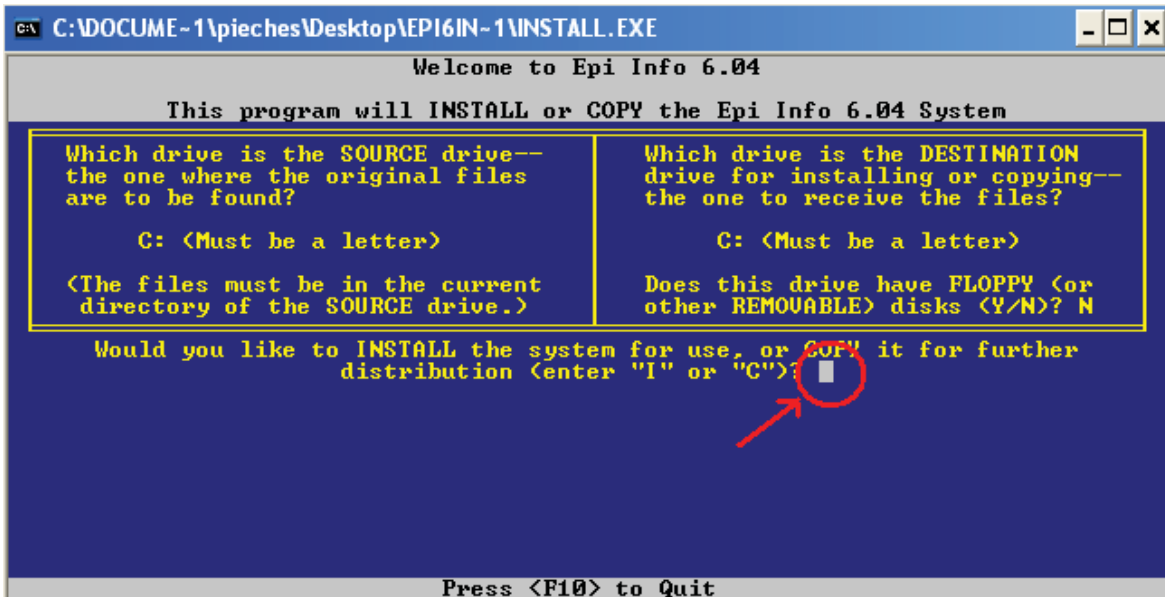


- Press “Enter” to install Epi6. The commands which follow will install Epi6 into the folder “C:\EPI6”.

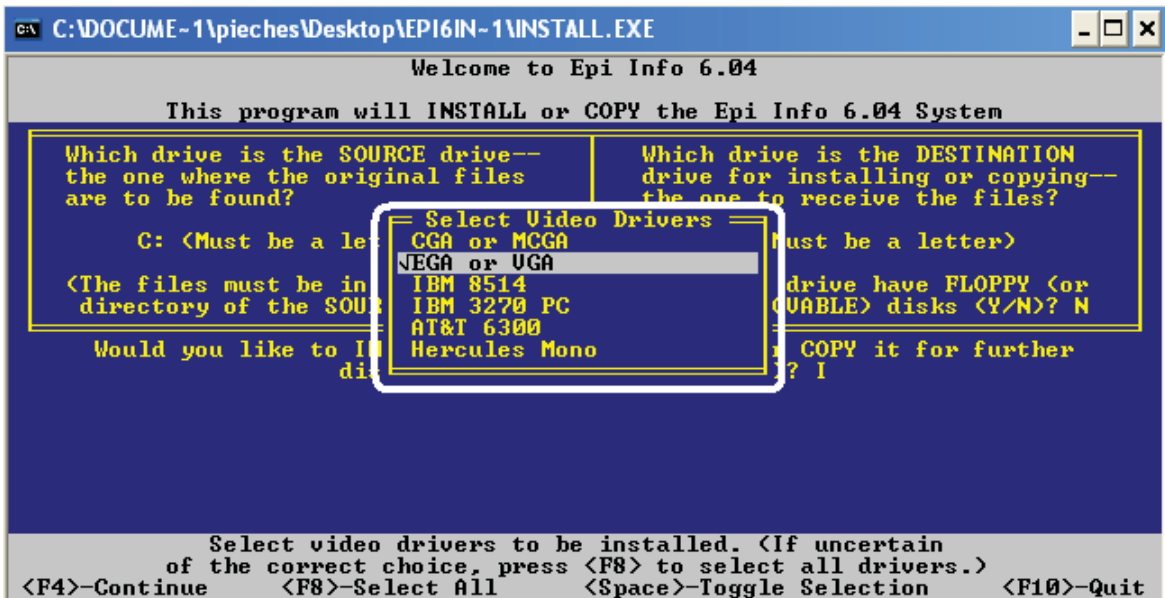


The next command will then ask you to confirm whether you want to install or copy Epi6:

- Type "I" with the keyboard to confirm that you want to install it:

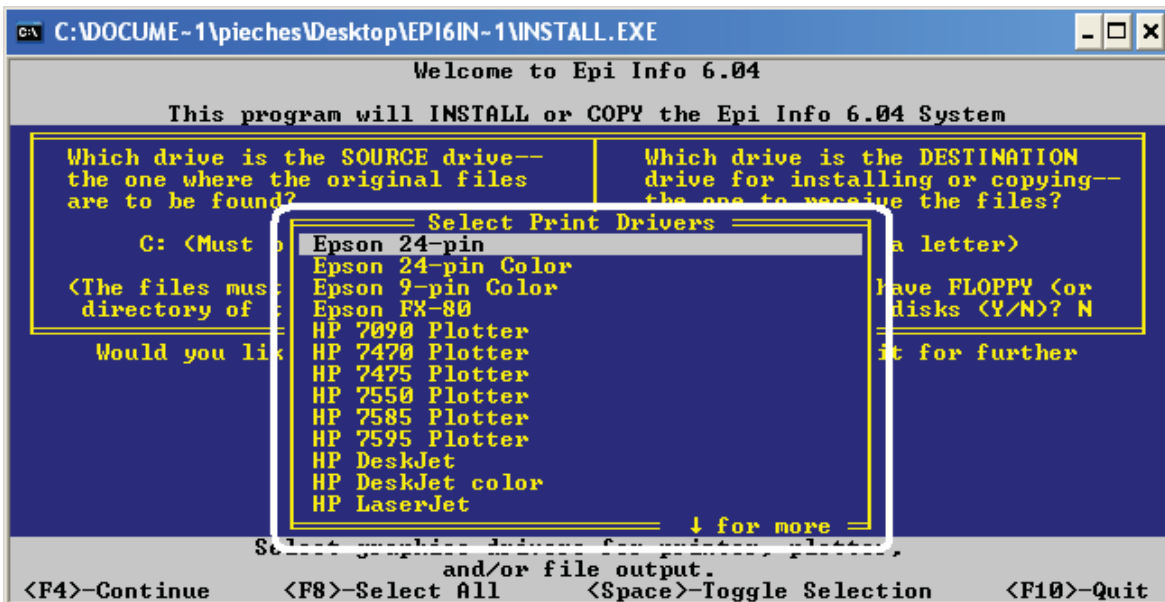


The following screen appears, with a list of video drivers:



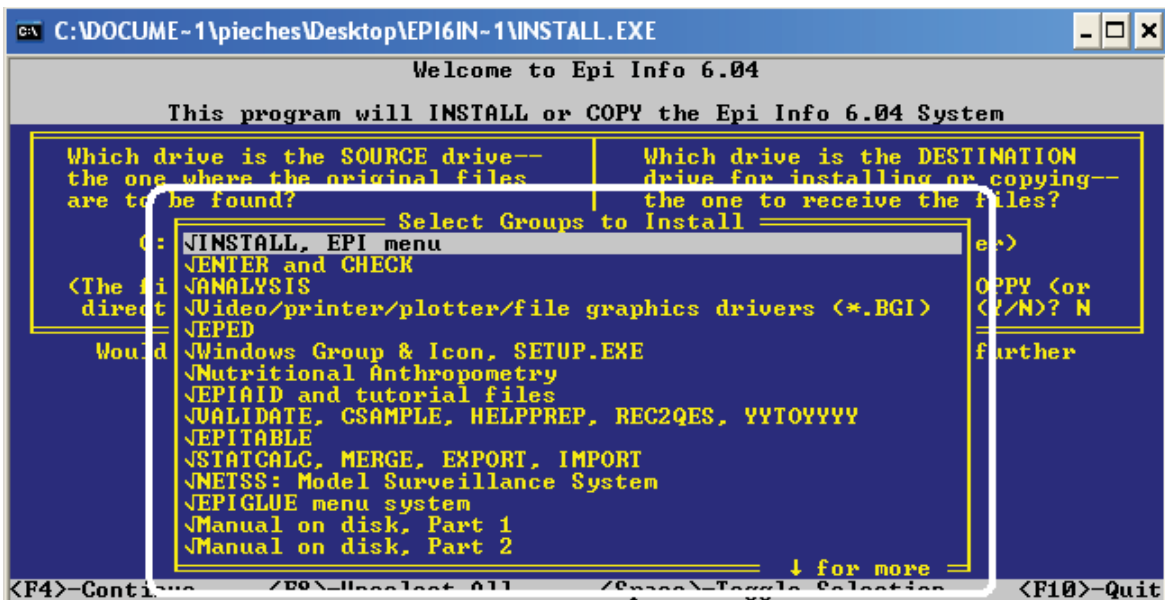
- On the keyboard, press the key “F8” to select all video drivers.
- Next, press the key “F4” to continue.

The next screen appears, with a list of printer drivers:



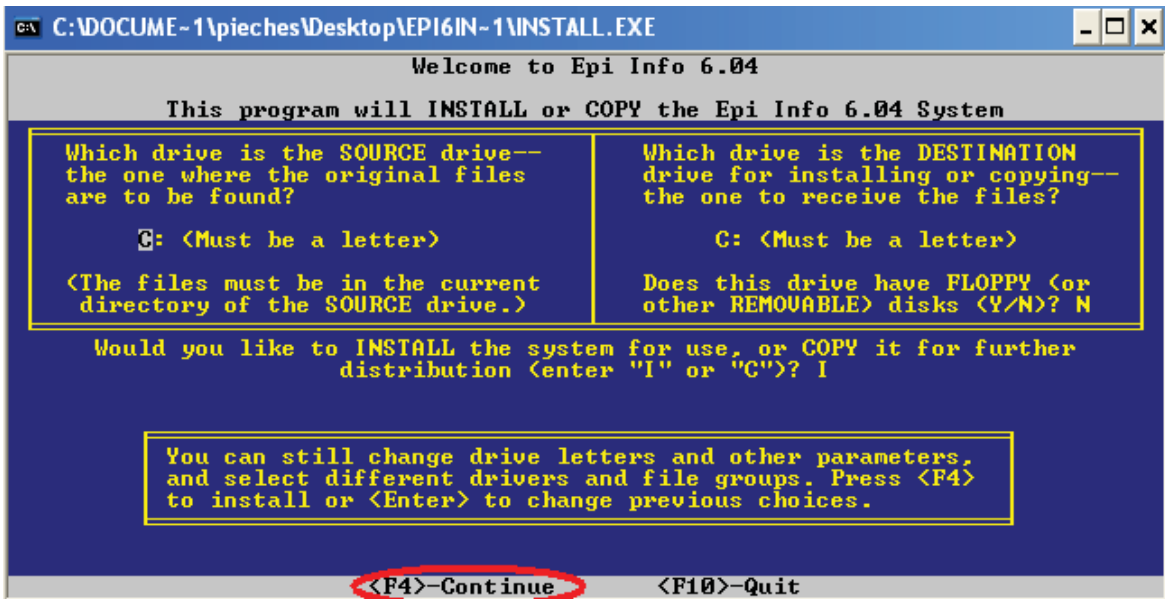
- Press the key “F8” to select all printer drivers.

The program is ready to install Epi6:



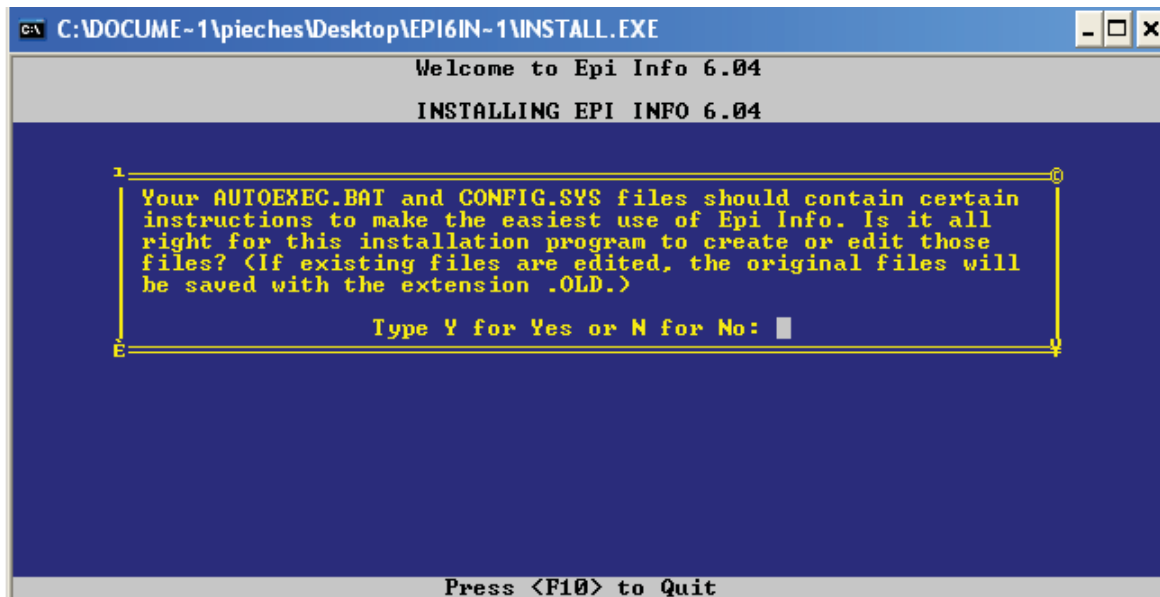
- Press “F4” two times to continue.

- Press “F4” again to confirm that you want to install Epi6 into drive “C”:



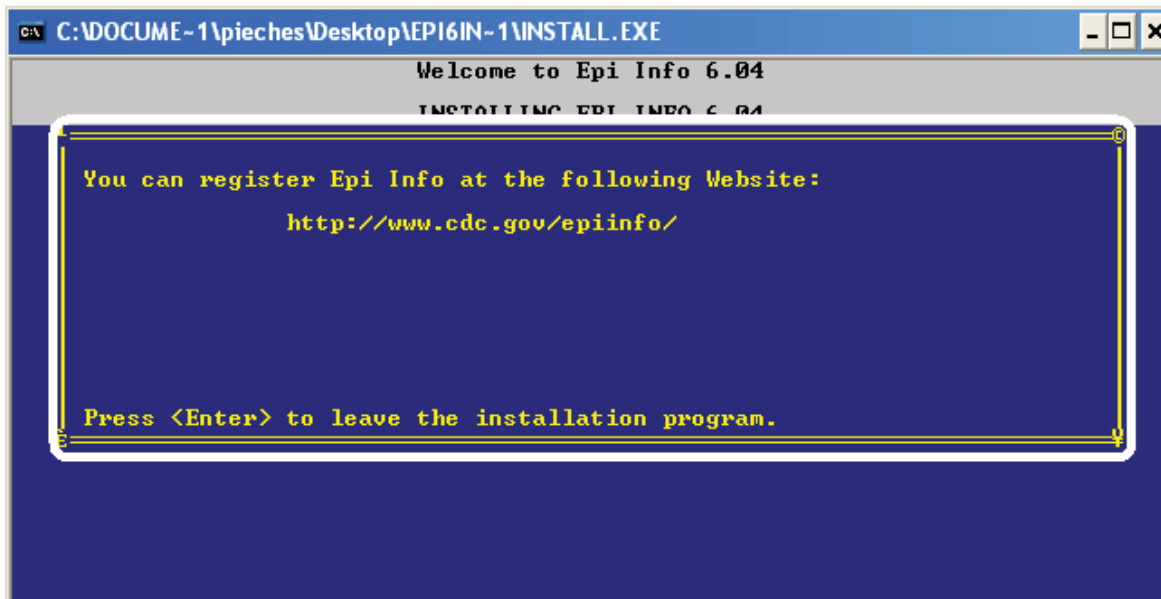
The installation program will start running and automatically install Epi6. This process is fast.

When it is completed, a “Welcome to Epi Info 6.04” screen is displayed:



- Type “Y” on your keyboard to complete the installation, to change **autoexec.bat** and **config.sys**. This usually does not affect the performance of other programs.

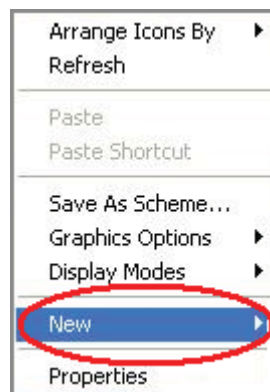
A new screen appears:



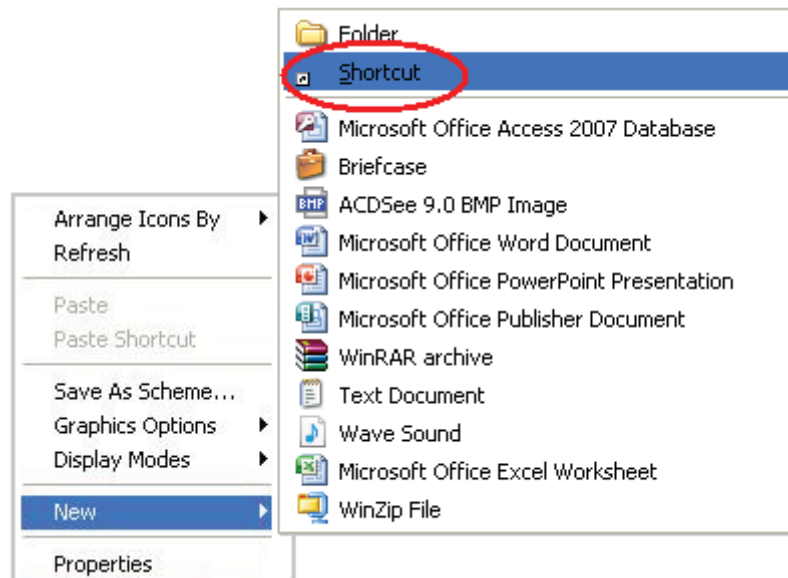
- Press “Enter” to leave the installation program. The screen automatically closes.

The installation is complete. You now need to create a short-cut of **Epi6** to the desktop (**EPI6.exe**) so that you can launch it also from there. Do as follows:

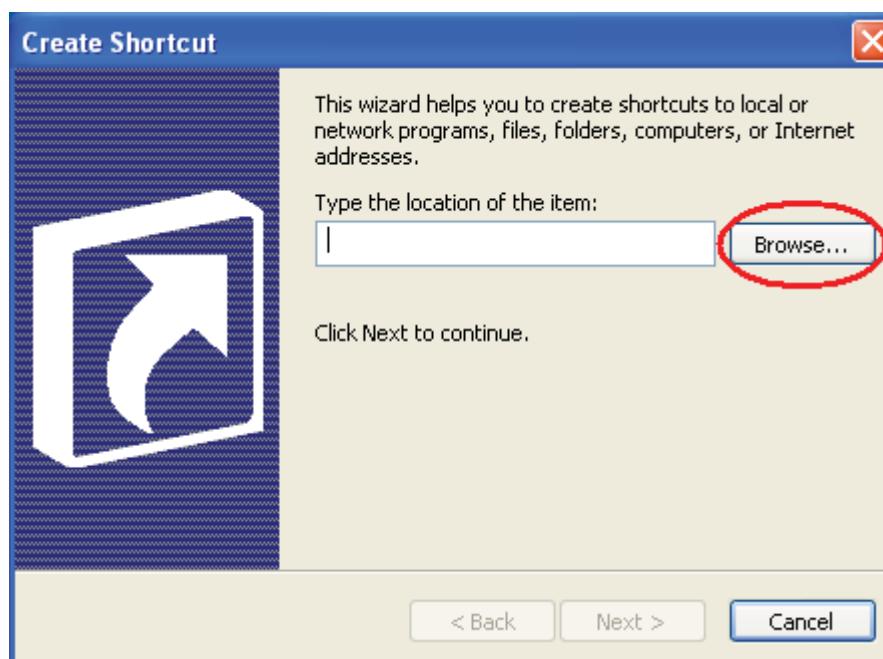
- right click with your mouse on any empty part of the desktop;
- select “New” in the window which opens:



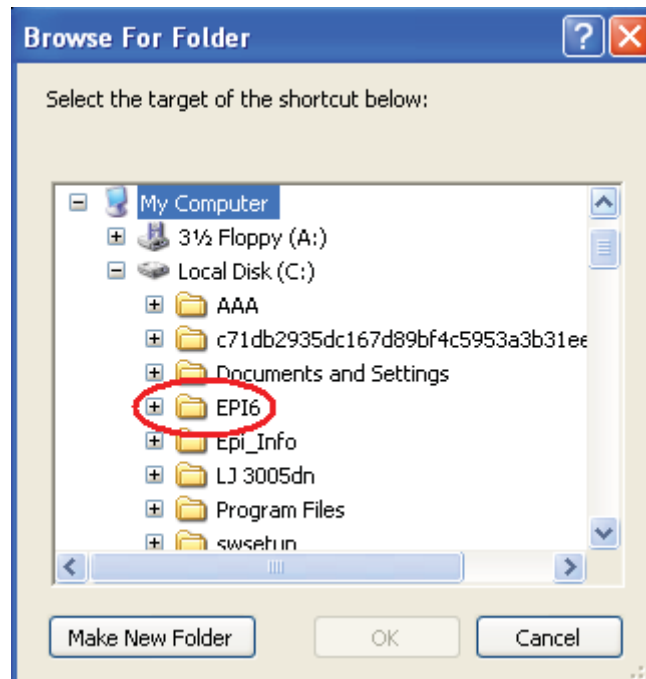
- o select **“Shortcut”**:



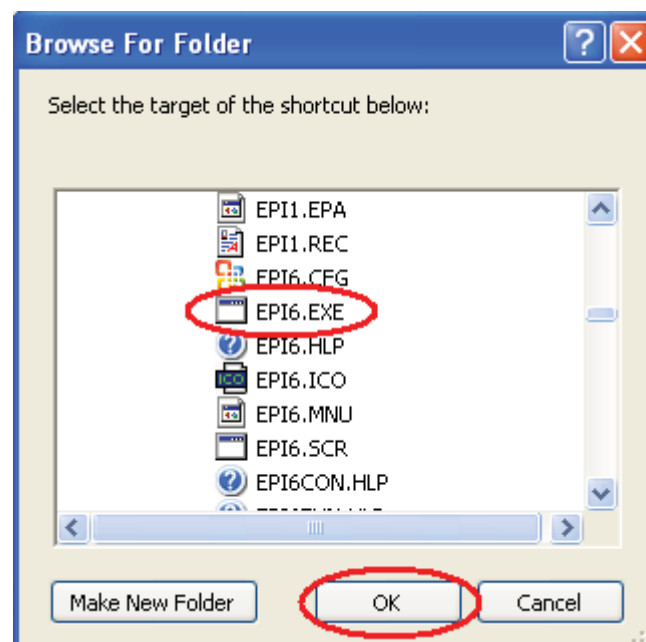
- o in the new window **“Create shortcut”**, click on **“Browse”** (circled in red in the picture below):



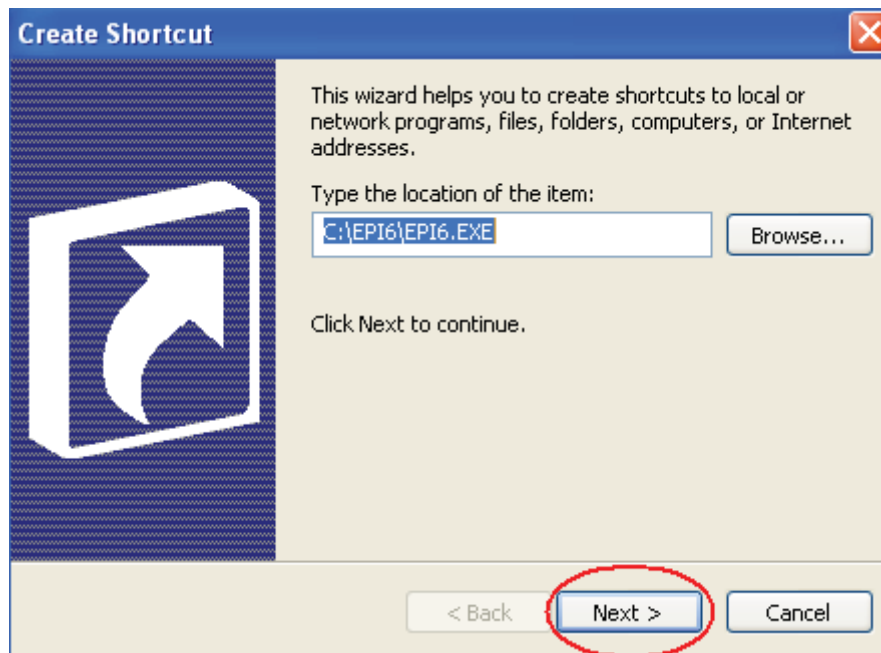
- o in the new window “Browse For Folder”, click on “My Computer”, then click on “Local Disk (C:)” and finally click on “EPI6” (in this folder, files are listed in alphabetical order):



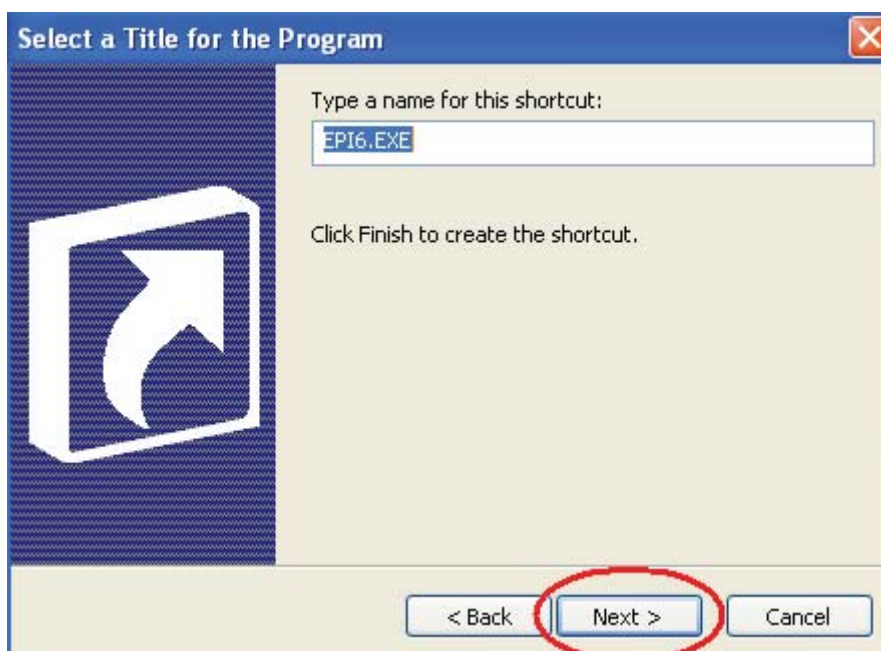
- o scroll down to look for the “EPI6.EXE” file as shown below, select it and click “OK”:



- o then, click on “**Next**” to select a title for the shortcut to the program:

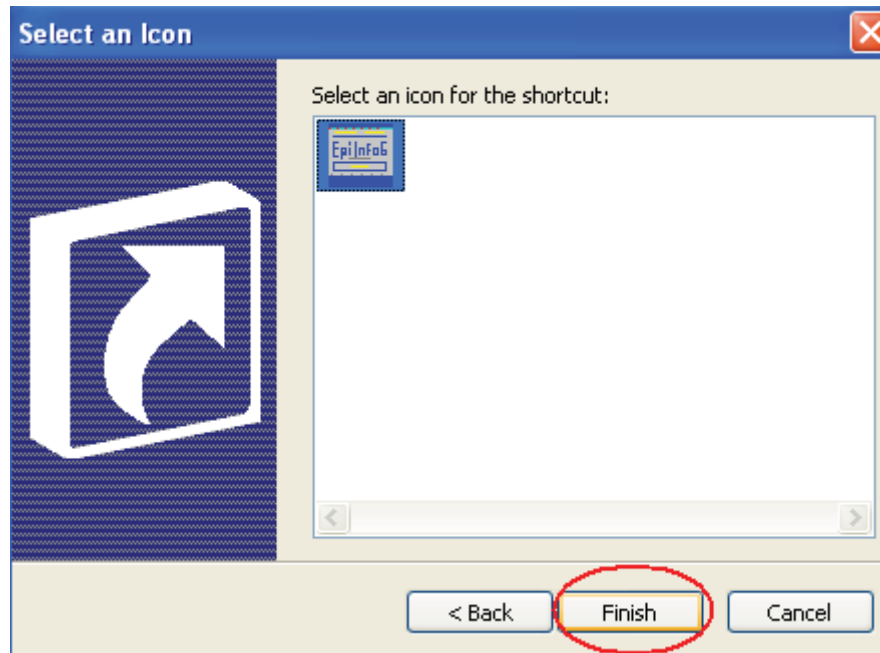


- o Click on “**Next**” again to finish to create the shortcut on the desktop:





- o click on “**Finish**” to associate the **EPI6** icon with the shortcut:



Congratulations! The shortcut has been created and it is now displayed on your desktop!



---

#### Summary steps to install Epi6:

1. Create folder “**Epi6 installation**” on your computer C: drive;
2. Copy all Epi6 installation files from the CD-ROM to this folder that you have just created;
3. In the “**Epi6 installation**” folder on your computer, click on the file “**INSTALL.EXE**”;
4. When installation is complete, create a short-cut to **EPI6.EXE** on your desktop.

## Copying data entry and analysis files to your computer

The following steps guide you in copying the Epi6 files which are required for data entry and analysis to your computer.

In the C: drive, you will first create a folder called “**AAA**”. Proceed as follows.

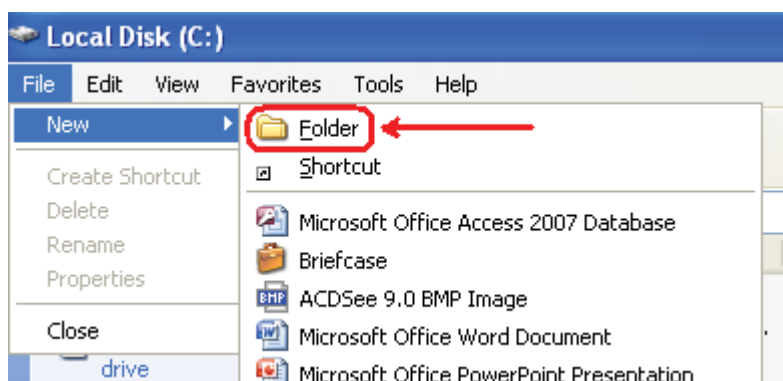
- Double click on the “**My computer**” icon on your desktop:



- In the next window, double click on “**Local Disk (C:)**”, which is listed under “**Hard Disk Drives**” :



- On the top menu, click on “**File**”, then on “**New**” and select the item “**Folder**”:



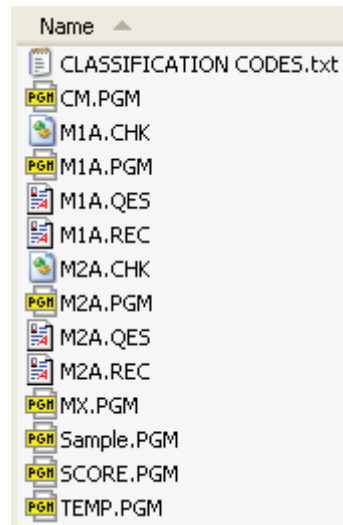
- The “**New Folder**” icon appears, waiting for you to type the name for this new folder:



- Type “**AAA**” as the folder name and press “**Enter**”:

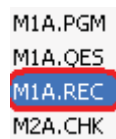


- Copy all the files placed in the folder “**AAA**” of the CD-ROM onto the folder “**AAA**” that you have just created under the **C:** drive of your computer (to copy and paste files see page 103.)



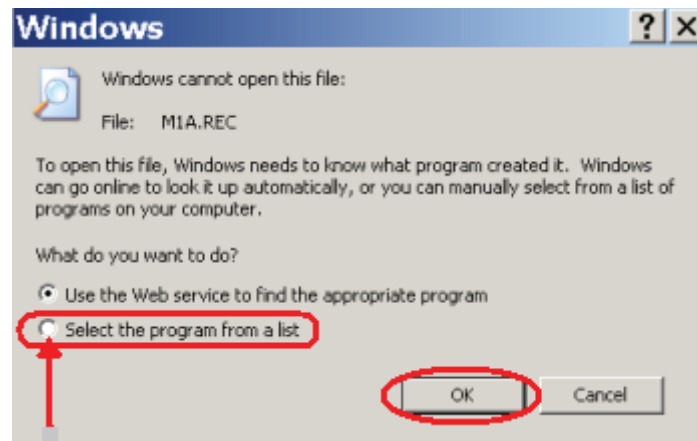
The next step is needed for your computer to recognize Epi6 files automatically as such, that is to associate Epi6 data files (\*.REC) to Epi6 ANALYSIS:

- Among the files in the folder “**AAA**”, select file “**M1A.REC**” and double click on it:

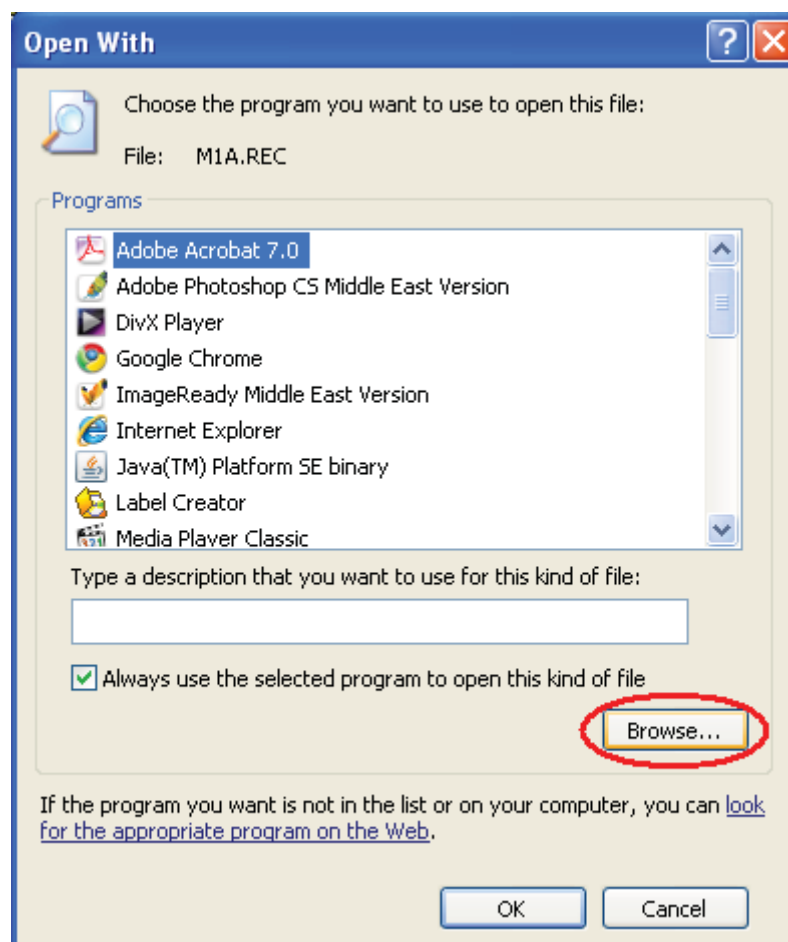


A new window is displayed, indicating that Windows cannot open the file, as it does not know yet which program to use to open it.

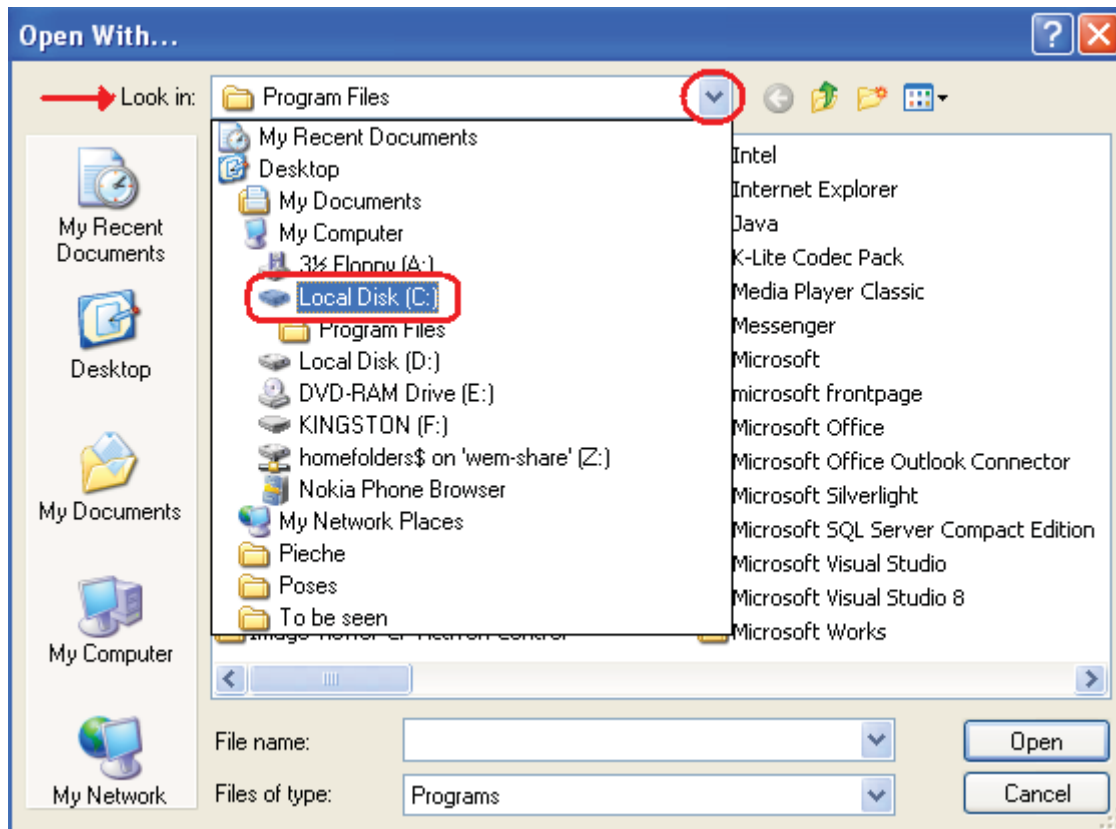
- Click the option **“Select the program from a list”** and then click on **“OK”**:



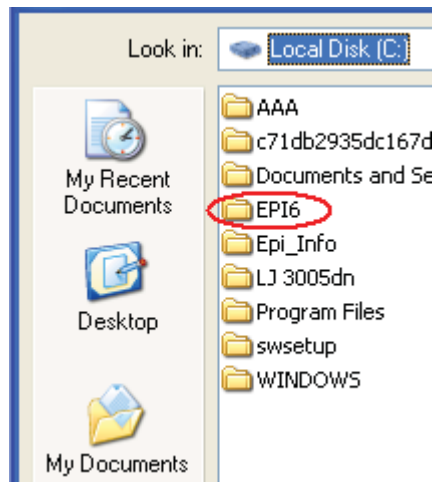
- In the new window **“Open With”**, click on the **“Browse”** button:



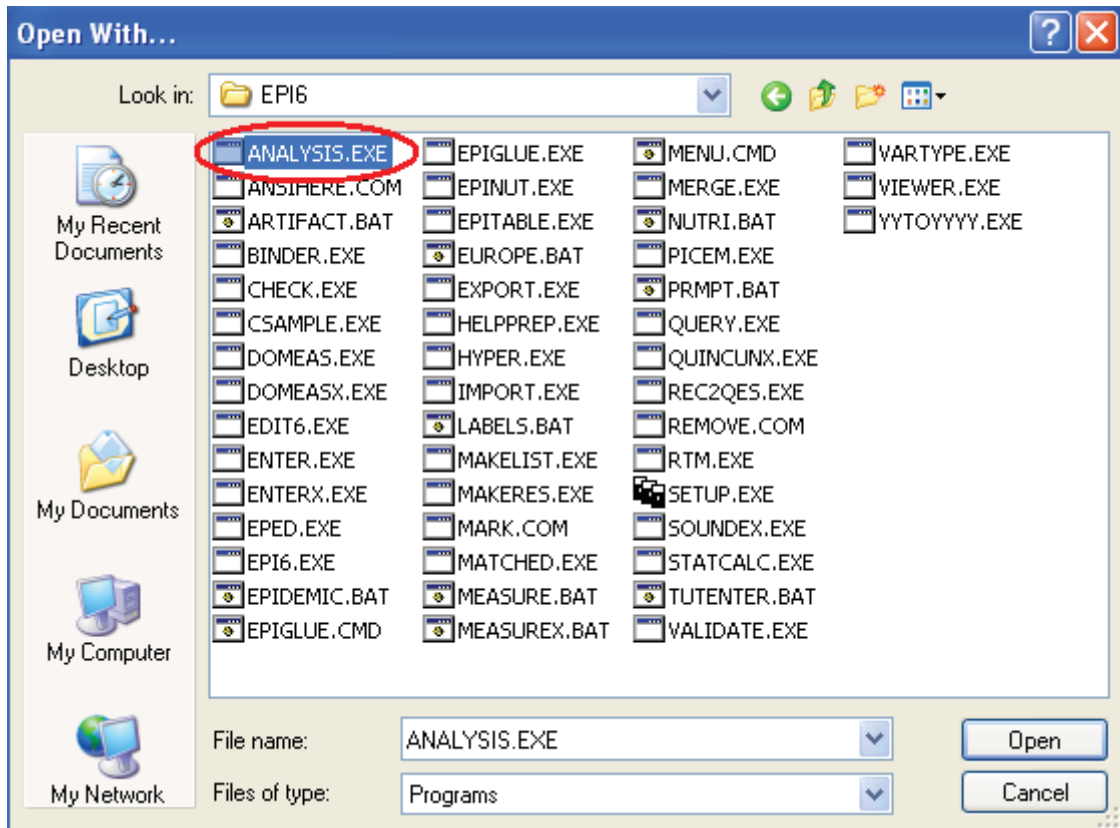
- In the next window, select “**Local Disk (C:)**” from the drop down list in “**Look in**”, as you have placed the Epi6 program files under this directory:



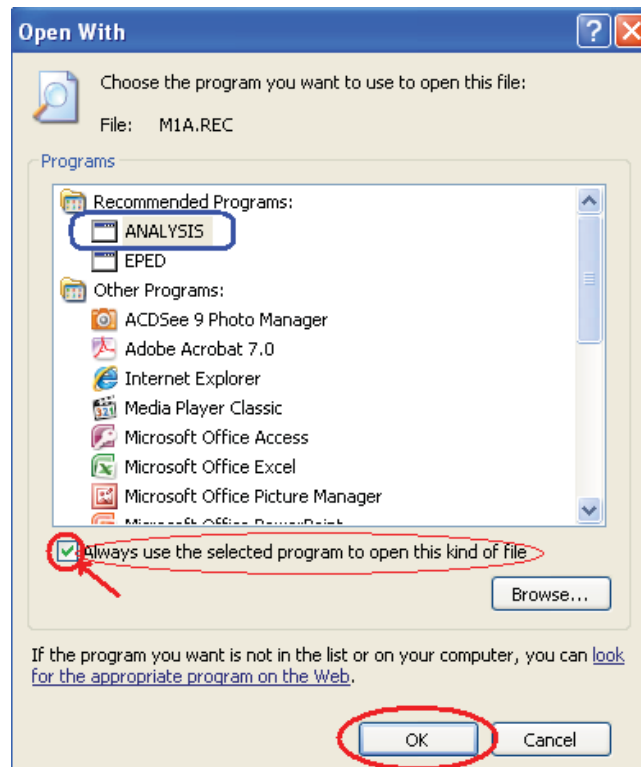
- Under “**Local Disk (C:)**” double click on “**Epi6**”:



- Next, double click on the file **“ANALYSIS.EXE”**:



- To complete the procedure, make sure that the box **“Always use the selected program to open this kind of file”** is ticked and then click on the **“OK”** button:



- The new screen appears: press the key “F10” to close it:

```

C:\EPI6\ANALYSIS.EXE
Dataset: C:\DOCUME~1\PIECHES\DESKTOP\EVALUA~1\CDIN' (36 recs) Free memory: 312K
Criteria: All records selected
Output - Screen
Only European dates found. Automatic SET EUROPEAN=ON performed.
EPI6>
F1-Help F2-Commands F3-Variables F4-Browse F5-Printer on F9-DOS F10-Quit

```

You will notice that the icon next to “M1A.REC” has changed and the file type now shows that this is recognized as a “REC File”:

M1A.QES	9 KB	QES File
M1A.REC	27 KB	REC File

This completes the process to copy data entry and analysis files to your computer. You are now ready to use Epi6 and the program to enter and analyse data on the assessment of student skills.

---

#### Summary steps to copy data entry and analysis files to your computer

---

- In the C: drive in your computer, create folder “AAA”;
- Copy in this last folder (“AAA”) the Epi6 program files for data entry and analysis;
- In folder “AAA”, associate the M1A.REC file to ANALYSIS.EXE.



## Learning by practising

---

The following sections will show how to enter data on the assessment of student skills (observation of case management) using the Epi6 program. These data have been collected using Form 16 of the Evaluation guide: the electronic Epi6 form has been designed based on it.

The files “**M1A.REC**” and “**M2A.REC**” in the folder “**AAA**”—that you have created in your computer—contain data from 36 student observations on the management of sick children which have already been entered. You will use these files to get familiar with data entry and practise running the analysis programs.

The CD-ROM has a folder called “**Epi6 practice**” which contains the file “**Student 45 Child Habiba.pdf**” with a filled-in Form 16 for your practice. You will use this form as the source of data to be entered in Epi6. For your convenience, you may wish to print it out, so that you have it on your desk in front of you when you follow the instructions to practise entering the data.

Once you are finished with the practice with data entry and analysis, if you wish, you can delete the “**M1A.REC**” and “**M2A.REC**” files, unless you want to keep them for further practice or to train data entry operators for your future evaluations. Blank data files (\*.REC) are automatically created anew each time you enter a new set of data (see “Creating a new file to enter new data”).

In addition to the folder “**AAA**” containing the Epi6 files for your practice, the CD-ROM contains two folders with a clean and revised set of Epi6 files for your future use, to enter and analyse data for your own student skill assessments:

- a) “**Epi6 files no malaria**”, for settings with no malaria; and
- b) “**Epi6 files with malaria**”, adapted for settings with malaria.

To practise how to validate duplicate data entry, two files (**M1A.REC** and **M1B.REC**) are contained in the following folder of the CD-ROM: “**Epi6 validation**”.

## Setting up the path for data entry files

In this practice, first you will launch the Epi6 program and next you will set the path for the data entry files.

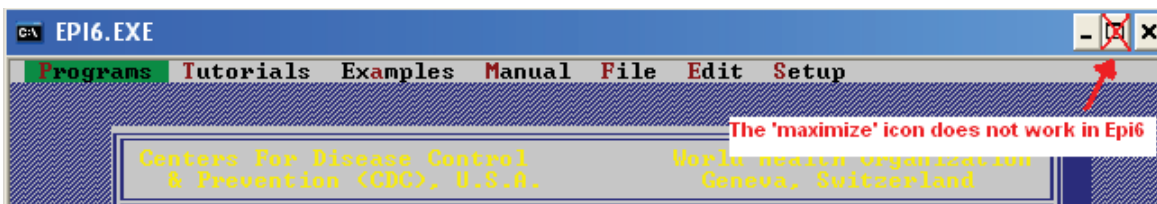
- To launch the Epi6 program, double click on the **Epi6** (EPI6.EXE) icon on the desktop:



The main Epi6 window appears, with the menu, as shown here:



- The window is small: to stretch it to occupy the whole monitor, press the key “**Alt**” and, while holding it down, press the “**Enter**” key. The window will expand to full screen, allowing you to enter data comfortably. Note that clicking on the maximize icon on the top right of the window will not work in Epi6.



To select a menu item and display the sub-menu, you have several options. You can:

- click on it with the left mouse; or
- type on the key board the letter of the menu item highlighted in red (e.g., letter “P” for “Programs”, “T” for “Tutorials” etc.); or
- simply press the “Enter” key when a menu item is highlighted in green (e.g., “Programs” is highlighted in green in the above picture).

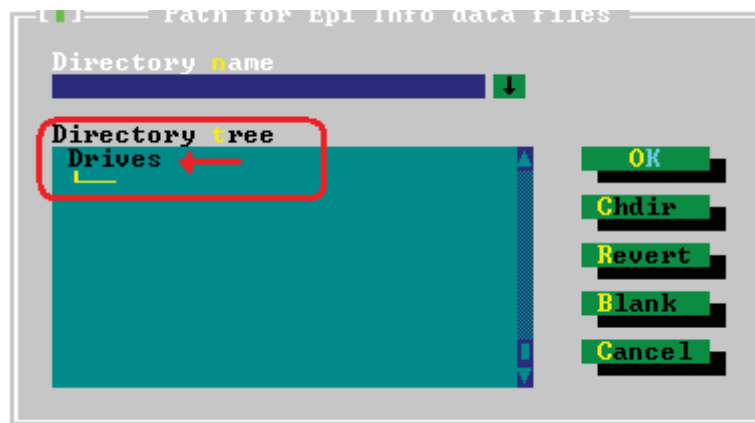
To move the cursor from one menu item to the next one, use either the left mouse or the left or right keys of the keyboard.

To access each time right away from Epi6 the data files with which you will be working, you can set-up the path. In this way, you are telling Epi6 where the files are, so that each time you open Epi6, the program will by default display the files in the selected folder. This saves time and is very convenient. As you placed the files in the folder “AAA” under “Local Disk (C:)”, follow these steps to set up the path to your files:

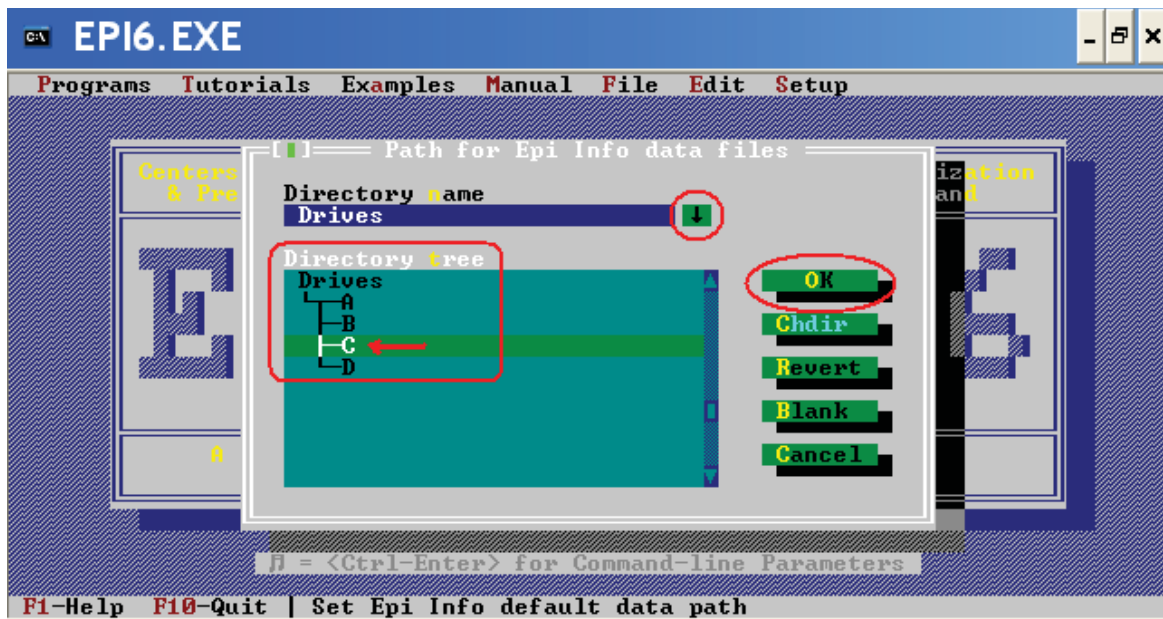
- Click “Setup” on the menu and select “Path for data files” as shown here:



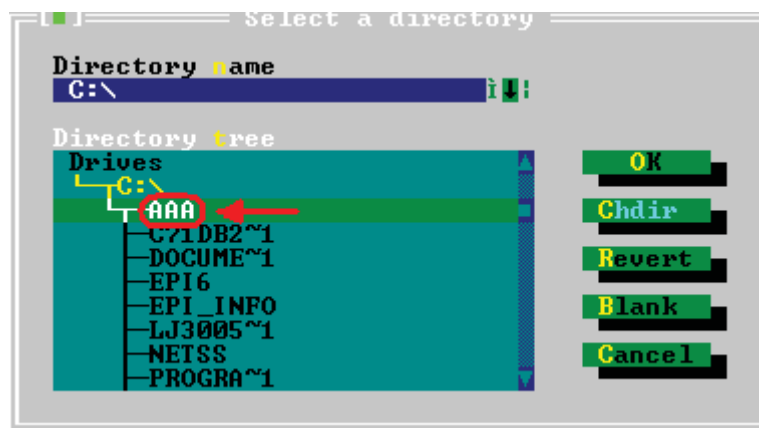
- In the next window, double click on “Drives” to display the list:



- Select drive “C”, double click on it and then click on “OK”:



- Select the folder “AAA” under drive “C”, which is the folder where your Epi6 working files are, and then double click on it:



- The path “C:\AAA” is now shown under “Directory name”; press “OK” to complete the procedure:



The display returns to the Epi6 main menu page. You have set up the path where Epi6 will look for your data files by default.

- To close Epi6, press the key “**F10**”.

## Practising data entry

This section provides a guide with practice to data entry. Follow these steps to open the data entry program:

- Double click on the **Epi6** (EPI6.EXE) icon on the desktop to launch Epi6:



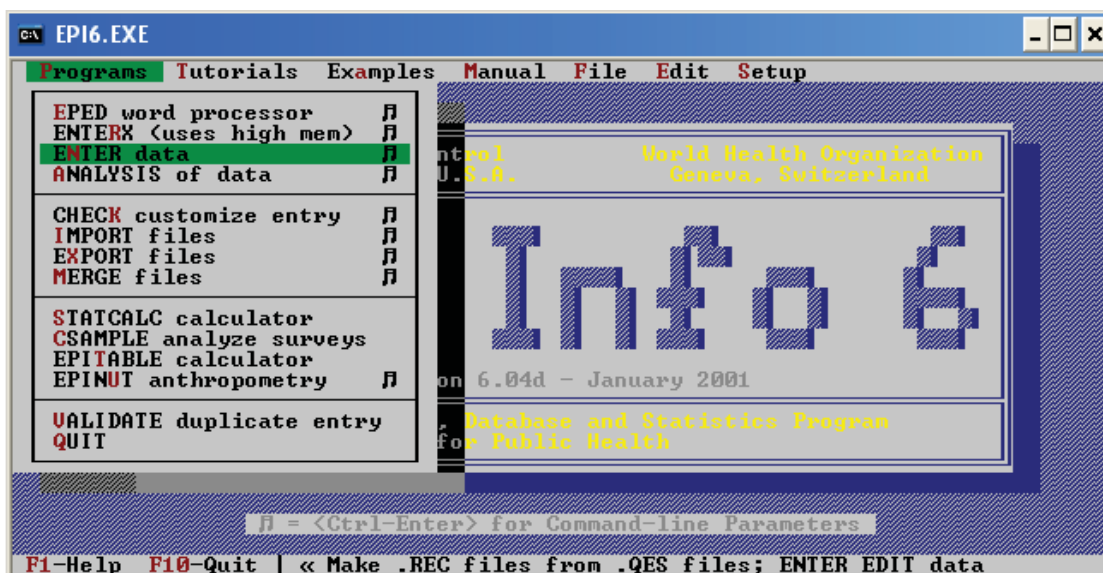
- Stretch the Epi6 window:



**Reminder:**

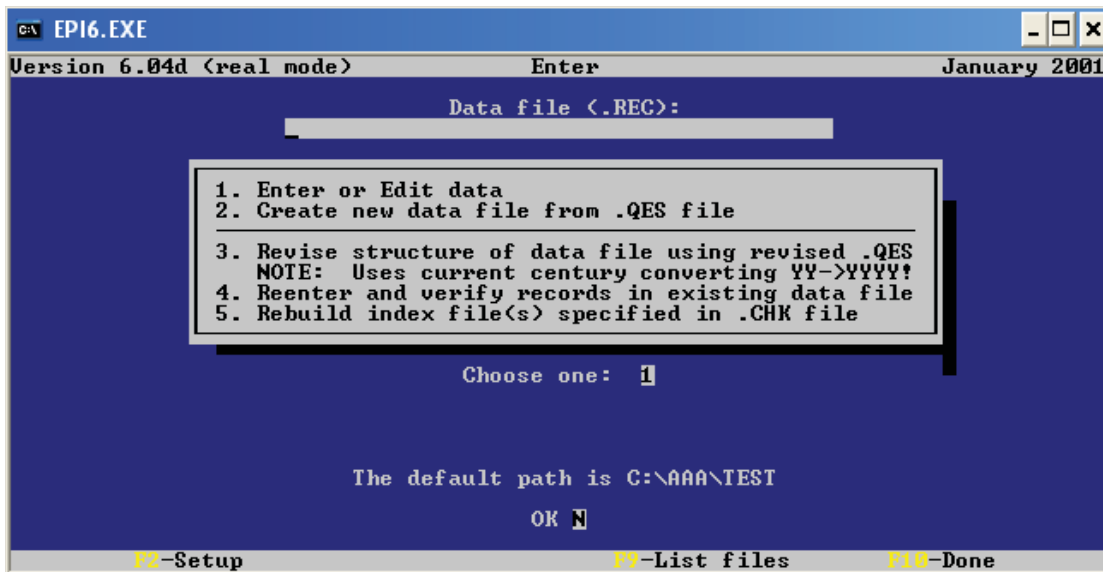
**To stretch the Epi6 window, press the “Alt” key and, while holding it down, press the “Enter” key. Clicking on the maximize icon on the top right of the window does not work in Epi6.**

- Click with the mouse on the menu item “**Programs**”.
- The following sub-menu is displayed; to open the data entry program, click on the sub-menu item “**ENTER data**”:

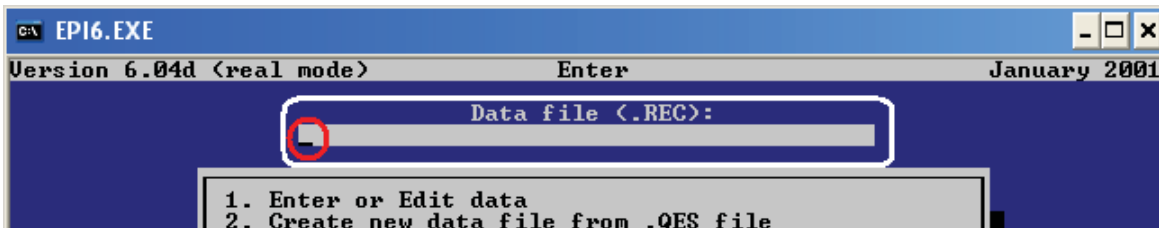


(you can also move to this item with the arrow keys of the keyboard and then press “Enter” when the item is highlighted in green; or you can press the letter “N”—highlighted in red in the menu item “ENTER data”—on the keyboard).

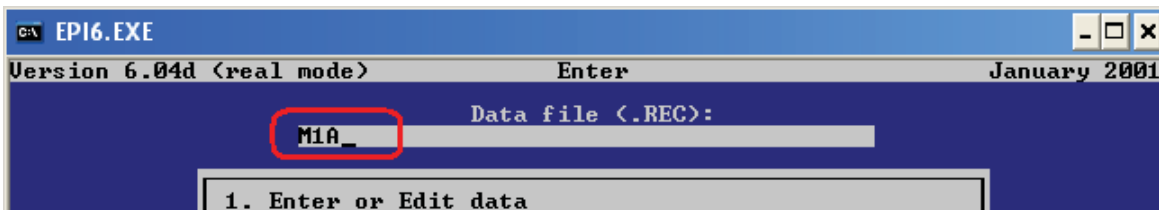
This new screen appears:



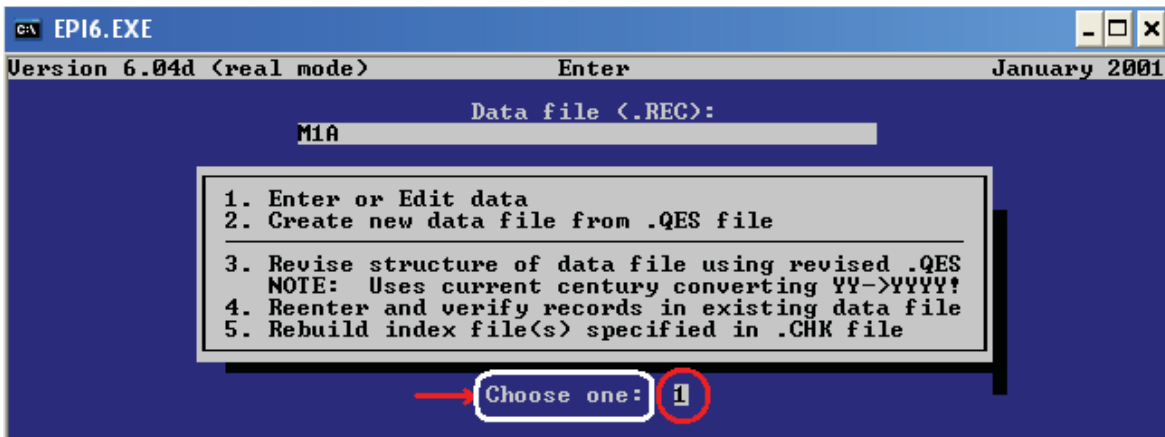
The cursor is automatically placed in the first white field, below the text “Data file <.REC>”:



- Type with the keyboard “M1A”, which is the name of the file which contains student records (data) related to the “Assessment and Classification” sections of the skill test. The field is not case sensitive: you can type either ‘M1A’ or ‘m1a’; it will automatically be converted to caps letters.

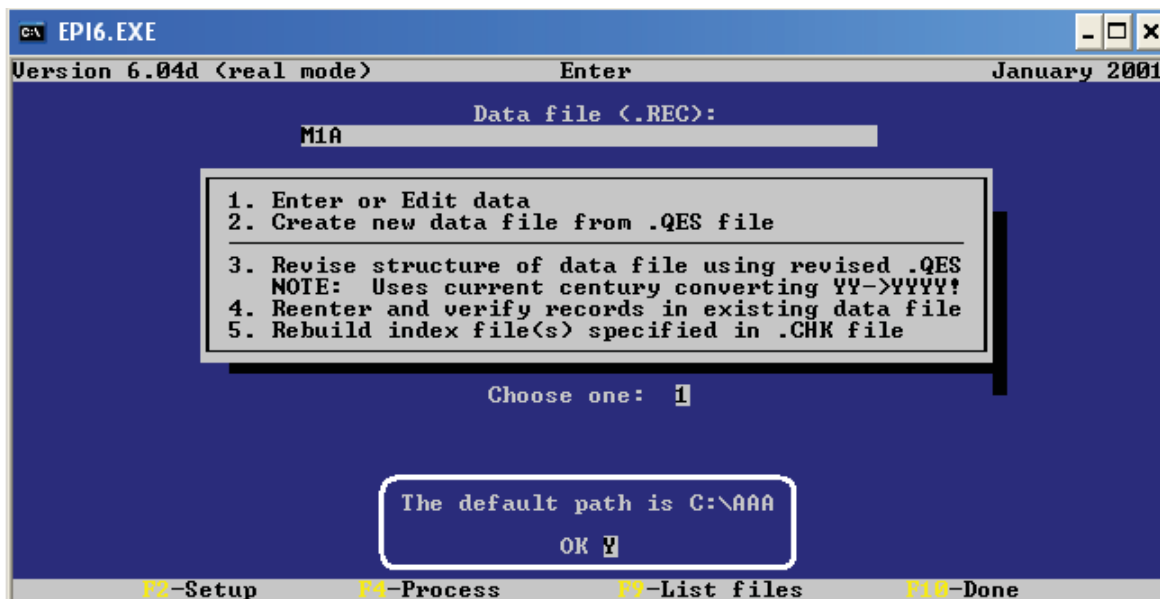


- Press “Enter” and the cursor will move to next field “Choose one”, where “1” is pre-entered.



This option (“1”) is used to open an existing data file (\*REC) and enter data, while option “2” is chosen to create a new data file, as explained in “Creating a new file to enter new data”. As we are going to open existing data files (**M1A.REC** and **M2A.REC**) for practice, option “1” is the option which applies to our case now.

- Simply press “Enter” and the cursor will move to the next and last field on this screen: “The default path is C:\AAA\...” “OK”:



- The default path shown is the one you created where you placed the Epi6 working files (**C:\AAA**); so, press “Enter” again (**OK = Y**).



A new screen appears, the data entry screen. This screen is used to enter the data for one student at a time. The data of 36 students have already been entered for you. This is therefore the 37<sup>th</sup> record, as shown at the bottom right: “Rec = 37”.

```

=====
OBSERVATION OF CASE MANAGEMENT - Child age 2 months up to 2 years
=====
Date: 10/06/2009      Evaluator ID:      Student ID code:
Child ID:             Sex      Birthdate:         Child Age in months:
Age group:           2-11 m. <1> 12-23 m. <2>
Weight Kg Wt:        Axillary temperature T:      C  Fever:
=====
CODES: Yes/assessed=1, No/not assessed=2, Not applicable=8, Missing=9
A.  ASSESSMENT
    Danger signs
dri  A1. Asks if child able to drink or breastfeed?
drimo A2. Mother says no?
drism A3. Student offers water?
vom  A4. Asks if child Vomits everything?
vommo A5. Mother says yes?
vomst A6. Student offers water?
con  A7. Asks if convulsions during this illness?
DATE: European dates allowed
<Ctrl-N>-New <Ctrl-F>-Find F5-Print F6-Delete F9-Choices F10-Done Mode: Multiuser
Rec = 37
  
```

Open the file “**Student 45 Child Habiba.pdf**” placed in the folder “**Epi6 practice**” of the CD-ROM. This file contains the filled-in Form 16 with data on student 45’s management of the child “Habiba”. For your convenience, you may wish to print it, so as to have it on you desk while you follow these instructions to enter the data.

The first field is “**Date**”. A date already appears in it: “10/06/2009”.

```

=====
OBSERVATION OF CASE MANAGEMENT - Child age 2 months up to 2 years
=====
Date: 10/06/2009      Evaluator ID:      Student ID code:
Child ID:             Sex      Birthdate:         Child Age in months:
Age group:           2-11 m. <1> 12-23 m. <2>
Weight Kg Wt:        Axillary temperature T:      C  Fever:
=====
CODES: Yes/assessed=1, No/not assessed=2, Not applicable=8, Missing=9
A.  ASSESSMENT
    Danger signs
dri  A1. Asks if child able to drink or breastfeed?
drimo A2. Mother says no?
drism A3. Student offers water?
vom  A4. Asks if child Vomits everything?
vommo A5. Mother says yes?
vomst A6. Student offers water?
con  A7. Asks if convulsions during this illness?
DATE: European dates allowed
<Ctrl-N>-New <Ctrl-F>-Find F5-Print F6-Delete F9-Choices F10-Done Mode: Multiuser
Rec = 37
  
```

This is the date that we entered for the last student record. If you enter a new date, this new date will be displayed also next time you open a new record to enter the data for another student. The date is ‘repeated’ automatically to simplify data entry, as many students are observed on the same day. You can always modify it by entering a different date, as applies.

For this practice, follow the information provided on the management of child Habiba by student 45 on Form 16 stored in file “**Student 45 Child Habiba.pdf**”: skip the “Enrolment card” and go to next page, which is page 1 of the form (page numbers are at the bottom of each page, excluding the enrolment card).

In the Epi6 data entry screen, we need to modify the date and enter “07/06/2009”, as this is the date recorded on the form. To enter this date, simply enter the numbers without the “/”, which is automatically added by the program:

- “Date”: So, enter “07062009”. The cursor automatically moves to next field “Evaluator ID” (circled in red below):

The screenshot shows the EPI6 data entry screen with the following fields populated: Date: 07/06/2009, Evaluator ID: [red circle], Student ID code: [red circle], Child ID: [red circle], Sex: [red circle], Birthdate: [red circle], Child Age in months: [red circle], Age group: 2-11 m. (1) 12-23 m. (2), Weight Kg Wt: [red circle], Axillary temperature T: [red circle] C, Fever: [red circle].

- “Evaluator ID”: Enter “01”. The cursor moves to next field “Student ID code” (circled in red below):

The screenshot shows the EPI6 data entry screen with the following fields populated: Date: 07/06/2009, Evaluator ID: 01, Student ID code: [red circle], Child ID: [red circle], Sex: [red circle], Birthdate: [red circle], Child Age in months: [red circle], Age group: 2-11 m. (1) 12-23 m. (2), Weight Kg Wt: [red circle], Axillary temperature T: [red circle] C, Fever: [red circle].

While the student ID code is “45”, try first to enter “35” as if you were making a mistake in entering the code, to see what happens:

- “Student ID code”: Enter “35” by mistake.

A red, warning message appears, alerting you that the record for **student 35** already exists as it has already been entered. The number “35” entered turns red:

The screenshot shows the EPI6 data entry screen with the following fields populated: Date: 09/06/2009, Evaluator ID: 2, Student ID code: 35, Child ID: 14, Sex: 1, Birthdate: [red circle], Child Age in months: 11, Age group: 1, 2-11 m. (1) 12-23 m. (2), Weight Kg Wt: 9.000, Axillary temperature T: 37.0 C, Fever: 2. A red warning message is displayed: "A. ASSE Record exists. Do you want to edit this record (Y/N)?". The Student ID code field is highlighted with a red circle.

You’ll notice that all the fields on the screen have automatically been populated with data and the data that you had just entered have changed (date, evaluator ID, etc.). This is because all the data on the screen have temporarily reverted to those of the record of student 35, waiting for your decision. In fact, we have already entered the records of 36 students, including the student with ID code “35”. This alert is important, because it aims at preventing you from entering the same student record more than once. In this evaluation, we must enter one and only one record for each student: each student has been given a unique code for the test.

- Click “N” for NO: you do not want to edit the record of student 35 as you want to enter a new record, that for the student with ID code 45.

The screen changes again: the data that you have entered until now for student 45 reappear; nothing has been lost. The mouse moves to next field (**Child ID**).

```

=====
OBSERVATION OF CASE MANAGEMENT - Child age 2 months up to 2 years
=====
Date: 07/06/2009      Evaluator ID: 1      Student ID code: 35
Child ID:             Sex      Birthdate:           Child Age in months:
Age group:           2-11 m. <1> 12-23 m. <2>
Weight Kg Wt:       Axillary temperature T:      C      Fever:
=====
  
```

Use the Up arrow key to return to “**Student ID code**”, as it shows number “35”, that we typed by mistake, while we need to enter “45”:

- “**Student ID code**”: Enter “45”. This number is now accepted as there is no other student with that same code among those which have been entered previously. Note that the “**Student ID code**” is a “must-enter” field (see message encircled in white at the bottom left of the screen): this means that the cursor will not move from here until you have entered a value. You can not leave it blank. This is a key piece of information for the analysis as it identifies the student to which all the information entered relates. You can enter values from “1” to “99” only. After you enter “45”, the cursor moves to “**Child ID**” (circled in red below):

```

=====
OBSERVATION OF CASE MANAGEMENT - Child age 2 months up to 2 years
=====
Date: 07/06/2009      Evaluator ID: 1      Student ID code: 45
Child ID:             Sex      Birthdate:           Child Age in months:
Age group:           2-11 m. <1> 12-23 m. <2>
Weight Kg Wt:       Axillary temperature T:      C      Fever:
=====

CODES: Yes/assessed=1, No/not assessed=2, Not applicable=8, Missing=9

A.  ASSESSMENT

    Danger signs
    -----
dri  A1. Asks if child able to drink or breastfeed?
drino A2. Mother says no?
drist A3. Student offers water?
vom  A4. Asks if child Vomits everything?
vommo A5. Mother says yes?
vomst A6. Student offers water?
cop  A7. Asks if complications during this illness?

ID: <You must enter data> Valid values: 1 to 99
Mode: Multiuser
Ctrl-N/New Ctrl-F/Find F5/Print F6/Delete F9-Choices F10-Done Rec= 37
  
```

- “**Child ID**”: Enter “02”.
- Press “Enter”.

The cursor moves to “Sex”:

OBSERVATION OF CASE MANAGEMENT - Child age 2 months up to 2 years

Date: 07/06/2009 Evaluator ID: 1 Student ID code: 45  
 Child ID: 2 Sex:  Birthdate: / / Child Age in months:   
 Age group: 2-11 m. (1) 12-23 m. (2)  
 Weight Kg Wt:  Axillary temperature T:  C Fever:

To view which entries are allowed in that particular field, you can press the key **F9** of the keyboard.

- Press the **F9** key:

OBSERVATION OF CASE MANAGEMENT - Child age 2 months up to 2 years

Date: 07/06/2009 Evaluator ID: 1 Student ID code: 45  
 Child ID: 2 Sex:  Birthdate: / / Child Age in months:   
 Age group: 2-11 m. (1) 12-23 m. (2)  
 Weight Kg Wt:  Axillary temperature T:  C Fever:

Legal values:  
 1 MALE  
 2 FEMALE

CODES: Yes/assessed=1, No not assessed=2, Not applicable=8, Missing=9

A. ASSESSMENT

Danger signs

dri A1. Asks if child able to drink or breastfeed?   
 drimo A2. Mother says no?   
 drist A3. Student offers water?   
 vom A4. Asks if child Vomits everything?   
 vommo A5. Mother says yes?   
 vomst A6. Student offers water?   
 conv A7. Asks if convulsions during this illness?

SEX: Valid values: 1, 2

Mode: Multiuser  
 Ctrl-N New Ctrl-P Find F5-Print F6-Delete F9-Choices F10-Done Rec= 37

A small window appears close to the “Sex” field, showing that the values allowed for this field are “1” for “Male” and “2” for “Female”:

Legal values:  
 1 MALE  
 2 FEMALE

Note the message at bottom of the screen: “SEX: Valid values: 1, 2”. You can not enter any other value than 1 or 2. Try to enter “3” as if you were making a mistake and see what happens.

- As Habiba is a baby girl and code “2” is circled on the form, enter “2” (for “Female”) or click on “2 Female”.

The cursor is now in the next field: “**Birthdate**”.

```

=====
OBSERVATION OF CASE MANAGEMENT - Child age 2 months up to 2 years
=====
Date: 07/06/2009   Evaluator ID: 1   Student ID code: 45
Child ID: 2   Sex: 2   Birthdate: / /   Child Age in months: 
Age group: 2-11 m. (1) 12-23 m. (2)
Weight Kg Wt:   Axillary temperature T:   C   Fever: 
=====
  
```

On the form, it is recorded that Habiba was born on “20/09/2008”.

- “**Birthdate**”: Enter “20092008” (the symbol “/” separating day, month and year is automatically added by the program).

The number “8” appears in the next field on “**Child age in months**”, automatically calculated by the program. At the same time, about in the middle of the screen, a small window with the message “**Press Enter 2 times**” is displayed:

```

=====
OBSERVATION OF CASE MANAGEMENT - Child age 2 months up to 2 years
=====
Date: 07/06/2009   Evaluator ID: 1   Student ID code: 45
Child ID: 2   Sex: 2   Birthdate: 20/09/2008   Child Age in months: 8
Age group: 2-11 m. (1) 12-23 m. (2)
Weight Kg Wt:   Axillary temperature T:   C   Fever: 
=====
CODES: Yes/assessed=1, No/not assessed=2, Not applicable=8, Missing=9
A. ASSESSMENT
   Danger signs
   -----
dri  A1. Asks if child able to drink or breastfeed? 1
drimo A2. Mother says no? 
drist A3. Student offers water? |Press Enter 2 times|
vom  A4. Asks if child Vomits 
vommo A5. Mother says yes? 
vomst A6. Student offers water? 
  
```

Press Enter 2 times

- Press “**Enter**” two times, as instructed: “1” will be inserted automatically in the succeeding field “**Age group**”. It may happen that the birth date of the child is not reported and only the age is available on the form: in this case, press “**Enter**” in the “**Birthdate**” field, leaving it blank, and manually enter the age of the child in months in the next field (“**Child Age in months**”).

The cursor is now in the field “Weight Kg”:

```

=====
OBSERVATION OF CASE MANAGEMENT - Child age 2 months up to 2 years
=====
Date: 07/06/2009      Evaluator ID: 1      Student ID code: 45
Child ID: 2          Sex 2      Birthdate: 20/09/2008      Child Age in months: 8
Age group: 1        2-11 m. <1> 12-23 m. <2>
Weight Kg Wt: .      Axillary temperature T:      C      Fever: 
=====
CODES: Yes/assessed=1, No/not assessed=2, Not applicable=8, Missing=9
  
```

- “Weight Kg”: Enter: 8.200 (Kg). The cursor moves to “Axillary temperature”:

```

=====
OBSERVATION OF CASE MANAGEMENT - Child age 2 months up to 2 years
=====
Date: 07/06/2009      Evaluator ID: 1      Student ID code: 45
Child ID: 2          Sex 2      Birthdate: 20/09/2008      Child Age in months: 8
Age group: 1        2-11 m. <1> 12-23 m. <2>
Weight Kg Wt: 8.200  Axillary temperature T: .      C      Fever: 
=====
CODES: Yes/assessed=1, No/not assessed=2, Not applicable=8, Missing=9
  
```

On the form, it is recorded that the child has an axillary temperature of 38.2 °C:

- “Axillary temperature”: Enter: “38.2” (or simply 382, as the “.” after 38 is automatically inserted by the program). The message “Press Enter 2 times” appears again on the screen:

```

=====
OBSERVATION OF CASE MANAGEMENT - Child age 2 months up to 2 years
=====
Date: 07/06/2009      Evaluator ID: 1      Student ID code: 45
Child ID: 2          Sex 2      Birthdate: 20/09/2008      Child Age in months: 8
Age group: 1        2-11 m. <1> 12-23 m. <2>
Weight Kg Wt: 8.200  Axillary temperature T: 38.2  C      Fever: 
=====
CODES: Yes/assessed=1, No/not assessed=2, Not applicable=8, Missing=9

A.  ASSESSMENT

      Danger signs
      -----
dri  A1. Asks if child able to drink on breastfeed?
drim A2. Mother says no? 
dris A3. Student offers water?
vom  A4. Asks if child Vomits
vommo A5. Mother says yes?

Press Enter 2 times
  
```

- Press “Enter” two times, as instructed. Next field (“Fever”) is automatically filled in based on the temperature value that you have entered. Code “1” means “yes”, this child has fever.

The cursor is now in the field of item “**A1. Asks if child able to drink or breastfeed?**” under “**A. ASSESSMENT – Danger signs**” (see field circled in red below):

```

=====
OBSERVATION OF CASE MANAGEMENT - Child age 2 months up to 2 years
=====
Date: 07/06/2009      Evaluator ID: 1      Student ID code: 45
Child ID: 2          Sex 2      Birthdate: 20/09/2008      Child Age in months: 8
Age group: 1        2-11 m. (1) 12-23 m. (2)
Weight Kg Wt: 8.200  Axillary temperature T: 38.2  C  Fever 1
=====
CODES: Yes/assessed=1, No/not assessed=2, Not applicable=8, Missing=9

A.  ASSESSMENT
    Danger signs
    -----
dri  A1. Asks if child able to drink or breastfeed? 1
drim A2. Mother says no?
dris A3. Student offers water?
vom  A4. Asks if child vomits everything?
vommo A5. Mother says yes?
vomst A6. Student offers water?
con  A7. Asks if convulsions during this illness?
DRIMO: Valid values: 1, 2, 8, 9
Mode: Multiuser
<Ctrl-N>-New <Ctrl-F>-Find F5-Print F6-Delete F9-Choices F10-Done Rec= 37

```

You have seen how to enter data using the Epi6 data entry program. To become more familiar with it and skipping patterns, continue entering the rest of the data on assessment and classification of the child Habiba by student 45. Simply enter the codes shown on the form.

- “**A1. Asks if child able to drink or breastfeed?**”: enter “1”.

```

A.  ASSESSMENT
    Danger signs
    -----
dri  A1. Asks if child able to drink or breastfeed? 1
drim A2. Mother says no? 2
dris A3. Student offers water?
vom  A4. Asks if child vomits everything?
vommo A5. Mother says yes?
vomst A6. Student offers water?
con  A7. Asks if convulsions during this illness?
DRIMO: Valid values: 1, 2, 8, 9
Mode: Multiuser
<Ctrl-N>-New <Ctrl-F>-Find F5-Print F6-Delete F9-Choices F10-Done Rec= 37

```

- The cursor moves to “**A2. Mother says no?**”: enter “2” as shown in the form.

You will see that the cursor jumps to item “**A4. Asks if child vomits everything?**”, skipping “**A3. Students offers water**”, according to the skipping pattern of the form. In fact, the instructions on the form under item **A2** require that if the answer is “No”, one should “Go to question # A4”. Had the answer to **A2** been “Yes”, **A3** would have had an answer in the form (no skipping pattern), which you would have entered.

```

ASSESSMENT
    Danger signs
    -----
no  A1. Asks if child able to drink or breastfeed? 1
st  A2. Mother says no? 2
st  A3. Student offers water?
no  A4. Asks if child vomits everything?
st  A5. Mother says yes?
st  A6. Student offers water?
:  A7. Asks if convulsions during this illness?
Valid values: 1, 2, 8, 9
Mode: Multiuser
<Ctrl-N>-New <Ctrl-F>-Find F5-Print F6-Delete F9-Choices F10-Done Rec= 37

```



- “A4. Asks if child vomits everything?”: enter “1”;
- “A5. Mother says yes?” enter “2”. The cursor will move to item A7, skipping A6, according to the skipping pattern of the form:

```

Danger signs
-----
dri    A1. Asks if child able to drink or breastfeed? 1
drimo  A2. Mother says no? 2
drist  A3. Student offers water? █
vom    A4. Asks if child Vomits everything? 1
vommo  A5. Mother says yes? 2
vomst  A6. Student offers water? █ ← A6 automatically skipped. Cursor moves to A7.
con    A7. Asks if convulsions during this illness? █
CON:  Valid values: 1, 2, 8, 9
Mode:  Multiuser
<Ctrl-N>-New <Ctrl-F>-Find F5-Print F6-Delete F9-Choices F10-Done Rec= 37

```

Enter data slowly, as this is just practice, checking the screen after each entry to see what happens each time.

- “A7. Asks if convulsions during this illness?”: enter “1”
- “A8. Child sleepy, lethargic, unconscious?”: enter “2”. The cursor will move to item A20, skipping A9, according to the skipping pattern of the form:

```

C:\ EPI6.EXE
let    A8. Child sleepy, lethargic, unconscious? 2
letst  A9. Student tries to wake up child? █
DS █
DSMX █
Cursor automatically moves to A20
-----
Cough or difficult breathing
Cough  A20. Asks about cough or difficult breathing? █
coughmo A21. Child has cough or difficult breathing? █
      If no cough nor difficult breathing:
coughst A22. Student enters cough box by mistake? █

```

Note that there are two items before item A20: “DS” and “DSMX”, which are not included in the form. These items are bypassed during data entry as if they did not exist. They will be filled in automatically later when running the programs for the analysis. Ignore them now and keep entering the data of student 45 as in the form.

- “A20. Asks about cough or difficult breathing?”: enter “1”.
- “A21. Child has cough or difficult breathing?”: enter “1” and note that the cursor moves to A23, skipping A22, as in the form.
- “A23. Asks for how long?”: enter “1”.
- “A24. Counts breathing rate?”: enter “1”. If the answer to this question had been “No” (i.e., the student did not count the respiratory rate), the cursor would have jumped from here to item A25, skipping sub-items A24a, A24b, A24c and A24d which are related the count itself, exactly as shown on the form: if No → “Go to question # A25”).

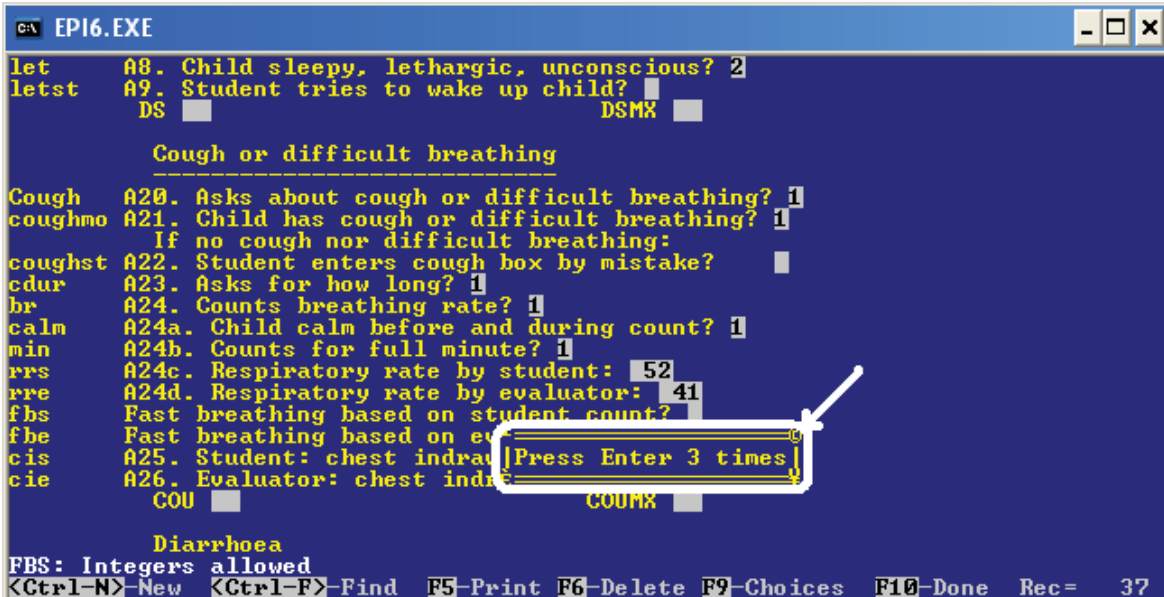


```

Cough or difficult breathing
-----
Cough  A20. Asks about cough or difficult breathing? 1
coughmo A21. Child has cough or difficult breathing? 1
        If no cough nor difficult breathing:
coughst A22. Student enters cough box by mistake?
cdur    A23. Asks for how long? 1
br      A24. Counts breathing rate? 1
calm    A24a. Child calm before and during count?

```

- “A24a. Child calm before and during the count?”: enter “1”.
- “A24b. Counts for full minute?”: enter “1”.
- “A24c. Respiratory rate by student”: enter “52” and press “Enter”.
- “A24d. Respiratory rate by evaluator”: enter “41”. Press “Enter”. The message “Press Enter 3 times” appears on the screen:



```

c:\ EPI6.EXE
let      A8. Child sleepy, lethargic, unconscious? 2
letst    A9. Student tries to wake up child?
        DS
        DSMX
Cough or difficult breathing
-----
Cough  A20. Asks about cough or difficult breathing? 1
coughmo A21. Child has cough or difficult breathing? 1
        If no cough nor difficult breathing:
coughst A22. Student enters cough box by mistake?
cdur    A23. Asks for how long? 1
br      A24. Counts breathing rate? 1
calm    A24a. Child calm before and during count? 1
min     A24b. Counts for full minute? 1
rrs     A24c. Respiratory rate by student: 52
rre     A24d. Respiratory rate by evaluator: 41
fbs     Fast breathing based on student count?
fbe     Fast breathing based on evaluator count?
cis     A25. Student: chest indrawing?
cie     A26. Evaluator: chest indrawing?
        COU
        COUMX
Diarrhoea
FBS: Integers allowed
<Ctrl-N>-New <Ctrl-F>-Find F5-Print F6-Delete F9-Choices F10-Done Rec= 37

```

- Press “Enter” 3 times as instructed. You can see that two items have been filled in automatically: “Fast breathing based on student count?” with “1” and “Fast breathing based on evaluator count?” with “2”:

```

C:\> EPI6.EXE
let      A8. Child sleepy, lethargic, unconscious? 2
letst    A9. Student tries to wake up child? █
          DS █                               DSMX █

          Cough or difficult breathing
          -----
Cough    A20. Asks about cough or difficult breathing? 1
coughmo  A21. Child has cough or difficult breathing? 1
          If no cough nor difficult breathing:
coughst  A22. Student enters cough box by mistake? █
cdur     A23. Asks for how long? 1
br       A24. Counts breathing rate? 1
calm     A24a. Child calm before and during count? 1
min      A24b. Counts for full minute? 1
rrs      A24c. Respiratory rate by student: 52
rre      A24d. Respiratory rate by evaluator: 41
fbs      Fast breathing based on student count? 1
fbe      Fast breathing based on evaluator count? 2
cis      A25. Student: chest indrawing present? █
cie      A26. Evaluator: chest indrawing present? █
          COU █                               COUMX █

          Diarrhoea
CIS: Valid values: 1, 2, 8, 9
Mode: Multiuser
<Ctrl-N>-New <Ctrl-F>-Find F5-Print F6-Delete F9-Choices F10-Done Rec= 37
  
```

- “A25. Student: chest indrawing present?”: enter “2”.
- “A26. Evaluator: chest indrawing present?”: enter “1”.

```

fbs      Fast breathing based on student count? 1
fbe      Fast breathing based on evaluator count? 2
cis      A25. Student: chest indrawing present? 2
cie      A26. Evaluator: chest indrawing present? 1
          COU █                               COUMX █
  
```

After entering “1” in A26, you will see that the cursor jumps to A30 (on a new screen), automatically bypassing the fields “COU” and “COUMX”. These will be filled in later when running the programs for the analysis. Ignore them and keep entering the data of student 45 as shown on the form.

- “A30. Asks about diarrhoea?”: enter “1”.
- “A31. Child has diarrhoea?”: enter “2”.
- “A32. Student enters diarrhoea box by mistake?”: enter “2”.

```

C:\> EPI6.EXE
Diar     A30. Asks about diarrhoea? 1
diarmo   A31. Child has diarrhoea? 2
          If no diarrhoea:
diarst  A32. Student enters diarrhoea box by mistake? 2
ddur     A33. Asks for how long? █
blood    A34. Asks if blood in stool? █
ips      A35. Student: child is restless? █
  
```

You will see that, after you enter “2” in **A32**, the cursor will jump to item **A40**, as this child has no diarrhoea, exactly as in the form: if **No** → “Go to question # **A40**”.

```

C:\ EPI6.EXE
-----
Diar  A30. Asks about diarrhoea? 1
diarmo A31. Child has diarrhoea? 2
      If no diarrhoea:
diarst A32. Student enters diarrhoea box by mistake? 2
ddur   A33. Asks for how long?
blood  A34. Asks if blood in stool?
irs    A35. Student: child is restless?
ire    A36. Evaluator: child is restless?
thirst A37. Offers something to drink?
ths    A37a. Student: child is thirsty?
the    A37b. Evaluator: child is thirsty?
pinch  A38. Pinches abdomen skin?
pincht A38a. Pinch skin correctly?
pinchs A38b. Stud.: pinch goes back   Normal (1) Slowly (2) Very slowly (3)
pinche A38c. Eval.: pinch goes back   Normal (1) Slowly (2) Very slowly (3)
      DD
      DDMX

      Throat problem
-----
throat A40. Ask about sore throat?
nod    A41. Checks front neck lymph nodes?
thr    A42. Examines throat correctly?
DIARST: Valid values: 1, 2, 8, 9
Mode: Multiuser
<Ctrl-N>-New <Ctrl-F>-Find F5-Print F6-Delete F9-Choices F10-Done Rec= 37

```

As seen before for **DS**, **DSMX** (under “Danger signs”) and **COU**, **COUMX** (under “Cough or difficult breathing”), items **DD** and **DDMX** (under “Diarrhoea”) remain blank and will be filled in later when running the programs for the analysis.

These jumps have been programmed specifically for this data entry form in advance. This means that any changes which are introduced in the standard Epi6 data entry program must be reflected also in the file which controls data entry (file “**M1A.CHK**”, meaning the “check” file) and program files for the analysis. This requires some knowledge of Epi6. The Epi6 manual can be downloaded at the following link (many language versions are available, including English, Arabic and French): <http://www.cdc.gov/epiinfo/epi6/ei6manl.htm> (accessed on 31 August 2009).

### Note

**If you adapt the data entry form, make sure you reflect those changes in all the related Epi6 files**

- Enter the three items under “**Throat problem**”: “1” in **A40**, “2” in **A41** and “1” in **A42**.

```

pincht A38a. Pinch skin correctly?
pinchs A38b. Stud.: pinch goes back   Normal (1) Slowly (2) Very slowly (3)
pinche A38c. Eval.: pinch goes back   Normal (1) Slowly (2) Very slowly (3)
      DD
      DDMX

      Throat problem
-----
throat A40. Ask about sore throat? 1
nod    A41. Checks front neck lymph nodes? 2
thr    A42. Examines throat correctly? 1
DIAR: Valid values: 1, 2, 8, 9
Mode: Multiuser
<Ctrl-N>-New <Ctrl-F>-Find F5-Print F6-Delete F9-Choices F10-Done Rec= 37

```

Items **ST** and **STMX** will be bypassed automatically, as seen before for **DS**, **DSMX** (under “Danger signs”), **COU**, **COUMX** (under “Cough or difficult breathing”) and **DD**, **DDMX** (under “Diarrhoea”). The cursor will move to item **A50**:

```

C:\ EPI6.EXE
      ST      STMX
      Ear problem
Ear    A50. Asks about ear problem? █
earmo  A51. Child has ear problem? █
earst  A52. Student enters ear problem box by mistake? █
pain   A53. Asks about ear pain? █
  
```

- Enter the next three items under “Ear problem”: “1” in **A50**, “2” in **A51** and “2” in **A52**.

```

      ST      STMX
      Ear problem
Ear    A50. Asks about ear problem? 1
earmo  A51. Child has ear problem? 2
earst  A52. Student enters ear problem box by mistake? 2
pain   A53. Asks about ear pain? █
  
```

The cursor will then jump to **A60**, under “Fever”, as shown in the form: if **No** → “Go to question # **A60**”, as this child has no ear problem. Items **EP** and **EMPX** will be automatically bypassed.

```

C:\ EPI6.EXE
      ST      STMX
      Ear problem
Ear    A50. Asks about ear problem? 1
earmo  A51. Child has ear problem? 2
earst  A52. Student enters ear problem box by mistake? 2
pain   A53. Asks about ear pain? █
dis    A54. Asks about ear discharge? █
dismo  A54a. Mother says child has discharge? █
dear   A55. Asks for how long discharge? █
swell  A56. Feels for tender swelling behind the ear? █
      EP      EMPX
      Fever
Fev    A60. Asks/checks about fever (or refer to temperature)? █
fevmo  A61. Child has fever? █
      If no fever:
fevst  A62. Student enters fever box by mistake? █
fdur   A63. Asks for how long? █
snt    A64a. Student uses correct technique for stiff neck? █
sns    A64b. Student: child has stiff neck? █
FEU: Valid values: 1, 2, 8, 9
Mode: Multiuser
<Ctrl-N>-New <Ctrl-F>-Find F5-Print F6-Delete F9-Choices F10-Done Rec= 37
  
```

- Enter the next items under “Fever”: “1” in **A60**, “1” in **A61** (Item **A62** is automatically bypassed as per the skipping pattern of the form), “1” in **A63**, “2” in **A64a** and “2” in **A64b**.

```

Fever
-----
Fev      A60. Asks/checks about fever (or refer to temperature)? 1
fevmo    A61. Child has fever? 1
         If no fever:
fevst    A62. Student enters fever box by mistake? █
fdur     A63. Asks for how long? 1
snt      A64a. Student uses correct technique for stiff neck? 2
sns      A64b. Student: child has stiff neck? 2
SNE: Valid values: 1, 2, 8, 9                               Mode: Multiuser
<Ctrl-N>-New <Ctrl-F>-Find F5-Print F6-Delete F9-Choices F10-Done Rec= 37

```

- Enter “2” in A64c. The cursor bypasses F and FMX and jumps to A70.

```

c:\ EPI6.EXE
sne      A64c. Evaluator: child has stiff neck? 2
         F █                               FMX █
-----
Malnutrition and anaemia
-----
vsw      A70. Student looks for visible severe wasting? █
vswt     A70a. Using the correct technique? █

```

- Enter the next items under “Malnutrition and anaemia”: “2” in A70 (the cursor then jumps to A71), “1” in A71, “1” in A71a, “2” in A71b, “2” in A71c, “1” in A72 (the cursor bypasses MAL, MALMX and jumps to A73); enter “1” in A73, “1” in A73a, “1” in A73b and “1” in A73c. The cursor bypasses AN and ANMX and jumps to A81.

```

c:\ EPI6.EXE
sne      A64c. Evaluator: child has stiff neck? 2
         F █                               FMX █
-----
Malnutrition and anaemia
-----
vsw      A70. Student looks for visible severe wasting? 2
vswt     A70a. Using the correct technique? █
vsus     A70b. Student: wasting present? █
vsve     A70c. Evaluator: wasting present? █
edema    A71. Looks for oedema of both feet? 1
edt      A71a. Looks for oedema correctly? 1
eds      A71b. Student: oedema present? 2
ede      A71c. Evaluator: oedema present? 2
WA       A72. Determines weight for age (against chart or plots on chart)? 1
         MAL █                               MALMX █
pallor   A73. Looks for palmar pallor? 1
pallort  A73a. Looks for pallor correctly? 1
palls    A73b. Stud.: palmar pallor... 1 None (1) some (2) severe (3)
palle    A73c. Eval.: palmar pallor... 1 None (1) some (2) severe (3)
         AN █                               ANMX █
-----
Immunization
SNE: Valid values: 1, 2, 8, 9                               Mode: Multiuser
<Ctrl-N>-New <Ctrl-F>-Find F5-Print F6-Delete F9-Choices F10-Done Rec= 37

```

- Enter items under “**Immunization**” and “**Vitamin A**”: enter “2” in **A81** (the cursor will jump to **A82**), “8” in **A82** (the cursor will jump to **A83**) and “2” in **A83**.

```

C:\ EPI6.EXE
immun A81. Immunisation status checked (asks or checks card)? 2
imms  A81a. Student: child is due for immunization?
imme  A81b. Evaluator: child is due for immunization?
immco A81c. Conclusions on which immunizations are due are the same?
      IMM IMMXX
-----
vitamin A
vits  A82. Vitamin A status checked (by history)? 8
vite  A82a. Student: child needs vit.A?
      UIT UITMX
-----
Other problems
Prob  A83. Other problems (asked)? 2
      PROBL PROBLMX
-----
ASS1 ASSSMX1 ASS2 ASSSMX2
ASS ASSSMX ASSPER
-----
B. CLASSIFICATION
IMMUN: Valid values: 1, 2, 8, 9
Mode: Multiuser
<Ctrl-N>-New <Ctrl-F>-Find F5-Print F6-Delete F9-Choices F10-Done Rec= 37
  
```

Items “**IMM**”, “**IMMXX**”, “**VIT**”, “**VITMX**”, “**PROBL**” and “**PROBLMX**” will be automatically filled in when running the programs for the analysis.

This takes you to items under “**B. Classification**”.

- Under “**General danger signs**”: enter “2” in **C1** and “2” in **C2**;
- Under “**Cough or difficult breathing**”: enter “2” in **C10** and “1” in **C11**;
- Under “**Diarrhoea**”: enter “2” in **C20** and “2” in **C21**.

```

C:\ EPI6.EXE
-----
General danger signs
sGDS C1. by student? 2 YES <1> NO <2>
eGDS C2. by evaluator? 2 YES <1> NO <2>
      CGDS CGDSMX
-----
Cough or difficult breathing
sCOU C10. by student: 2 Press F9 for entry codes
eCOU C11. by evaluator: 1 Press F9 for entry codes
      CCOU CCOUNX
-----
Diarrhoea
sD C20. by student: 2 YES <1> NO <2>
eD C21. by evaluator: 2 YES <1> NO <2>
-----
sDEH C22. Dehydration status by student: Press F9 for entry codes
eDEH C23. Dehydration status by evaluator: Press F9 for entry codes
      DEH DEHMX
-----
sPD C25. Persistent diarrhoea by student: Press F9 for entry codes
SGDS: Valid values: 1, 2, 8, 9
Mode: Multiuser
<Ctrl-N>-New <Ctrl-F>-Find F5-Print F6-Delete F9-Choices F10-Done Rec= 37
  
```

As the child has no diarrhoea, the cursor will jump to **C40**.

- Under “**Throat problem**”: enter “**3**” in **C40** and “**3**” in **C41**;
- Under “**Ear problem**”: enter “**8**” in **C50** and “**8**” in **C51**;

The screenshot shows the EPI6.EXE application window. The main area displays data entry fields for various symptoms. The 'Throat problem' section is highlighted with a white box, showing C40 (by student) and C41 (by evaluator) both set to 3. The 'Ear problem' section is also highlighted with a white box, showing C50 (by student) and C51 (by evaluator) both set to 8. Other sections like 'Fever' and 'Nutritional status' are partially visible. The bottom of the screen shows a prompt: 'Write data to disk <Y/N/<Esc>>?' with a red arrow pointing to it.

- Under “**Fever**”: enter “**7**” in **C60** and “**2**” in **C61**;
- Under “**Nutritional status**”: enter “**3**” in **C70** and “**3**” in **C71**;
- Under “**Anaemia**”: enter “**3**” in **C80** and “**3**” in **C81**.

The screenshot shows the EPI6.EXE application window. The main area displays data entry fields for various symptoms. The 'Nutritional status' section is highlighted with a white box, showing C70 (by student) and C71 (by evaluator) both set to 3. The 'Anaemia' section is also highlighted with a white box, showing C80 (by student) and C81 (by evaluator) both set to 3. A red arrow points to the 'Write data to disk <Y/N/<Esc>>?' prompt at the bottom left.

After entering code “**3**” in “**C81**”, a message appears at the bottom left of the screen: “**Write data to disk <Y/N/<Esc>>?**” As this is just practice and we want to keep the original dataset for run the analysis program, we prefer not to save the data of this record that we have just entered. Enter “**N**” for NO: do not save. However, when you enter real data of form 16 after the student skill assessment, you will enter “**Y**”, for YES, save the data to disk.



- Press the key “F10”, to exit the record. At the bottom of the screen, the same message appears again: “Write data to disk <Y/N/<Esc>>?”

```

=====
OBSERVATION OF CASE MANAGEMENT - Child age 2 months up to 2 years
=====
Date: 07/06/2009      Evaluator ID: 1      Student ID code: 45
Child ID: 2          Sex 2      Birthdate: 20/09/2008      Child Age in months: 8
Age group: 1        2-11 m. <1> 12-23 m. <2>
Weight Kg Wt: 8.200      Axillary temperature T: 38.2      C      Fever: 1
=====
CODES: Yes/assessed=1, No/not assessed=2, Not applicable=8, Missing=9
A.  ASSESSMENT
    Danger signs
-----
dri    A1. Asks if child able to drink or breastfeed? 1
drimo  A2. Mother says no? 2
drist  A3. Student offers water? 
vom    A4. Asks if child Vomits everything? 1
vommo  A5. Mother says yes? 2
vomst  A6. Student offers water? 
con    A7. Asks if convulsion during this illness? 1
Write data to disk <Y/N/<Esc>>?
<Ctrl-N> New <Ctrl-F> Find <F5> Print <F6> Delete <F9> Choices <F10> Done Rec= 37

```

This message is simply asking you whether you want to save the data of the last record that you have entered before leaving the program. All previous records have been saved; this message applies only to the last record that you have entered. If something goes wrong before you save, only the last record will be lost. The remaining records, previously entered, will remain unaffected in the database.

- As we decided not to save this last record, type “N” (for NO).

The screen closes, to show the Epi6 main menu page:

```

=====
EPI6.EXE
-----
Programs Tutorials Examples Manual File Edit Setup
-----
Centers For Disease Control      World Health Organization
& Prevention (CDC), U.S.A.      Geneva, Switzerland

Epi Info 6
Version 6.04d - January 2001

A Word Processing, Database and Statistics Program
for Public Health

F = <Ctrl-Enter> for Command-line Parameters
-----
F1-Help F2-New F3-Open F4-Close F5-Print F8-Menu F9-Save F10-Quit

```

If you wanted to close also this screen, you would press the key “F10” again. However, you are now ready to enter also the data on “Identification of treatment” and “Assessment and identification of feeding problems” of form 16 for student 45 to practise and so want to continue:



- click on “**Programs**” and then click on “**ENTER data**” .
- enter file name “**M2A**”.
- press “**Enter**” three times to open the screen for data entry (as you did earlier for M1A) for this second part of Form 16;
- start entering data.

You will have to enter again **Student ID**, **Child ID** and **Child Age**, before entering the rest of the data. ‘Dummy data’ for 36 students have been entered for you. You will practise entering the data for student “45”, which is now record 37 in **M2A.REC**. Enter:

- **Student ID code: 45**
- **Child ID: 2** (press “Enter”)
- **Child Age in months: 8** (press “Enter”).

```

C:\> EPI6.EXE
=====
OBSERVATION OF CASE MANAGEMENT - Child age 2 months up to 2 years
=====
Student ID code ID: 45 Child ID: 2 Child Age in months: 8
=====
  
```

Enter the remaining data. For the “Treatment” table of form 16, enter “2” for any blank cell (no tick) and “1” for any cell with tick, as shown below. So, enter “2” for “sT0” (blank cell, no tick on the form) and “1” for “eT0” (cell with tick). This is done to help the evaluator fill in form 16 in a much faster way.

```

C:\> EPI6.EXE
=====
OBSERVATION OF CASE MANAGEMENT - Child age 2 months up to 2 years
=====
Student ID code ID: 45 Child ID: 2 Child Age in months: 8
=====
CODES: Yes/assessed=1, No/not assessed=2, Not applicable=8, Missing=9
C. TREATMENT
Enter 1 if ticked, 2 if not ticked

Give 1st dose of an appropriate antibiotic
Treat the child to prevent low blood sugar
Refer urgently to hospital
Oral antibiotic for pneumonia
Treat wheezing if present
Advise mother when to return immediately
Follow up
Follow up if not improving
Fluids for severe dehydration (Plan C)
Fluids, zinc, food for some dehydration (Plan B)
ID: (You must enter data) Valid values: 1 to 99
=====
By Student By Evaluator
sT0 2 eT0 1
sT1 2 eT1 1
sT2 2 eT2 1
sT3 1 eT3 2
sT4 1 eT4 1
sT5 2 eT5 2
sT6 1 eT6 2
sT7 2 eT7 2
sT8 2 eT8 2
sT9 2 eT9 2
=====
Ctrl-N New Ctrl-F Find F5 Print F6 Delete F9 Choices F10 Done Rec= 37
  
```

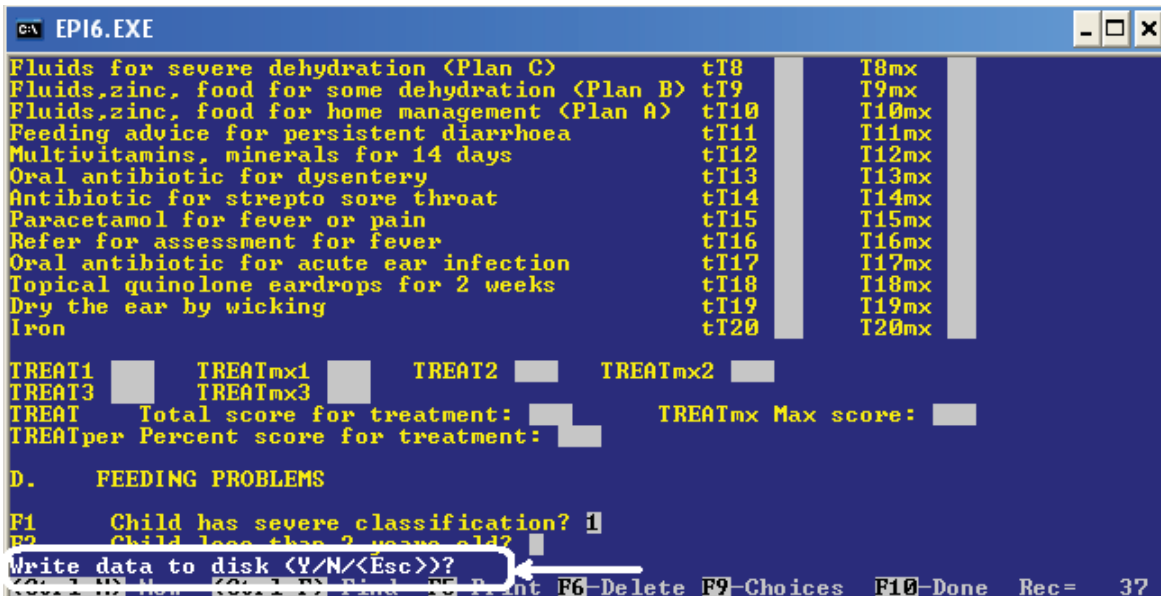
### **Reminder:**

**As you enter data, always pay attention to the screen, to see where the cursor is and whether any message appears.**

After you enter “2” in eT20, the cursor jumps to F1. The items that have been bypassed and remained blank in the Epi6 data entry screen under “Scores”, before F1, will be automatically filled in when the program for the analysis is run.

After entering “1” in “F1. Child has severe classification?”, the cursor bypasses the rest of items under “D. FEEDING PROBLEMS”, in line with the skipping pattern shown on the form: if Yes → “Go to question # A90”. This child has a severe classification according to the evaluator and the assessment of feeding problems has therefore been skipped.

After entering “1” in F1, you will be asked whether you wish to save (“Write data to disk <Y/N/<Esc>>?”):



- As this is just practice, enter “N” for No (do not save); if the message remains displayed, press “N” again;
- Press the key “F10”, to exit the record. At the bottom of the screen, the same message appears again: “Write data to disk <Y/N/<Esc>>?”
- As we decided not to save this last record, type “N” (for NO). The Epi6 data entry screen closes and the Epi6 main menu page is displayed: press F10 to exit Epi6.

## Validating the data entered

### Checking the data

It is recommended that two different operators enter the same data independently, so that the accuracy of data entry can be checked and the data validated.

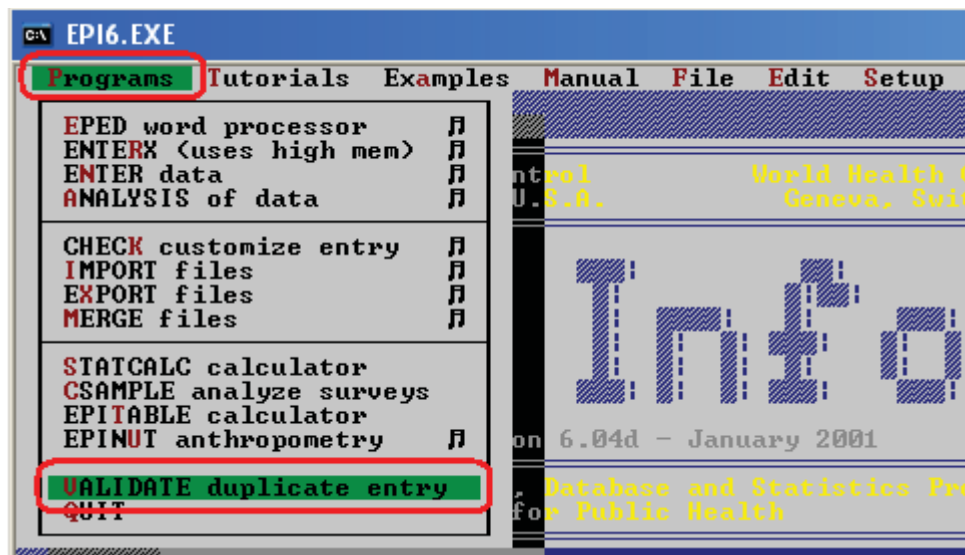
The folder “**Epi6 validation**” in the CD-ROM contains two files: **M1A.REC** and **M1B.REC**. File **M1A.REC** is the same one you have used with the 36 records already entered. File **M1B.REC** is the same file as **M1A.REC** but contains a few errors: these have been made intentionally in data entry to show you how to validate data.

To check and validate data, follow these steps.

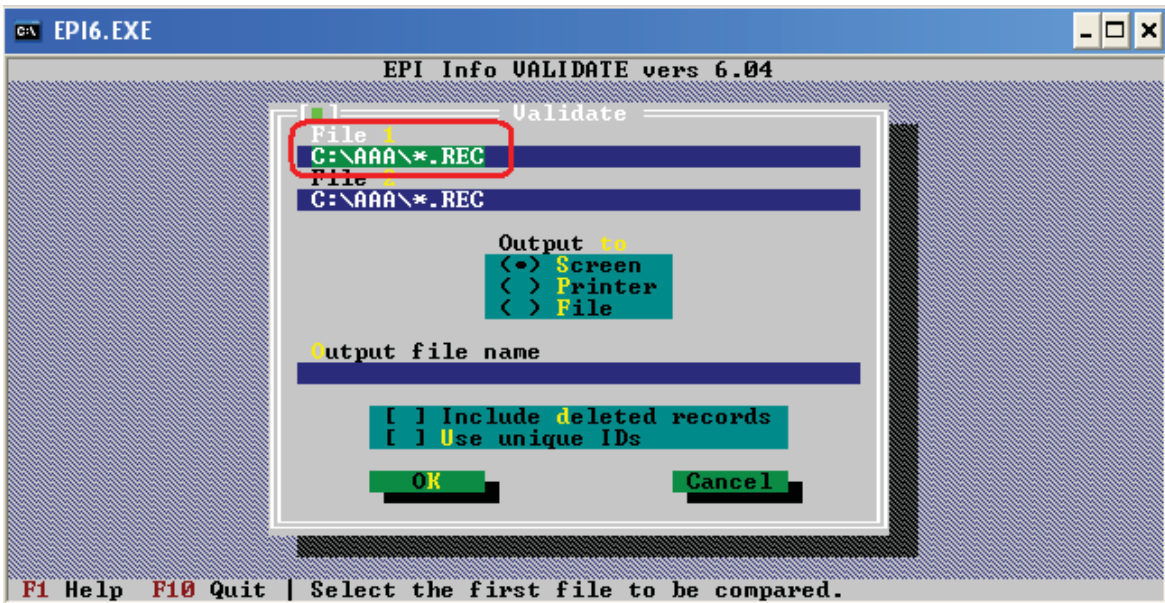
- Copy the file **M1B.REC** from the CD-ROM into folder “**C:\AAA**” on your computer where you have placed all the other files for practice. To copy files see page 105.
- Double click on the **Epi6** (EPI6.EXE) icon on the desktop to open the Epi6 main menu page:



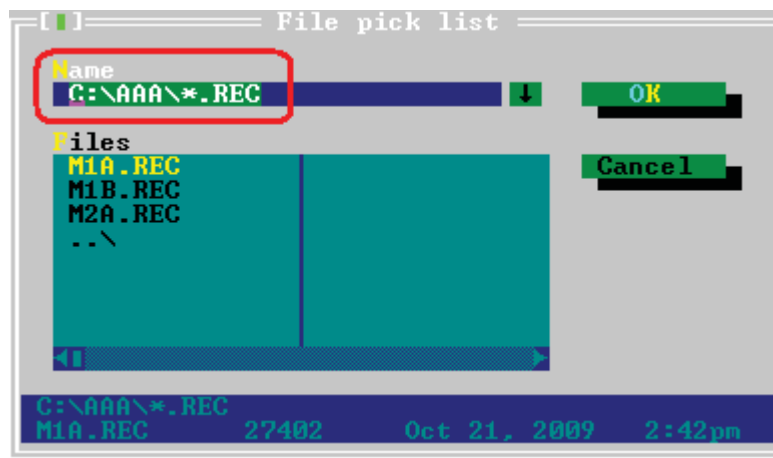
- On the main menu on top, select “**Programs**” and from the drop down menu click “**VALIDATE duplicate entry**”:



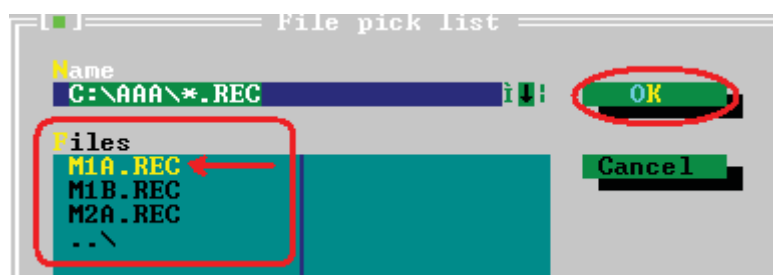
- A new window opens: double click inside the field under “File 1” to select the first file with the data:



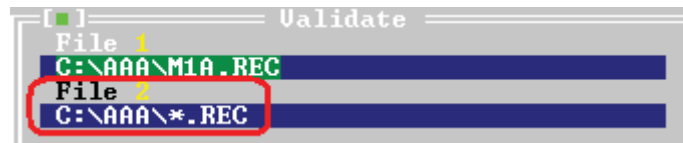
As we have set by default the path to the folder where we have put all our files, under “Name” the path “C:\AAA\\*.REC” will be displayed showing the folder holding the data files:



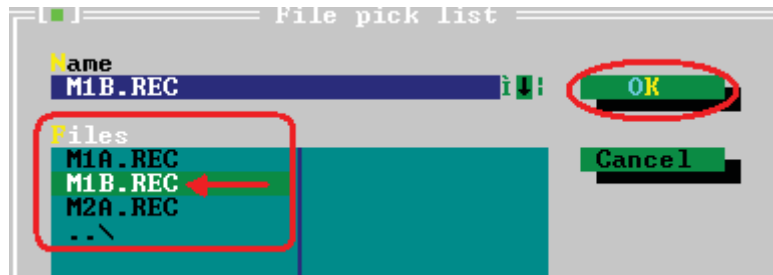
- Select, under “Files”, the file **M1A.REC** and click on “OK”:



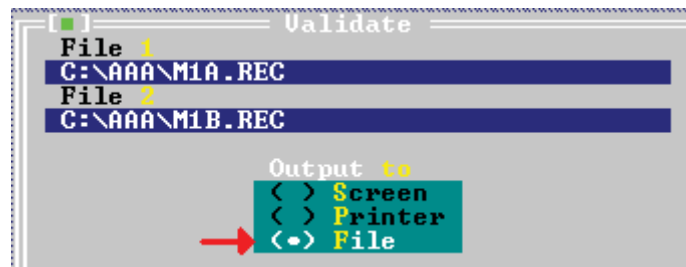
- In the new window which opens, double click inside the field under “File 2” to select the second file holding the data that you want to compare with the first file:



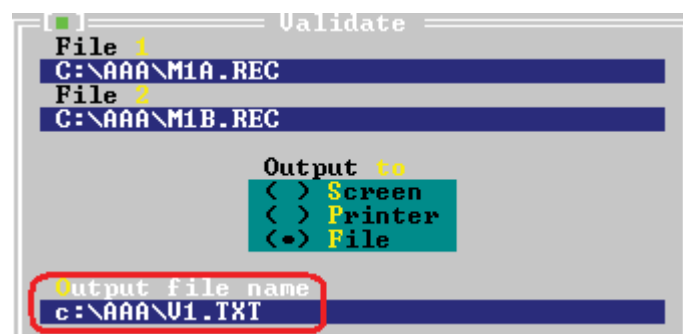
- Next, select the file **M1B.REC** from the list of files and click “OK”:



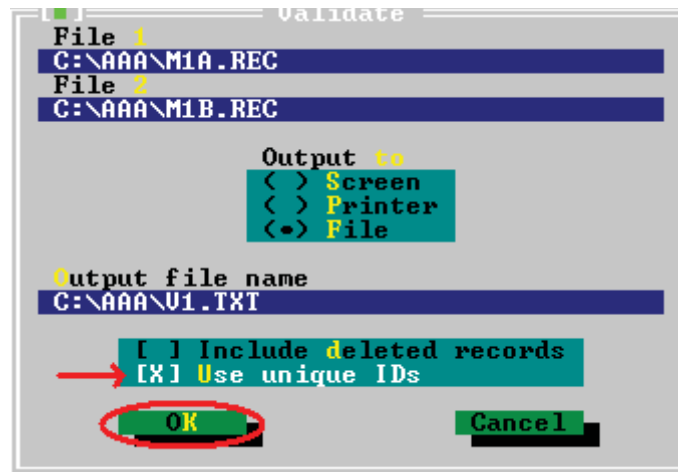
- You can see that the two files that you want to compare for validation (**M1A.REC** and **M1B.REC**) are listed under the fields “File 1” and “File 2”, respectively. In the middle of the window is an option on where to send the output of the validation process. Click “File” to have it saved as a text file:



- Type the path and output file name. For example, let’s call the output file “**V1.TXT**” and have it saved in the folder “**C:\AAA\**” which already contains all our files. Let’s then type “**C:\AAA\ V1.TXT**”:



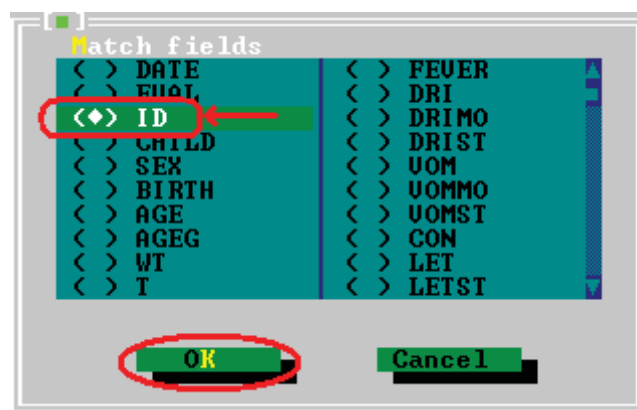
- Below it, choose “Use unique IDs”, as indicated by the red arrow here:



- Click on “OK”.

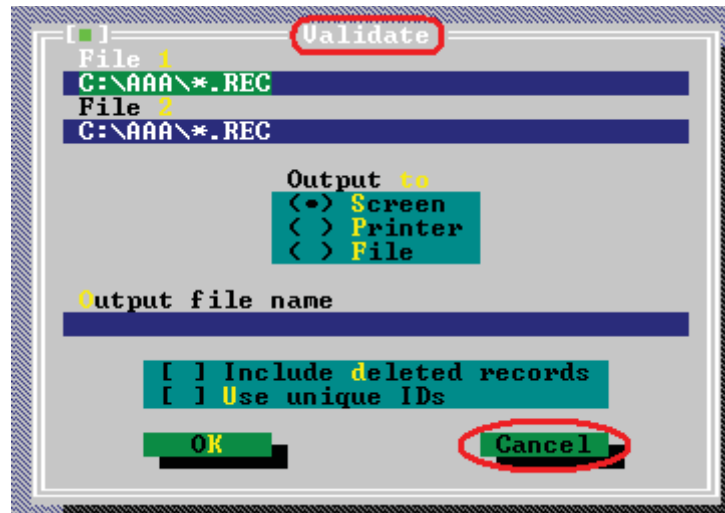
We are going to compare the two files **M1A.REC** and **M1B.REC**, record by record, according to the **student ID code**, which is the unique ID we have used to identify each record. In fact, records of each student may be entered by the two operators in a different order in the two files: we need to tell the program how to match the records in order to compare them.

- In the next window, click on “ID” (student ID code) and then “OK”:

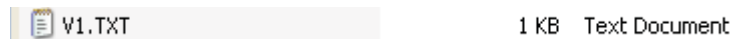


A horizontal bar will be displayed in the middle of the window very quickly, showing the progress of record matching. This will take only few seconds. Then the “Validate” window will appear again, in case you wish to match other files.

- Click “Cancel”:



- The Epi6 main menu page will be displayed. Press **F10** to close Epi6.
- Go to the folder “C:\AAA” to view the validation report that has just been generated. Double click on the file “V1.TXT”:

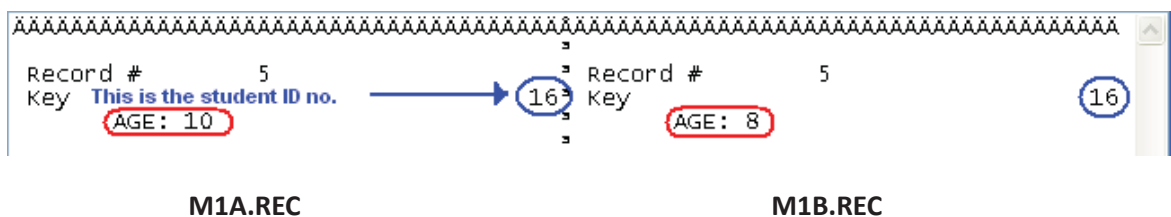


The lower part of the report shows the number of records which have been examined in each file (36 in our case; see blue arrows). This is important as the two files must have the same number of records. It also shows the number of records which differ: in this case, there are three records which have some different entries:



The top part of the report shows which records and which entries per record differ. The left column refers to the first file (**M1A.REC**), the right column to the second file (**M1B.REC**).

The first record with a mismatching entry is that of **student ID no. 16** (the “Key”, circled in blue in the picture below). In the field **AGE**, “10” has been entered in the first file (**M1A.REC**) while “8” has been entered in the second file (**M1B.REC**). Thus, one needs to go back to the paper form of student no. 16 to check what the correct age is and then amend the **M1A.REC** if the age is different from the value of “10” which has been entered.



The other two rows have the same structure. In the second row, the record for **student ID no. 2** has “37.0” entered for the temperature (T) in the first file (left column) and “36.5” in the second file (right column). Again, one needs to check the original form and then amend **M1A.REC** if needed.

```

AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
3
Record #      13          2 Record #      13          2
Key          T: 37.0      2 Key          T: 36.5      2

```

Finally, the third row refers to the record of **student ID no. 25**. In the field **SEX**, the first file shows “1” (male) while the second file shows “2” (female). As done for the previous data, checking the original paper form will tell which one is the correct entry.

```

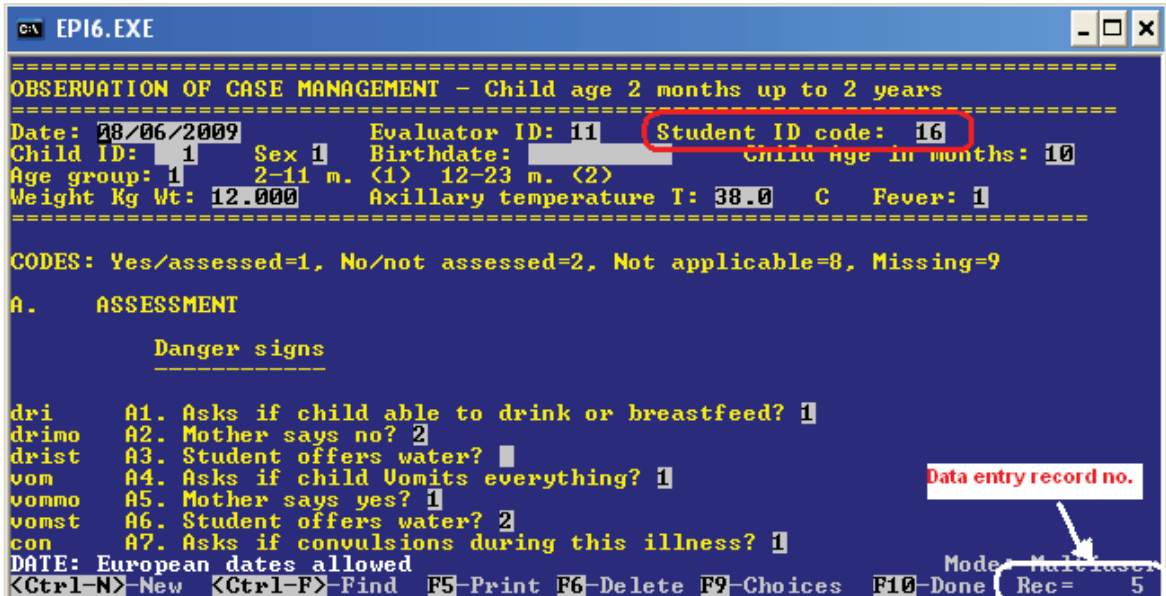
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
3
Record #      1          25 Record #      1          25
Key          SEX: 1      25 Key          SEX: 2      25

```

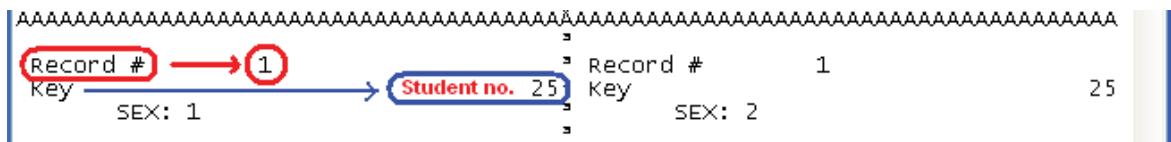


### Correcting the data

To correct the data, just follow the same procedures as those to enter the data described earlier. When the data entry screen is open, press the key **F7** to move backwards, record by record, until you find the record no. which corresponds to the student whose data you want to amend. The record no. is shown at the bottom right of the Epi6 data entry screen:



In the validation report (**V1.TXT**), the record no. is shown as the first item. For example, the record no. which corresponds to student 25 is "1", as shown below. This means that student 25 has been the first record which has been entered in **M1A.REC**:

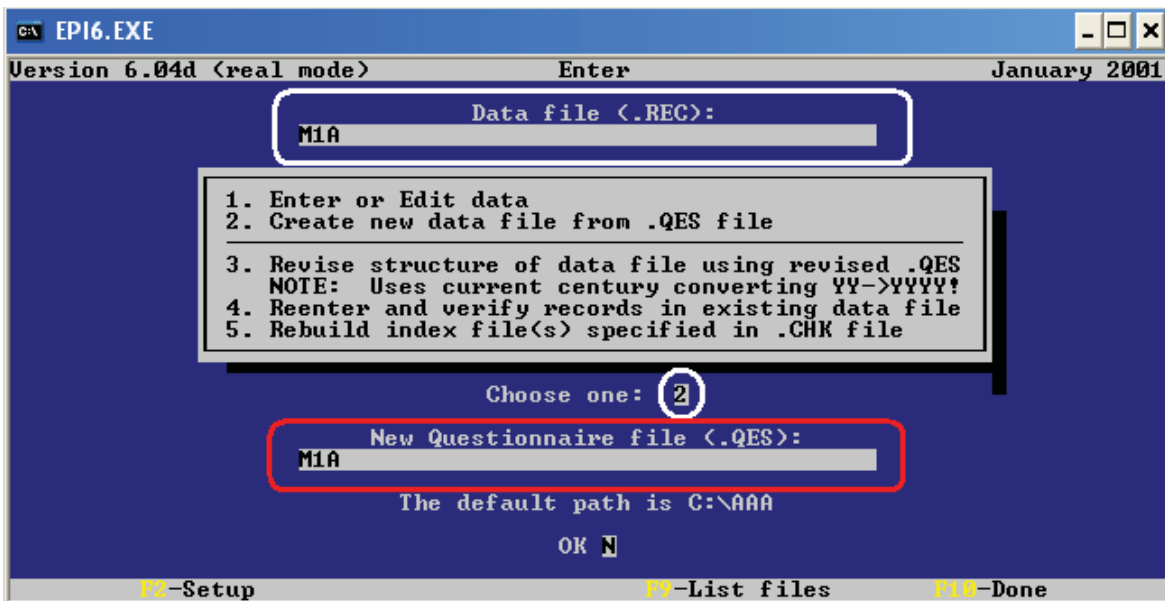


Make the necessary correction/s in the appropriate field/s, then press **F10** and enter "Y" to save data to disk. Finally, press **F10** again to exit Epi6.

## Creating a new file to enter new data

To enter new data from the scratch, e.g. those related to your own student skill assessment in the future, you will need to create new, blank files “**M1A.REC**” and “**M2A.REC**”. Follow the steps described earlier in “Practising data entry”:

- Enter “**M1A**” in the field “**Data file <.REC>**”;
- Enter “**2**” in the field “**Choose one:**” and press “**Enter**”.
- As shown below (area circled in red), after pressing “**Enter**”, a new field appears, “**New Questionnaire file (.QES)**”: enter here the same file name “**M1A**” and press “**Enter**”.



- Finally, press “**Enter**” again in the last field “**The default path is C:\AAA\...**” “**OK: Y**”. A new file “**M1A.REC**” with 0 records will be generated, in which you will be able to enter new data.

The file “**M1A.CHK**” must be in the same folder as the file “**M1A.QES**” for you to create a new “**M1A.REC**” file. Repeat the same steps to create a blank file “**M2A.REC**”, entering “**M2A**” instead of “**M1A**”.

The enclosed CD contains three different sets of Epi6 program files: a) “**AAA**”: to practise data entry as described in this guide; b) “**Epi6 files no malaria**”: for countries with no malaria; and c) “**Epi6 files with malaria**”: for countries with malaria. Use either b. or c. for your assessment of student skills, depending on whether or not your IMCI guidelines include malaria. For your convenience, the blank files “**M1A.REC**” and “**M2A.REC**” with 0 records have already been created in the folders, ready for you to enter data.

## Data analysis: generating and understanding analysis reports

---

To facilitate the analysis and be able to generate results on key indicators right after the last student record has been entered in Epi6, the following programs have been prepared:

- a) **M1A.PGM**
- b) **M2A.PGM**
- c) **SAMPLE.PGM**
- d) **CM.PGM**
- e) **MX.PGM**
- f) **TEMP.PGM**
- g) **SCORE.PGM**

These programs are run in the above order and you will practise with them in this section. Definitions and details about the indicators are provided in the Evaluation guide.

### Scoring tasks and steps

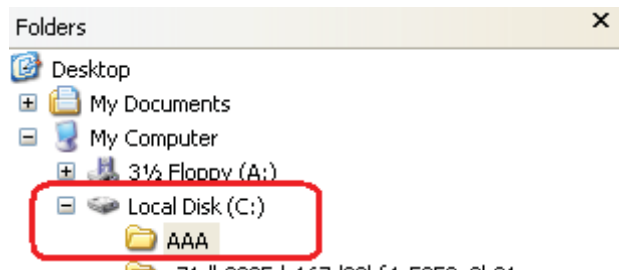
---

To score individual tasks and IMCI case management steps performed by each student, you will use the first two programs. When you run **M1A.PGM** and **M2A.PGM**, these programs will automatically:

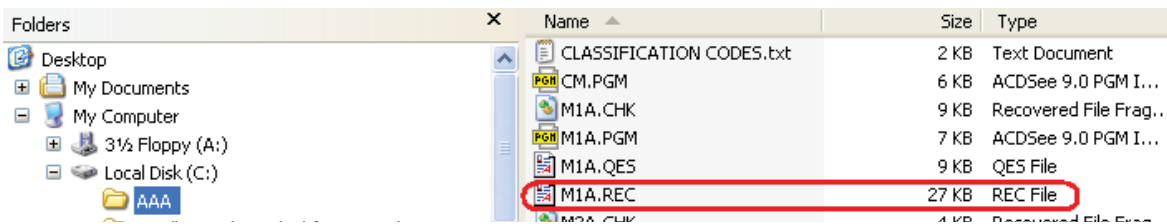
- assign a score to each task performed by a student based on the data which have been entered and stored in **M1A.REC** and **M2A.REC**;
- calculate the total score obtained by the student and the maximum total score that each student would obtain if s/he performed all tasks correctly;
- calculate scores for the IMCI case management steps such as “Assessment” and “Classification” (**M1A.PGM**) and “Identification of treatment”, “Assessment and identification of feeding problems” and “Advice on fluids and feeding” (**M2A.PGM**).

The **M1A.PGM** program is run on file **M1A.REC**; the **M2A.PGM** program is run on file **M2A.REC**. Follow these steps to run the first program and then repeat the same steps to run the second program.

- Go to the folder “AAA” in the C: drive, where you copied all the Epi6 files:

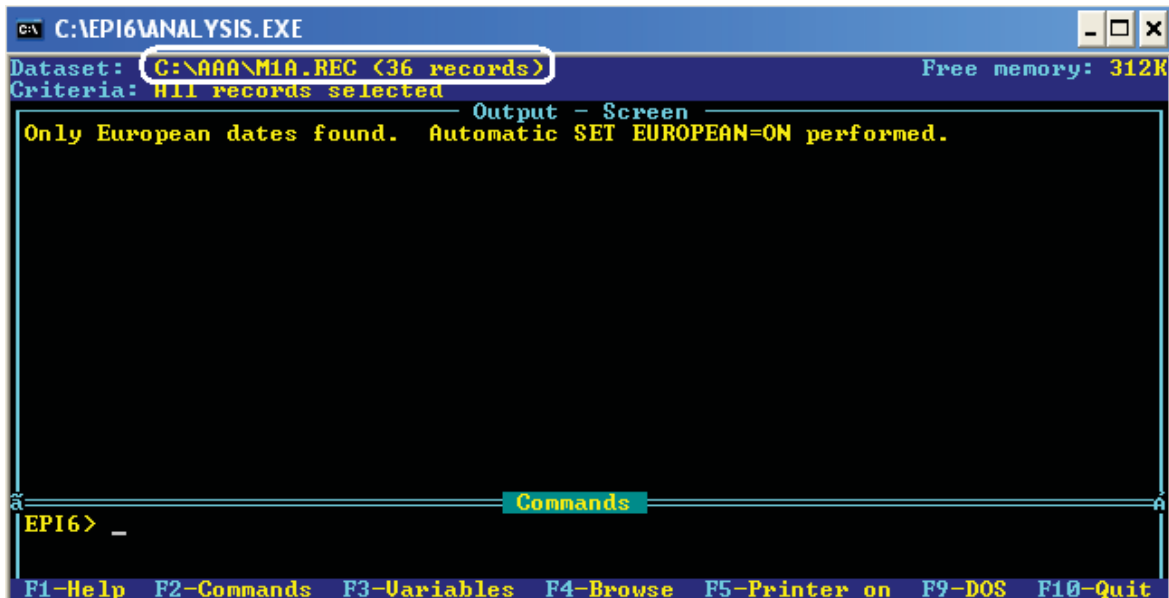


- Double click on the file **M1A.REC**:



A new window will appear and automatically stretch to full screen.

On the top of the screen, the following is displayed: “Dataset: C:\AAA\M1A.REC (36 records)”. This confirms that you have opened the file **M1A.REC** (located in “C:\AAA”) containing a total of 36 records.



This new window is divided in two main parts (circled in white in the picture below):

- the upper part (**Output – Screen**); and
- the lower part (**Commands**).

The screenshot shows a DOS-style window titled "C:\EPI6\ANALYSIS.EXE". The window content is as follows:

```

Dataset: C:\AAA\M1A.REC <36 records>      Free memory: 312K
Criteria: All records selected
Output - Screen
Only European dates found. Automatic SET EUROPEAN=ON performed.

EPI6> _
Commands
F1-Help  F2-Commands  F3-Variables  F4-Browse  F5-Printer on  F9-DOS  F10-Quit
  
```

In this image, the "Output - Screen" label and the "Commands" label are circled in white. The "Output - Screen" section contains the text "Only European dates found. Automatic SET EUROPEAN=ON performed." The "Commands" section contains the prompt "EPI6> \_".

The upper part will show the results ('output') of the execution of the commands that you will enter. As you type the command, this will be displayed in the lower part ("Commands"). The cursor is automatically placed in the "Commands" part, right after "EPI6 >".

- Type "run", which is the command to run a program (you can use either case letters or caps):

The screenshot shows the same "C:\EPI6\ANALYSIS.EXE" window. The content is as follows:

```

Dataset: C:\AAA\M1A.REC <36 records>      Free memory: 312K
Criteria: All records selected
Output - Screen
Only European dates found. Automatic SET EUROPEAN=ON performed.

EPI6> run
Commands
F1-Help  F2-Commands  F3-Variables  F4-Browse  F5-Printer on  F9-DOS  F10-Quit
  
```

In this image, the "run" command is circled in white in the "Commands" section. The "Output - Screen" section remains the same as in the previous screenshot.

- Press “Enter” to view the list of available program files;
- A small window opens inside the screen: move the cursor with the arrow keys to select the program file “M1A.PGM”:

```

C:\EPI6ANALYSIS.EXE
Dataset: C:\AAA\M1A.REC (36 records)      Free memory: 312K
Criteria: All records selected

Output - Screen
Only European dates found. Automatic SET EUROPEAN=ON performed.
.. \
cm.pgm
m1a.pgm
m2a.pgm
C:\AAA\*.PGM
mx.pgm
sample.pgm

Commands
EPI6> run

F1-Help F2-Commands F3-Variables F4-Browse F5-Printer on F9-DOS F10-Quit

```

- Press “Enter” to run the program.

The program runs very fast, taking a few seconds, and the message “Program processing complete” appears at the end of the process.

```

C:\EPI6.EXE
Dataset: C:\AAA\M1.REC (36 records)      Free memory: 146K
Criteria: All records selected           Time: 0.16 sec

Output - Screen
3032 030140170 82.4254326 77.9!
10/06/2009 241 29201/06/200812210.00037.2212 12 12 121211 1111 41 421122282811
?
112212212113034112 4 6122      2 211 122212142      12221102411221616122110102
?
0102 010124166 74.72230302230301133303088 0 088 0 0303022202088 0 02230303330
?
30223030200200100.0324366 88.5!
10/06/2009 544 282      42218.00037.3212 12 12 121211 1111 37 342222282812
?
1      2 4112 4 611 212 1 6 811 122212142      1122212241112 816122110102
?
01011010104142 73.222303033303022 030 030 030 0 032 0204420203330303330
?
3032 030140190 73.7244332 73.5!
File closed. <Automatic ROUTE SCREEN>

Commands
EPI6> run
Program processing complete.
EPI6>

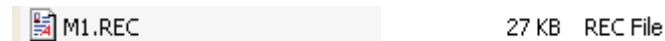
F1-Help F2-Commands F3-Variables F4-Browse F5-Printer on F9-DOS F10-Quit

```

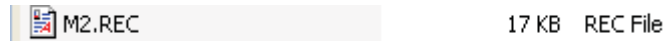
This program has assigned scores to clinical tasks and IMCI case management steps performed by each student for “Assessment” and “Classification” and generated the new, permanent file “M1.REC”. This new file contains these new data that can be used for the analysis.

- Press “**F10**” to close Epi6

The newly created data file **M1.REC** now appears in the folder “**AAA**”:



Repeat the same steps to calculate the scores for the IMCI case management steps of “Identification of treatment”, “Assessment and identification of feeding problems” and “Advice on fluids and feeding”. You will first double click on the file **M2A.REC** to open it and then run the program **M2A.PGM**. The newly created data file **M2.REC** will appear in the “**C:\AAA**” folder:

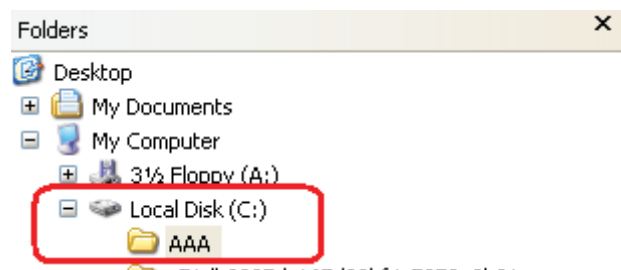


## Describing the characteristics of the sample of sick children

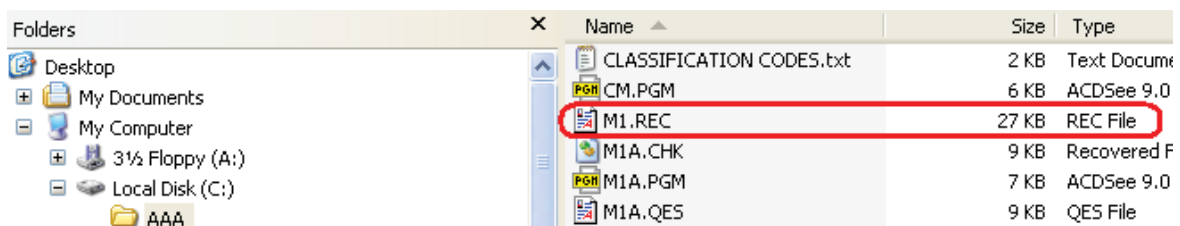
When presenting the findings, we would like to describe the characteristics of the sample of sick children who have been managed by the students, in terms of clinical conditions and their severity. This helps place the results in the right context. As the same child may sometimes be seen again by a different student to maximize the availability of conditions to which students are exposed on the day of the skill test, we will use here the term ‘exposures’ (or ‘cases’) instead of ‘children’. Information on the characteristics of the clinical ‘exposures’ helps give an idea of the difficulty of the skill test.

For this purpose, you will run the program “**SAMPLE.PGM**” on the new file “**M1.REC** as described here.

- Go to the folder “**AAA**” in the C: drive, where you have all the Epi6 files:



- Double click on the file **M1.REC** (that you have created by running the previous program “M1A.PGM”):



A new window will appear and automatically stretch to full screen.

On the top of the screen, the following is displayed: "**Dataset: C:\AAA\M1.REC (36 records)**". This confirms that you have opened the file **M1.REC** (located in "**C:\AAA**") containing a total of 36 records:

```

C:\> C:\EPI6\ANALYSIS.EXE
Dataset: C:\AAA\M1.REC (36 records)      Free memory: 313K
Criteria: All records selected
Output - Screen
  
```

- Type "**run**" with the keyboard, which is the Epi6 command to run a program (you can use either case letters or caps);

```

C:\> C:\EPI6\ANALYSIS.EXE
Dataset: C:\AAA\M1.REC (36 records)      Free memory: 313K
Criteria: All records selected
Output - Screen
Only European dates found. Automatic SET EUROPEAN=ON performed.

EPI6> run
  
```

Commands

F1-Help F2-Commands F3-Variables F4-Browse F5-Printer on F9-DOS F10-Quit

- You will need to locate the file "**SAMPLE.PGM**": press "**Enter**".

A small window opens inside the main screen, listing all the program files available.

- Move the cursor to select the program file "**SAMPLE.PGM**":

```

C:\> C:\EPI6\ANALYSIS.EXE
Dataset: C:\AAA\M1.REC (36 records)      Free memory: 313K
Criteria: All records selected
Output - Screen
Only European dates found. Automatic SET EUROPEAN=ON performed.

C:\AAA\*.PGM
.. \          m1a.pgm      my.pgm
cm.pgm       m2a.pgm      sample.pgm
  
```

- Press "**Enter**" to run the program "**SAMPLE.PGM**".



The program runs very fast and the message “**Program processing complete**” appears at the end of the process under the “**Commands**” section of the screen:

```

C:\EPI6\ANALYSIS.EXE
Dataset: C:\AAA\M1.REC (36 records)      Free memory: 264K
Criteria: All records selected
Output - SAMPLE.TXT

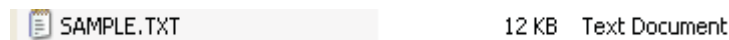
CLASSIFICATION OF CASES WITH MALNUTRITION
No records SELECTed
Selection cleared.

CLASSIFICATION OF CASES WITH ANAEMIA
Current selection: DA<3
DA      Freq  Percent  Cum.
-----|-----
2 ANAEMIA      12  100.0%  100.0%
-----|-----
Total          12  100.0%
Selection cleared.

Commands
EPI6> run
Program processing complete.
EPI6>
F1-Help  F2-Commands  F3-Variables  F4-Browse  F5-Printer on  F9-DOS  F10-Quit
  
```

- Press **F10** to exit Epi6.

The execution of this program has sent the output as a text file to the same folder which contains the other Epi6 files (**C:\AAA**) where you can now find the report file “**SAMPLE.TXT**”:



Being a text file, this file can be opened, viewed and printed with any computer.

Double click on the file name to open and view it.

The first item shown under the main title “**Characteristics of sample**” is “**AGE GROUPS**”:

### CHARACTERISTICS OF SAMPLE

Age groups		AGE GROUPS		
BAGEG		Freq	Percent	Cum.
< 12 MONTHS		24	66.7%	66.7%
OLDER		12	33.3%	100.0%
Total		36	100.0%	

Frequency: no. of cases seen in each age group

The table, with the variable name “**BAGEG**”, shows two age groups: “**< 12 MONTHS**” with a count of 24 exposures (shown under the “**Freq**” column) and “**OLDER**” with a count of 12 exposures. This means that in this skill test, 24 students (66.7%) managed a child less than 12 months old and the remaining 12 students (33.3%) managed a child aged 12 months up to 5 years old. The percentage values are also shown in the table (under the “**Percent**” column) and refer to the total displayed in the last row (“**Total**”: 36)

The second item shown is “**CASES WITH GENERAL DANGER SIGNS**”.

### CASES WITH GENERAL DANGER SIGNS

BGDS	Freq	Percent	Cum.
1 DANGER SIGNS	2	5.6%	5.6%
2 NO DANGER SIGNS	34	94.4%	100.0%
Total	36	100.0%	

This table shows that there were 2 cases (5.6%) with general danger signs (item “**1 DANGER SIGNS**”) and 34 (94.4%) with no general danger signs (item “**2 NO DANGER SIGNS**”).

Similarly, next table shows that the sample included 31 (86.1%) cases with cough and 5 (13.9%) with no cough:

### CASES WITH COUGH

DCOU	Freq	Percent	Cum.
COUGH	31	86.1%	86.1%
NO COUGH	5	13.9%	100.0%
Total	36	100.0%	

Next table, on “**CLASSIFICATIONS OF COUGH**”, shows the distribution of the classifications in the sample in relation to cough or difficult breathing. So, out of 36 cases, 3 had a classification of “**SEVERE PNEUMONIA**”, 7 had “**PNEUMONIA**”, 21 “**NO PNEUMONIA**” (3+7+21=31 cases with cough or difficult breathing) and the remaining 5 did not have cough or difficult breathing (item “**4 NO COUGH**”):

### CLASSIFICATIONS OF COUGH

FCOU	Freq	Percent	Cum.
1 SEVERE PNEUMONIA	3	8.3%	8.3%
2 PNEUMONIA	7	19.4%	27.8%
3 NO PNEUMONIA	21	58.3%	86.1%
4 NO COUGH	5	13.9%	100.0%
Total	36	100.0%	

The tables which follow in the file provide information on each main condition: e.g. the table on “**CASES WITH DIARRHOEA**” shows that there were 25 (69.4%) exposures with diarrhoea (with additional tables showing details for those with dehydration, persistent diarrhoea and dysentery), the table on “**CASES WITH THROAT PROBLEM**” shows that there were 17 (47.2%) exposures with a throat problem (with an additional table showing the distribution of classifications) and so on.

After those tables, the table on “**SEVERITY OF CONDITIONS**” shows that there were 4 cases (11.1%) with severe conditions (IMCI ‘pink row’ classification), 20 (55.6%) with moderate conditions (IMCI ‘yellow row’ classification) and 12 (33.3%) with mild conditions (IMCI ‘green row’ classification):

### SEVERITY OF CONDITIONS

FRANK	Freq	Percent	Cum.
1 SEVERE	4	11.1%	11.1%
2 MODERATE	20	55.6%	66.7%
3 MILD	12	33.3%	100.0%
Total	36	100.0%	

Following that is the table reproduced below which shows that 3 of the 36 cases had only 1 condition, 4 had 2 conditions present in the same child, 15 had 3, 7 had 4 and finally 7 had five.

### NUMBER OF CONDITIONS PRESENT IN THE CHILD WITH ONE SCORE FOR EACH CONDITION IRRESPECTIVE OF SEVERITY

MANY	Freq	Percent	Cum.
1	3	8.3%	8.3%
2	4	11.1%	19.4%
3	15	41.7%	61.1%
4	7	19.4%	80.6%
5	7	19.4%	100.0%
Total	36	100.0%	

The combination of the information on severity and number of conditions in this test suggests that this was a test of low moderate difficulty, given that one third of exposures were represented by mild conditions but two thirds had 3 or more conditions at the same time.

Under “**Additional details**”, further information is provided in the last set of tables for those interested in the classification of the cases by condition. For example, under ‘**CLASSIFICATION OF CASES WITH COUGH**’, the first of such tables, the report shows that 3 (9.7%) of the 31 cases with cough or difficult breathing had ‘**SEVERE PNEUMONIA**’, 7 (22.6%) had ‘**PNEUMONIA**’ and 21 (67.7%) had ‘**NO PNEUMONIA**’.

### ADDITIONAL DETAILS

#### CLASSIFICATIONS OF CASES WITH COUGH

Current selection: ECOU<4

FCOU	Freq	Percent	Cum.
1 SEVERE PNEUMONIA	3	9.7%	9.7%
2 PNEUMONIA	7	22.6%	32.3%
3 NO PNEUMONIA	21	67.7%	100.0%
Total	31	100.0%	

This is similar to the table presented earlier, but while the previous table referred to all the cases managed by the students (36), this table provides the breakdown only for those who had the condition (31 cases with cough or difficult breathing). This is why the percentage values differ between the two tables.

The Evaluation guide shows how all these results can be presented in a table in the section “Analysis and presentation of findings – Quantitative findings”.

### Percentage scores for assessment and classification

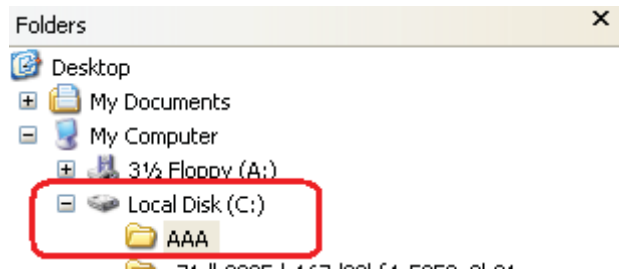
The key indicator of this analysis is the “**Case management percentage score**”, which is the proportion of students taking the test who obtained the “passing score” in case management, i.e. the agreed percentage of the maximum score allotted to the test. This is calculated in three steps, as described below:

1. First, you will calculate the percentage score for the steps of assessment and classification;
2. Next, you will calculate the percentage score for the steps of identification of treatment, assessment and identification of feeding problems and advice on fluids and feeding;
3. Finally, you will calculate the overall indicator of the percentage score for case management, based on 1 and 2 above.

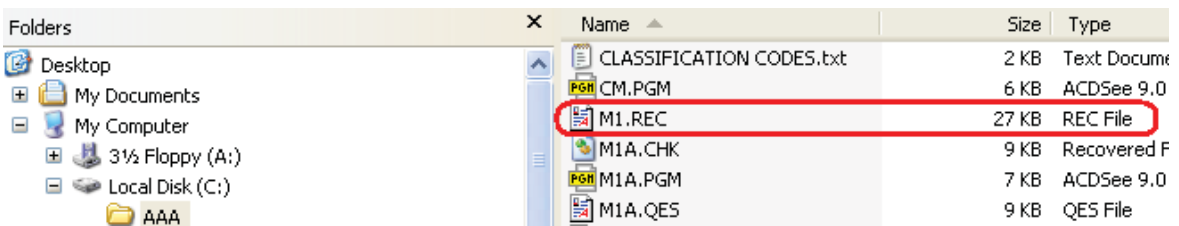
The first step is described in this section. To calculate the percentage scores for the assessment and classification steps of the IMCI case management process, you will run the program **CM.PGM** on the file **M1.REC**.

This is done similarly to what you have done to run the previous program “Sample.PGM” on the same file.

- Go to the folder “AAA” in the C: drive, where you have all the Epi6 files:



- Double click on the file **M1.REC**:

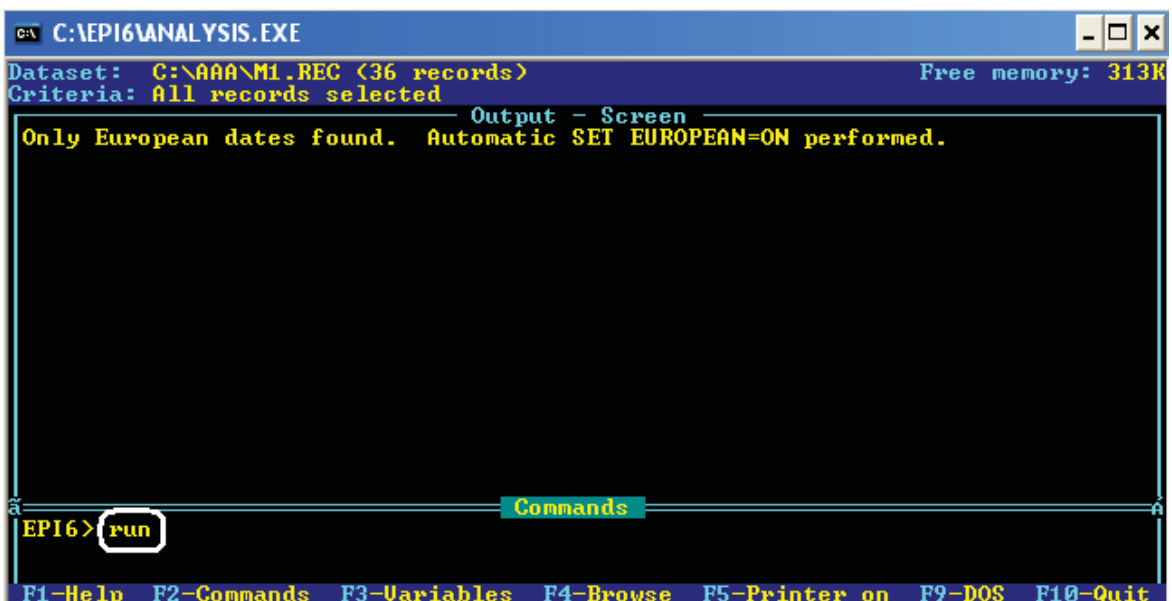


A new window will appear and automatically stretch to full screen.

On the top of the screen, the following is displayed: “Dataset: C:\AAA\M1.REC (36 records)”. This confirms that you have opened the file **M1.REC** (located in “C:\AAA”) containing a total of 36 records:



- Type “run” with the keyboard:



- Press “Enter” to open the list of all the available program files;
- Move the cursor to select the program file “CM.PGM”:

```

C:\> C:\EPI6\ANALYSIS.EXE
Dataset: C:\AAA\M1.REC (36 records)      Free memory: 313K
Criteria: All records selected
Output - Screen
Only European dates found. Automatic SET EUROPEAN=ON performed.
-----
C:\AAA\*.PGM
-----
m1a.pgm
m2a.pgm
cm.pgm
mx.pgm
sample.pgm
  
```

- Press “Enter” to run the program.


The program runs very fast and the message “Program processing complete” appears at the end of the process:

```

C:\> C:\EPI6\ANALYSIS.EXE
Dataset: C:\AAA\M1.REC (36 records)      Free memory: 273K
Criteria: All records selected           Time: 0.05 sec
Output - CM.TXT
Division by zero, result set to 0
Division by zero, result set to 0
Division by zero, result set to 0
Division by zero, result set to 0
Division by zero, result set to 0
Division by zero, result set to 0
-----
AEARPER | Freq  Percent  Cum.
-----|-----
 0.0    |   13   36.1%   36.1%
 75.0   |    3    8.3%   44.4%
 81.8   |    1    2.8%   47.2%
100.0   |   19   52.8%  100.0%
-----|-----
 Total  |   36  100.0%
-----
Commands
EPI6> run
Program processing complete.
EPI6>
F1-Help  F2-Commands  F3-Variables  F4-Browse  F5-Printer on  F9-DOS  F10-Quit
  
```

- Press **F10** to exit Epi6.

The execution of this program has sent the output as a text file to the same folder which contains the M1.REC file and all other Epi6 files (C:\AAA), where you can now find also this newly generated report file “CM.TXT”:

 CM.TXT 16 KB Text Document

Being a text file, this file can be opened, viewed and printed with any computer.

Double click on the file name to open and view it.

The first table shows the “PERCENTAGE SCORE FOR ASSESSMENT” obtained by the students, arranged from the lowest to the highest score.

## PERCENTAGE SCORE FOR ASSESSMENT

Percentage scores obtained by students		ASSPER	Freq	Percent	Cum.
Lowest score ⇒	40.7		1	2.8%	2.8%
	48.5		1	2.8%	5.6%
	50.0		1	2.8%	8.3%
	52.1		1	2.8%	11.1%
	52.9		1	2.8%	13.9%
	55.7		1	2.8%	16.7%
	57.1		1	2.8%	19.4%
	60.3		1	2.8%	22.2%
	62.3		1	2.8%	25.0%
	62.7		1	2.8%	27.8%
	62.8		1	2.8%	30.6%
	63.9		1	2.8%	33.3%
	64.9		1	2.8%	36.1%
	66.3		1	2.8%	38.9%
	67.3		1	2.8%	41.7%
	67.6		1	2.8%	44.4%
	67.9		1	2.8%	47.2%
	70.2		1	2.8%	50.0%
	70.5		1	2.8%	52.8%
	73.1		1	2.8%	55.6%
	73.2		1	2.8%	58.3%
	73.5		1	2.8%	61.1%
	74.7		1	2.8%	63.9%
	75.8		1	2.8%	66.7%
	78.1		1	2.8%	69.4%
	80.6		1	2.8%	72.2%
	80.8		1	2.8%	75.0%
	81.0		1	2.8%	77.8%
	83.1		1	2.8%	80.6%
	<b>84.6</b>		<b>1</b>	<b>2.8%</b>	<b>83.3%</b>
	<b>85.2</b>		<b>1</b>	<b>2.8%</b>	<b>86.1%</b>
	<b>86.4</b>		<b>1</b>	<b>2.8%</b>	<b>88.9%</b>
	<b>93.2</b>		<b>1</b>	<b>2.8%</b>	<b>91.7%</b>
	<b>96.3</b>		<b>1</b>	<b>2.8%</b>	<b>94.4%</b>
Highest score ⇒	<b>97.7</b>		<b>2</b>	<b>5.6%</b>	<b>100.0%</b>
Total			36	100.0%	

Frequency: no. of students who obtained the percentage score shown to the left

85% cut-off level: 6 students with a score of 85% or more

For example, one of the 36 students obtained 40.7% of the total score, which is the lowest score obtained in this test. Another student obtained 48.5%, 1 student 50% and so on; 2 students obtained 97.7% (the highest score obtained in this test). No student obtained 100%, meaning no student performed all the required assessment tasks correctly. If we had set a cut-off level of 85% for student performance on assessment (see items in bold above), we would now state that 6 of the 36 students obtained a percentage score of 85% or more in performing assessment.

Similarly, the next table shows the percentage score obtained by the students for classification.

### PERCENTAGE SCORE FOR CLASSIFICATION

CLAPER | Freq Percent Cum.

CLAPER	Freq	Percent	Cum.
35.3	4	11.1%	11.1%
35.7	1	2.8%	13.9%
42.1	1	2.8%	16.7%
47.1	2	5.6%	22.2%
52.9	1	2.8%	25.0%
55.0	1	2.8%	27.8%
57.9	1	2.8%	30.6%
68.8	2	5.6%	36.1%
70.0	3	8.3%	44.4%
70.6	2	5.6%	50.0%
73.7	1	2.8%	52.8%
82.4	3	8.3%	61.1%
<b>85.0</b>	<b>1</b>	<b>2.8%</b>	<b>63.9%</b>
<b>86.4</b>	<b>1</b>	<b>2.8%</b>	<b>66.7%</b>
<b>90.9</b>	<b>1</b>	<b>2.8%</b>	<b>69.4%</b>
<b>100.0</b>	<b>11</b>	<b>30.6%</b>	<b>100.0%</b>
Total	36	100.0%	

85% cut-off level: 14 students with a score of 85% or more

In this test, 11 out of the 36 students obtained a 100% score, meaning they classified the child correctly for all the conditions present. If we had set the cut-off level of 85% for student performance on classification, we would now state that 14 of the 36 students obtained a percentage score of 85% or more in classifying the child's conditions.



Finally, the third table shows the percentage score obtained by the students for both assessment and classification.

### PERCENTAGE SCORE FOR ASSESSMENT AND CLASSIFICATION

ASSCLAPER	Freq	Percent	Cum.
41.5	1	2.8%	2.8%
42.2	1	2.8%	5.6%
43.0	1	2.8%	8.3%
43.1	1	2.8%	11.1%
48.6	1	2.8%	13.9%
50.2	1	2.8%	16.7%
58.9	1	2.8%	19.4%
59.5	1	2.8%	22.2%
60.7	1	2.8%	25.0%
60.8	1	2.8%	27.8%
61.4	1	2.8%	30.6%
63.3	1	2.8%	33.3%
66.0	1	2.8%	36.1%
66.7	1	2.8%	38.9%
68.4	1	2.8%	41.7%
72.8	1	2.8%	44.4%
73.5	1	2.8%	47.2%
74.1	1	2.8%	50.0%
74.7	1	2.8%	52.8%
76.0	1	2.8%	55.6%
76.3	1	2.8%	58.3%
76.6	1	2.8%	61.1%
77.9	1	2.8%	63.9%
78.4	1	2.8%	66.7%
79.7	1	2.8%	69.4%
84.7	1	2.8%	72.2%
<b>86.5</b>	<b>1</b>	<b>2.8%</b>	<b>75.0%</b>
<b>88.0</b>	<b>1</b>	<b>2.8%</b>	<b>77.8%</b>
<b>88.5</b>	<b>1</b>	<b>2.8%</b>	<b>80.6%</b>
<b>91.4</b>	<b>1</b>	<b>2.8%</b>	<b>83.3%</b>
<b>92.3</b>	<b>1</b>	<b>2.8%</b>	<b>86.1%</b>
<b>92.6</b>	<b>1</b>	<b>2.8%</b>	<b>88.9%</b>
<b>94.6</b>	<b>1</b>	<b>2.8%</b>	<b>91.7%</b>
<b>98.2</b>	<b>1</b>	<b>2.8%</b>	<b>94.4%</b>
<b>99.0</b>	<b>2</b>	<b>5.6%</b>	<b>100.0%</b>
Total	36	100.0%	

85% cut-off level: 10 students with a score of 85% or more

If we had set a cut-off level of 85% for student performance on assessment and classification, we would now state that 10 of the 36 students obtained a percentage score of 85% or more in assessing and classifying a sick child.

After the tables presenting the results on the overall indicators on assessment and classification, the next tables of the report show the details of the assessment of each condition. For example, under “**ASSESSMENT OF INDIVIDUAL CONDITIONS**”, the first table (“**Danger signs percentage score**”) shows the percentage scores obtained by students for the assessment of general danger signs. This task must be performed in all cases, so the denominator is all the 36 students observed. As stated in the title, a score of 100% means all general danger signs assessed correctly. “ADSPER” is the variable name given to this analysis item which refers to the percentage score for general danger signs.

**ASSESSMENT OF INDIVIDUAL CONDITIONS**

A SCORE OF 100% MEANS CONDITION  
CORRECTLY ASSESSED

**DANGER SIGNS PERCENTAGE SCORE (ADSPER)**

ADSPER	Freq	Percent	Cum.
0.0	2	5.6%	5.6%
23.5	1	2.8%	8.3%
54.5	2	5.6%	13.9%
66.7	6	16.7%	30.6%
70.6	2	5.6%	36.1%
77.3	1	2.8%	38.9%
100.0	22	61.1%	100.0%
Total	36	100.0%	

So, 2 of the 36 students obtained 0% (i.e. did not assess the child for general danger signs at all), one obtained 23.5%, two obtained 54.5%, and so on. As 22 students obtained 100%, this means that 22 (61.1%) of the 36 students observed correctly assessed the child for all the general danger signs.

The next table refers only to those students who assessed a child with cough or difficult breathing. So, the denominator is the 31 students who assessed sick children with cough or difficult breathing in the test.

**PERCENTAGE SCORE  
FOR THOSE WITH COUGH ONLY**

Current selection: COUGHMO=1

ACOPER	Freq	Percent	Cum.
35.7	1	3.2%	3.2%
42.9	1	3.2%	6.5%
50.0	3	9.7%	16.1%
71.4	2	6.5%	22.6%
78.6	1	3.2%	25.8%
92.9	1	3.2%	29.0%
100.0	22	71.0%	100.0%
Total	31	100.0%	

The table shows that 22 (71%) of the 31 students who managed a child with cough or difficult breathing performed all the assessment tasks for children with this problem correctly.

The next table shows that 6 (24%) of the 25 students who managed a child with diarrhoea performed all the assessment tasks for diarrhoea correctly:

### PERCENTAGE SCORE FOR THOSE WITH DIARRHOEA ONLY

Current selection: DIARMO=1

ADIAPER	Freq	Percent	Cum.
64.7	4	16.0%	16.0%
70.6	1	4.0%	20.0%
76.5	4	16.0%	36.0%
88.2	10	40.0%	76.0%
100.0	6	24.0%	100.0%
Total	25	100.0%	

The tables which follow in the report provide similar information on the assessment of children with throat problem, fever and ear problem, the assessment of all children for nutritional status and anaemia and immunization status, and the assessment of vitamin A status for those eligible.

The next part of the report provides similar information on the classification of individual conditions. So, the table below on “**Classification of general danger signs – Danger signs percentage score**” shows that 24 (66.7%) of the 36 students obtained a percentage score of 100% and, thus, classified the child correctly for general danger signs.

### CLASSIFICATION OF INDIVIDUAL CONDITIONS

A SCORE OF 100% MEANS CONDITION  
CORRECTLY CLASSIFIED

### CLASSIFICATION OF GENERAL DANGER SIGNS

#### DANGER SIGNS PERCENTAGE SCORE (VDSPER)

Current selection: EGDS<3

VDSPER	Freq	Percent	Cum.
0.0	12	33.3%	33.3%
100.0	24	66.7%	100.0%
Total	36	100.0%	

The next table refers to the classification of children with cough or difficult breathing (“**Classification of cough – Cough percentage score**”): 23 (74.2%) of the 31 students who assessed a child with cough or difficult breathing classified the child correctly for this problem.

**CLASSIFICATION OF COUGH****COUGH PERCENTAGE SCORE (VCOUPER)**

Current selection: ECOU&lt;7

VCOUPER | Freq Percent Cum.

VCOUPER	Freq	Percent	Cum.
0.0	8	25.8%	25.8%
100.0	23	74.2%	100.0%
Total	31	100.0%	

The tables which follow in the report provide information on classification of children with diarrhoea—and, among them, of dehydration, persistent diarrhoea and dysentery—, throat problem, ear problem, fever, nutritional status and anaemia.

The last part of the report provides additional details for those interested in student performance in the assessment of each condition as relevant to the child assessed, whether the child had or did not have the condition. In fact, the IMCI guidelines require that the student ask about the presence of each of the main symptoms (cough or difficult breathing, diarrhoea, fever, sore throat, ear problem) in each child, so this task is relevant to each child; if the child has any of those symptoms, then the student should enter the related “box” and perform all the required tasks to further assess each condition present.

For example, the table below shows that 25 (69.4%) of the 36 students correctly performed the assessment tasks in relation to the main symptom of cough or difficult breathing (e.g. they asked about the presence of cough or difficult breathing and, if present, assessed the child for this main symptom). For more information about the indicators, their definitions and meaning refer to the Evaluation guide.

**ADDITIONAL DETAILS**

**PERFORMANCE RELATED TO ALL ASSESSMENT TASKS  
IN ANY SICK CHILD  
DENOMINATOR IS ALL STUDENTS**

**COUGH PERCENTAGE SCORE (ACOPER)  
FOR ALL**

ACOPER | Freq Percent Cum.

ACOPER	Freq	Percent	Cum.
0.0	1	2.8%	2.8%
35.7	1	2.8%	5.6%
42.9	1	2.8%	8.3%
50.0	4	11.1%	19.4%
71.4	2	5.6%	25.0%
78.6	1	2.8%	27.8%
92.9	1	2.8%	30.6%
100.0	25	69.4%	100.0%
Total	36	100.0%	

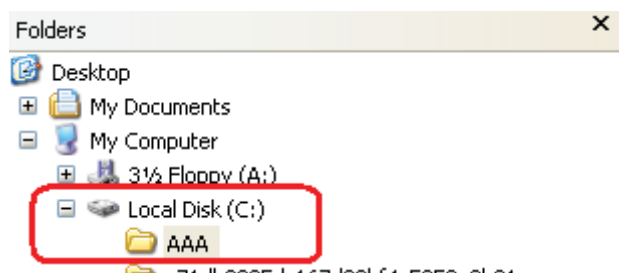
## Analysis of individual assessment tasks

Another program produces information on student performance for each assessment task. This enables understanding about which tasks students had more problems with and, in this way, provides useful feedback information to teachers.

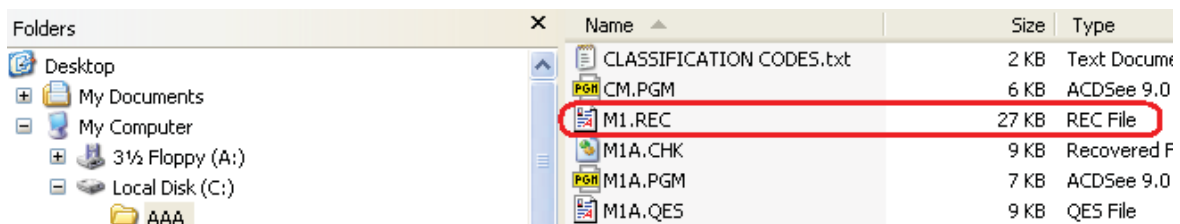
To produce this report, you will run the program “**MX.PGM**” on the file **M1.REC**.

This is done similarly to what you have done to run the previous programs, “**SAMPLE.PGM**” and “**CM.PGM**”, on the same file.

- Go to the folder “**AAA**” in the C: drive, where you have all the Epi6 files:



- Double click on the file **M1.REC**:



A new window will appear and automatically stretch to full screen.

On top of the screen, the following is displayed: “**Dataset: C:\AAA\M1.REC (36 records)**”. This confirms that you have opened the file **M1.REC** (located in “**C:\AAA**”) containing a total of 36 records:



- Type “run” with the keyboard:

```

C:\EPI6\ANALYSIS.EXE
Dataset: C:\AAA\M1.REC (36 records)      Free memory: 313K
Criteria: All records selected
Output - Screen
Only European dates found. Automatic SET EUROPEAN=ON performed.

EPI6> run
  
```

Commands

F1-Help F2-Commands F3-Variables F4-Browse F5-Printer on F9-DOS F10-Quit

- Press “Enter” to open the list of available programs;
- Move the cursor to select the program file “MX.PGM”:

```

C:\EPI6\ANALYSIS.EXE
Dataset: C:\AAA\M1.REC (36 records)      Free memory: 313K
Criteria: All records selected
Output - Screen
Getting input from C:\EPI6\CONFIG.EPI
N1 C:\AAA\*.PGM
N  ..\      m1a.pgm  mx.pgm  score.pgm
O  cm.pgm   m2a.pgm  sample.pgm  temp.pgm
E
=====> run
  
```

- Press “Enter” to run the program.

The program runs very fast and the message **Program processing complete** appears at the end of the process:

The screenshot shows a DOS-style window titled "C:\EPI6\ANALYSIS.EXE". The window content includes:

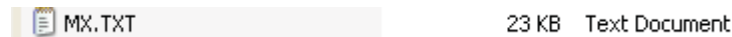
- Dataset: C:\AAA\M1.REC (36 records)
- Criteria: All records selected
- Free memory: 252K
- Time: 0.00 sec
- Output - MX.TXT
- A table with columns: Total, 4, 7, 11. Below the values are percentages: 36.4%, 63.6%.
- Selection cleared.
- ASKS ABOUT OTHER PROBLEMS
- A table with columns: PROB, Freq, Percent, Cum.
 

PROB	Freq	Percent	Cum.
1	14	38.9%	38.9%
2	22	61.1%	100.0%
Total	36	100.0%	
- Commands section showing:
 

```
EPI6> run
Program processing complete.
EPI6>
```
- Footer: F1-Help F2-Commands F3-Variables F4-Browse F5-Printer on F9-DOS F10-Quit

- Press **F10** to exit Epi6.

The execution of this program has sent the output as a text file to the same folder which contains the M1.REC file and all other Epi6 files (C:\AAA), where you can now see also this newly generated report file **"MX.txt"**:



Being a text file, this file can be opened, viewed and printed with any computer.

Double click on the file name to open and view it.

The first series of tables refers to students' checking each of the general danger signs properly ("**General danger signs checked properly**"), namely ability to drink, vomiting everything, history of convulsions or convulsing now and lethargy if child sleepy. At the end, there is a summary table for students' checking for all these signs.

### DETAILS BY INDIVIDUAL ASSESSMENT TASK UNLESS OTHERWISE STATED 1=YES 2=NO 8=NOT APPLICABLE

#### GENERAL DANGER SIGNS CHECKED PROPERLY

##### ABLE TO DRINK (TDS0)

TDS0	Freq	Percent	Cum.
1	30	83.3%	83.3%
2	6	16.7%	100.0%
Total	36	100.0%	

So, 30 (83.3%) of the 36 students in the test checked for ability to drink correctly (code "1"=Yes).

### VOMITING EVERYTHING (TDS1)

TDS1	Freq	Percent	Cum.
1	30	83.3%	83.3%
2	6	16.7%	100.0%
Total	36	100.0%	

The same number of students (30) checked whether the child had the general danger sign “vomiting everything”.

### CONVULSIONS

CON	Freq	Percent	Cum.
1	28	77.8%	77.8%
2	8	22.2%	100.0%
Total	36	100.0%	

28 students (77.8%) checked whether the child had a history of convulsions related to this episode of illness or had convulsions at the time of the examination.

### LETHARGY IF CHILD SLEEPY

TDS2	Freq	Percent	Cum.
1	2	5.6%	5.6%
2	2	5.6%	11.1%
8	32	88.9%	100.0%
Total	36	100.0%	

Two students checked whether a child who was sleepy was actually lethargic (code “1”=**Yes**). Two other students who saw a child who was sleepy at the time of the examination, did not check for the sign (code “2”=**No**). The third code in the table, code “8” (“**not applicable**”), refers to the 32 children who were awake at the time of the examination and in whom, therefore, lethargy did not need to be checked. So, 2 of the 4 students who assessed a child who was sleepy checked for lethargy.



**ALL GDS CHECKED PROPERLY (TDS)**

TDS	Freq	Percent	Cum.
1	22	61.1%	61.1%
2	14	38.9%	100.0%
Total	36	100.0%	

Overall, 22 (61.1%) of the 36 students checked for all the relevant general danger signs in the child they managed. This is the same number that was shown in the table on “**ASSESSMENT OF INDIVIDUAL CONDITIONS - DANGER SIGNS PERCENTAGE SCORE**” in the previous report (**CM.TXT**).

Similarly, the report in the “**MX.TXT**” file provides details about each other assessment task performed by the students.

**Case management percentage score  
and percentage scores for identification of treatment, assessment and identification of  
feeding problems, and advice on fluids and feeding**

---

If the teaching program includes only assessment and classification of a sick child, the evaluation will look only at these steps: the overall proxy indicator for student case management skills will in this case be the percentage score for assessment and classification, as described before (**CM.TXT**). All the data will have been entered and stored only in the data file “**M1A.rec**”. There will be no data file “**M2A.REC**”.

If the teaching program covers also the other steps of case management (i.e. “Identification of treatment”, “Identification of feeding problems” and “Advice on fluids and feeding”), the related data will have been entered and stored in file “**M2A.REC**” (as you practised earlier when entering the data for student 45) and you will have run the program “**M2A.PGM**” on the file “**M2A.REC**” to generate the file “**M2.REC**” (as described earlier under “Scoring tasks and steps”). You will need then to carry out a few more steps, as described below, to combine all the indicators into one overall “case management percentage score” indicator and generate the final report.

The following steps will generate an intermediate file containing the results on the percentage scores on treatment, feeding and advice on home care:

- double click on the file “**M2.REC**” that you have just obtained as described above;

- type **run** and press “Enter” to view the list of available programs:

```

Output - Screen
-----
C:\AAA\*.PGM
.. \      m1a.pgm      mx.pgm      score.pgm
cm.pgm    m2a.pgm      sample.pgm  temp.pgm
-----
EPI6> run
  
```

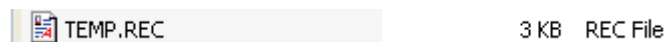
- select “**TEMP.PGM**” and press “Enter”. The program runs fast and, once finished, shows the message “**Programme processing complete**”:

```

Commands
-----
EPI6> run
Programme processing complete.
EPI6>
F1-Help F2-Commands F3-Variables F4-Browse F5-Printer on F9-DOS F10-Quit
  
```

- press **F10** to exit Epi6.

A new file has been generated, called “**TEMP.REC**” (which is located in the “**C:\AAA**” folder):



- Next, double click on the file “**M1.REC**”;
- Type **RELATE ID** and press “Enter” to view the list of available data files (\*.REC):

```

Output - Screen
-----
Getting input from C:\EPI6\CONFIG.EPI
C:\AAA\*.REC
.. \      m1a.rec      m2a.rec
m1.rec    m2.rec      temp.rec
-----
=====> RELATE ID
-----
Programme processing complete.
EPI6> RELATE ID
F1-Help F2-Commands F3-Variables F4-Browse F5-Printer on F9-DOS F10-Quit
  
```

- select the file “**TEMP.REC**” and press “**Enter**” to link the student records of file **M1.REC** to the same student records of file “**TEMP.REC**” through the student ID code into one merged working file;
- type **run** and press “**Enter**” to view the list of available programs (\*.PGM):

```

Output - Screen
Getting input from C:\EPI6\CONFIG.EPI
C:\AAA\*.PGM
.. \      m1a.pgm      score.pgm
cm.pgm    m2a.pgm      mx.pgm
          sample.pgm
          temp.pgm

=====> RELATE ID
=====> RUN

Commands
EPI6> RELATE ID
EPI6> RUN
F1-Help  F2-Commands  F3-Variables  F4-Browse  F5-Printer on  F9-DOS  F10-Quit

```

- select “**SCORE.PGM**” and press “**Enter**” ”; the program runs fast and, once finished, shows the message “**Programme processing complete**”:


```

Commands
EPI6> run
Programme processing complete.
EPI6>
F1-Help  F2-Commands  F3-Variables  F4-Browse  F5-Printer on  F9-DOS  F10-Quit

```

- Press **F10** to exit Epi6.

A new report file has been generated, called “**SCORE.TXT**” (which is located in **C:\AAA** folder):

 SCORE.TXT 6 KB Text Document

Double click on this file to view the report. It will show the percentage scores obtained by the students for CASE MANAGEMENT, ASSESSMENT, CLASSIFICATION, TREATMENT, HOME CARE and FEEDING (the latter only for those students who have managed cases with no severe classification and less than 2 years old). The tables are read as explained earlier in relation to the tables of the report **CM.TXT** (assessment and classification percentage scores).

For example, here is the “Case management percentage score” table:

### CASE MANAGEMENT PERCENTAGE SCORE

SCOREPER	Freq	Percent	Cum.
34.6	1	2.8%	2.8%
37.5	1	2.8%	5.6%
41.7	1	2.8%	8.3%
45.9	1	2.8%	11.1%
48.8	1	2.8%	13.9%
49.9	1	2.8%	16.7%
54.0	1	2.8%	19.4%
54.5	1	2.8%	22.2%
55.5	1	2.8%	25.0%
56.6	1	2.8%	27.8%
56.8	1	2.8%	30.6%
59.8	1	2.8%	33.3%
61.9	1	2.8%	36.1%
62.2	1	2.8%	38.9%
62.4	1	2.8%	41.7%
64.2	1	2.8%	44.4%
65.3	1	2.8%	47.2%
67.2	1	2.8%	50.0%
70.7	1	2.8%	52.8%
74.1	1	2.8%	55.6%
76.8	1	2.8%	58.3%
77.7	1	2.8%	61.1%
78.2	1	2.8%	63.9%
79.3	1	2.8%	66.7%
81.1	1	2.8%	69.4%
81.5	1	2.8%	72.2%
82.5	1	2.8%	75.0%
<b>86.9</b>	<b>1</b>	<b>2.8%</b>	<b>77.8%</b>
<b>88.4</b>	<b>1</b>	<b>2.8%</b>	<b>80.6%</b>
<b>89.3</b>	<b>1</b>	<b>2.8%</b>	<b>83.3%</b>
<b>89.7</b>	<b>1</b>	<b>2.8%</b>	<b>86.1%</b>
<b>93.2</b>	<b>1</b>	<b>2.8%</b>	<b>88.9%</b>
<b>94.0</b>	<b>1</b>	<b>2.8%</b>	<b>91.7%</b>
<b>98.5</b>	<b>1</b>	<b>2.8%</b>	<b>94.4%</b>
<b>99.2</b>	<b>1</b>	<b>2.8%</b>	<b>97.2%</b>
<b>99.2</b>	<b>1</b>	<b>2.8%</b>	<b>100.0%</b>
Total	36	100.0%	

If we had set a cut-off level of 85% for student performance on case management, we would now state that 9 of the 36 students obtained a percentage score of 85% or more in the management of a sick child.

## Reading Epi6 data files in EPIINFO™ (for Windows)

The data files (\*.rec) of Epi6 can be imported (“read”) in Epiinfo™ (for Windows) and saved in many other formats which make it easy to import them in other programs if those analysing the data are more familiar with them.

Epi Info™ (for Windows) can be downloaded from the CDC web site at:

<http://www.cdc.gov/epiinfo/downloads.htm> (accessed on 10 May 2010):

The screenshot shows the CDC website's 'Epi Info™ Downloads' page. At the top, there's a navigation bar with 'CDC Home', 'Search', and 'Health Topics A-Z'. Below that, the CDC logo and 'SAFER • HEALTHIER • PEOPLE' slogan are visible. The main heading is 'Epi Info™ Downloads'. A text block explains that users can download and install Epi Info™ for free, and offers CD packaging labels for those who plan to distribute the software. There are two main download options: 'Epi Info™ Full Download' with a 'Download' button and '(Read Me)' link, and 'CD Packaging' with a 'Download' button. A '100% CLEAN' badge from Softpedia is also present. On the right, a 'Contents' sidebar lists links for 'Downloads' (Epi Info™, Maps), 'User Support' (Installation, Tutorials updated, User Forum, Registration), and 'Resources'. A sidebar on the left contains links to '8-City Enhanced Terrorism Surveillance Project: Resource Materials', 'Downloads', 'Epi Info™', 'National Notifiable Disease Surveillance System', and 'Data Systems'.

The web site provides clear instructions to download and install the program.

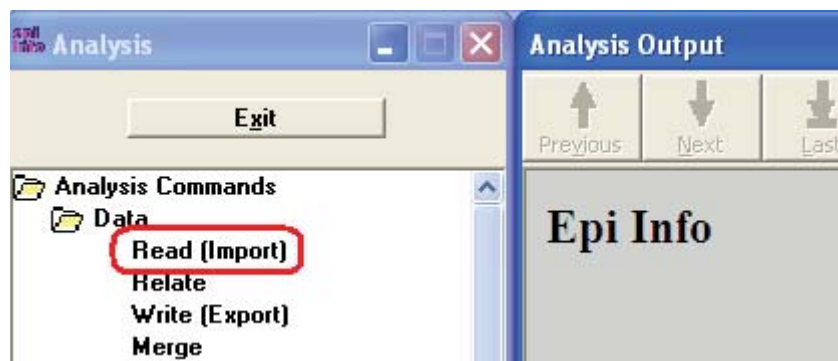
- After installation, double click on the program icon to launch it:



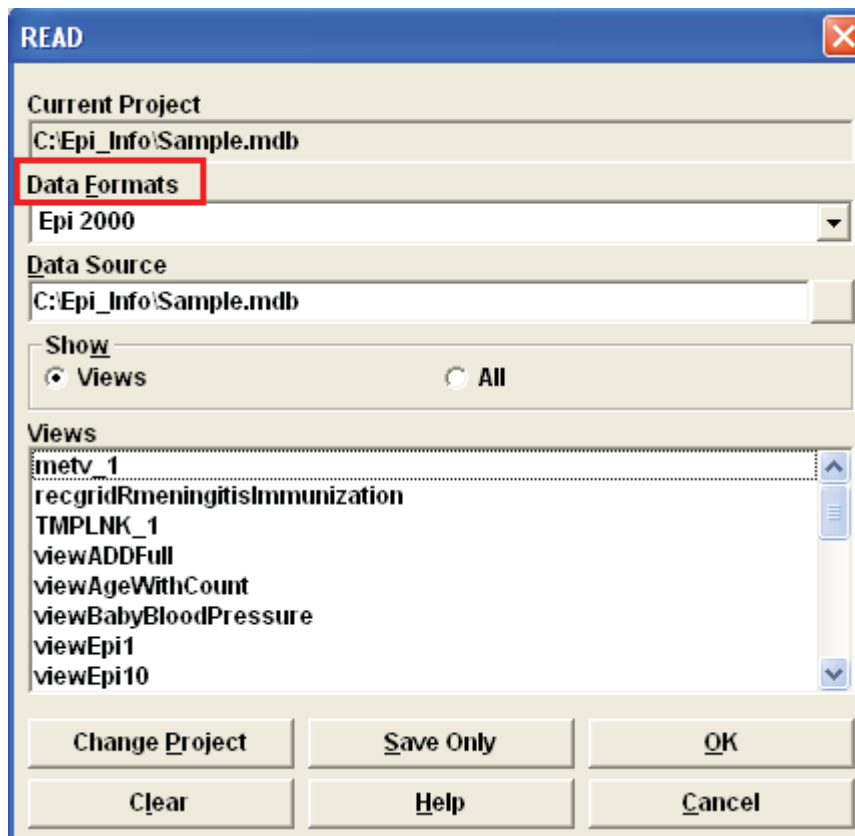
The menu page appears: click on “Analyze Data”:



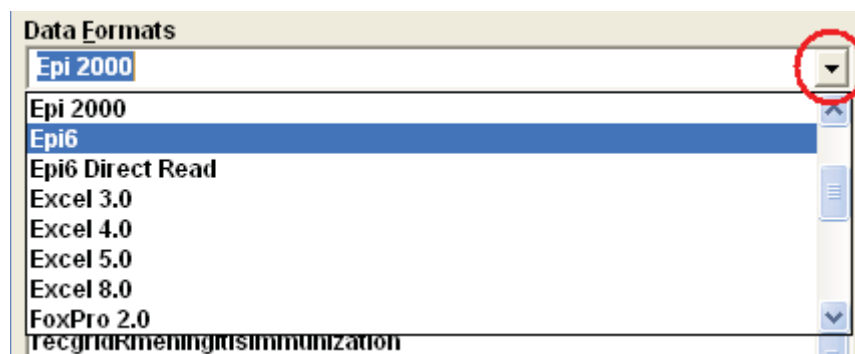
- On the left menu, on top, click on “Read (Import)”:



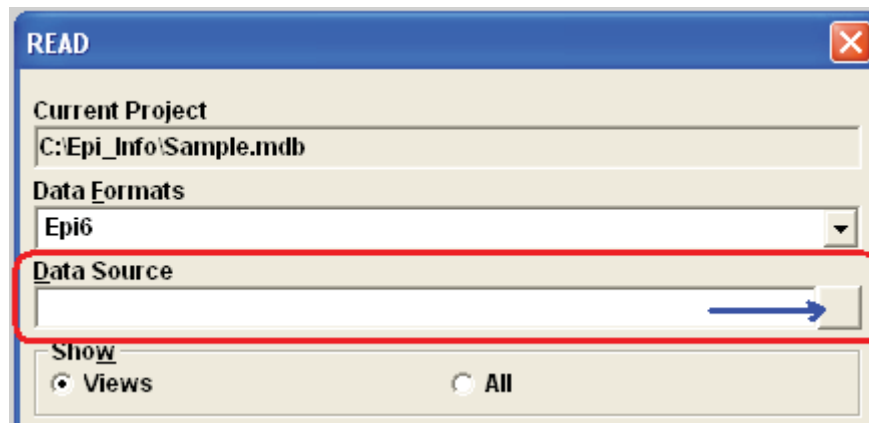
- The following window is displayed:



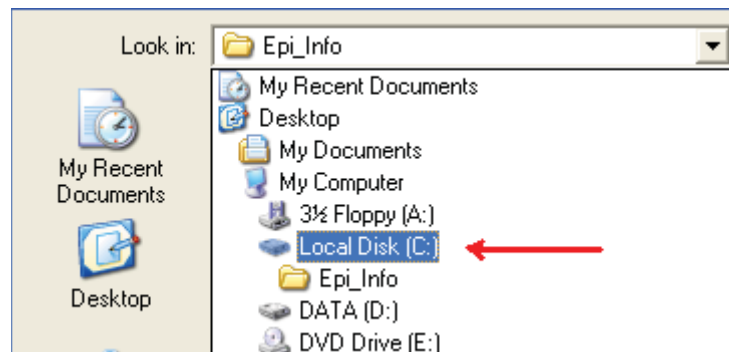
- In the section on “Data Formats” (circled in red above), click on the drop down list and select “Epi6”:



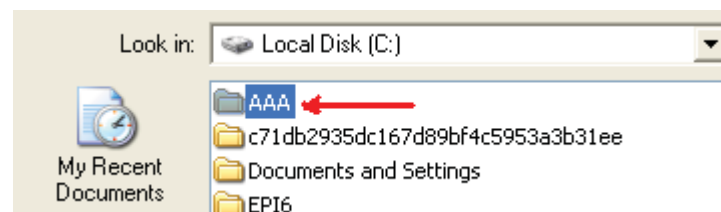
- Next, in the “**Data Source**” section, click on the small box to the right (see blue arrow in the picture below) to find the folder where the Epi6 files are. We placed them under “**C:\AAA**”:



- In the new window which opens, select drive “**Local Disk (C:)**”

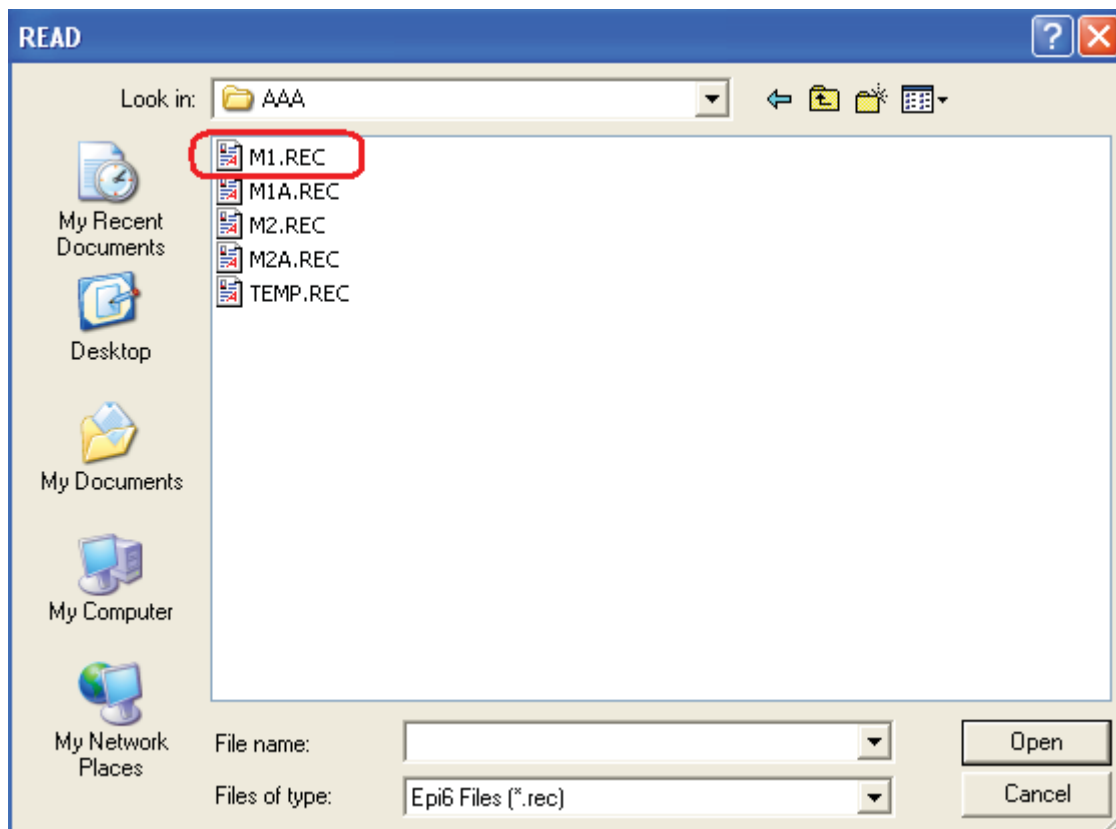


- Next, select and double click on the folder “**AAA**” where the Epi6 data files are:

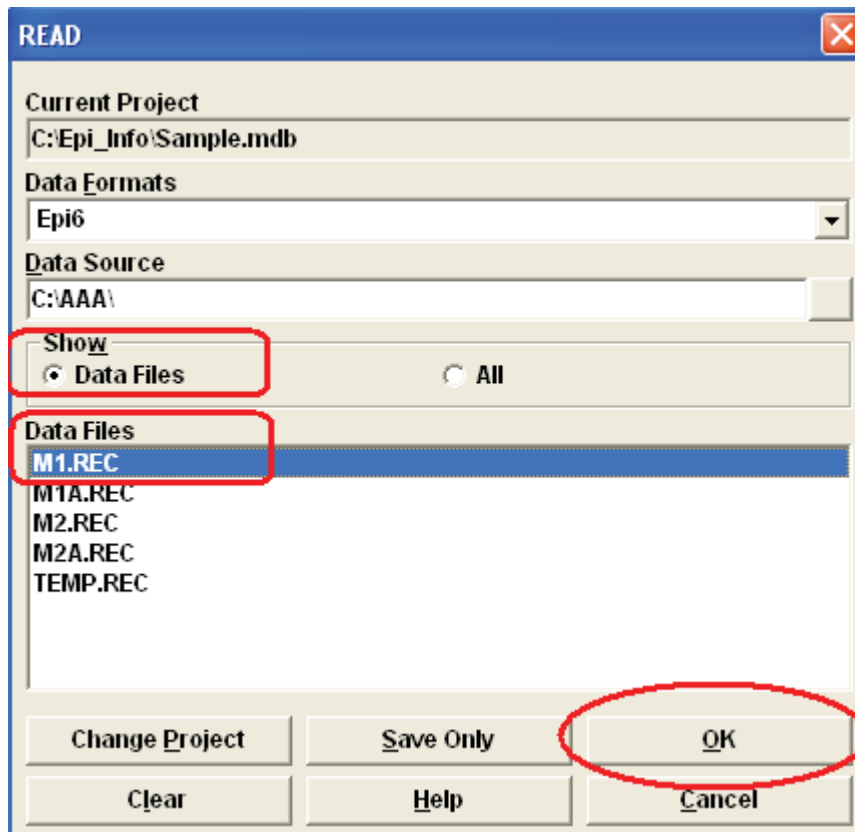




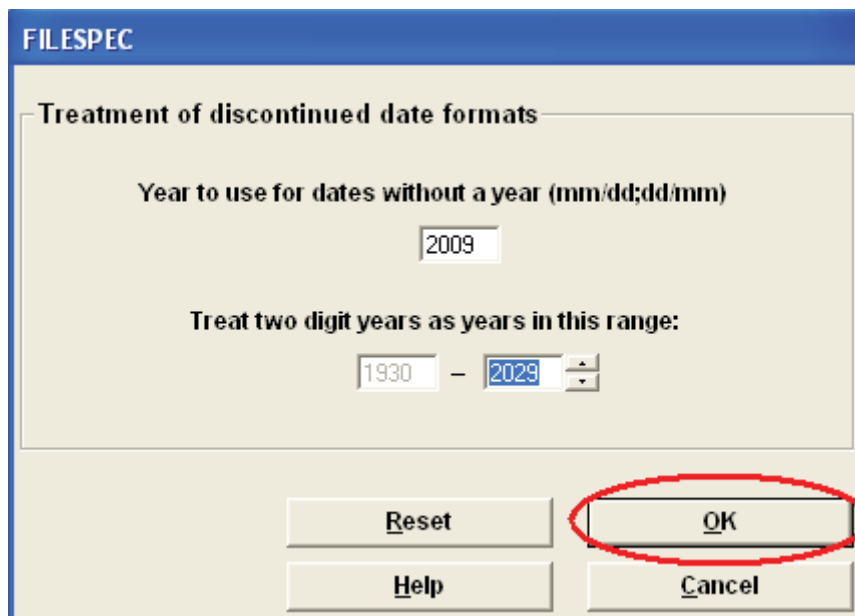
- The list of all the Epi6 data files (\*.REC) in folder “AAA” is shown. Double click on the file “M1.REC”, which contains the data on student assessment and classification:



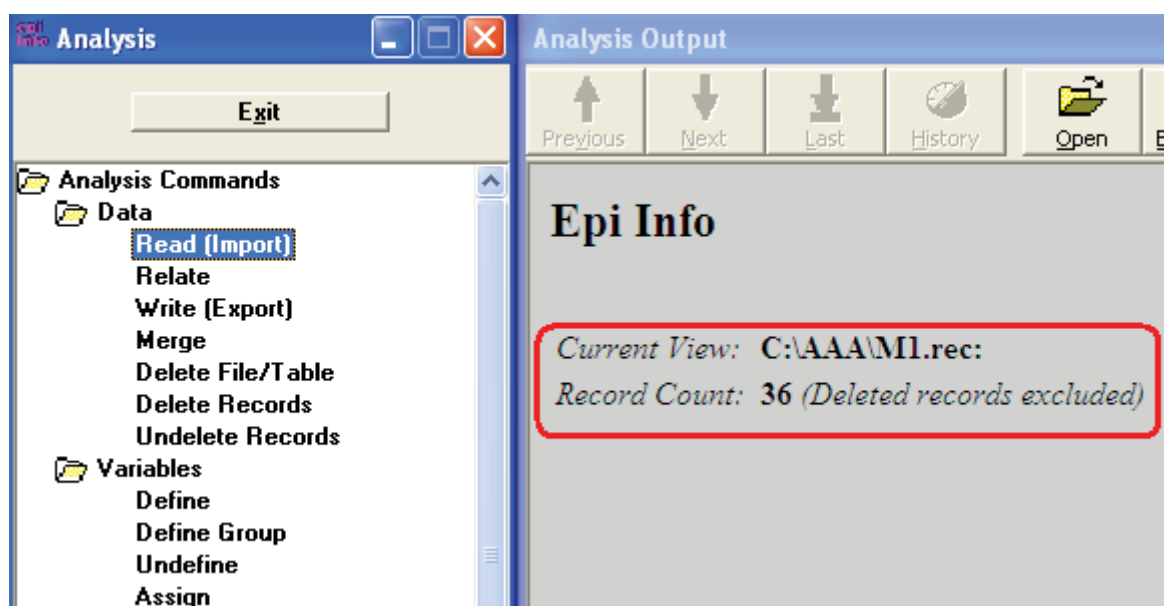
- Make sure that the “Data Files” option is checked under “Show” and the file “M1.REC” is highlighted under “Data Files”, as shown below (areas circled in red); then, click on “OK”:



Click “OK” in the new window which appears:



The “Analysis Output” area on top to the right now shows that the file M1.REC containing 36 records has been imported:

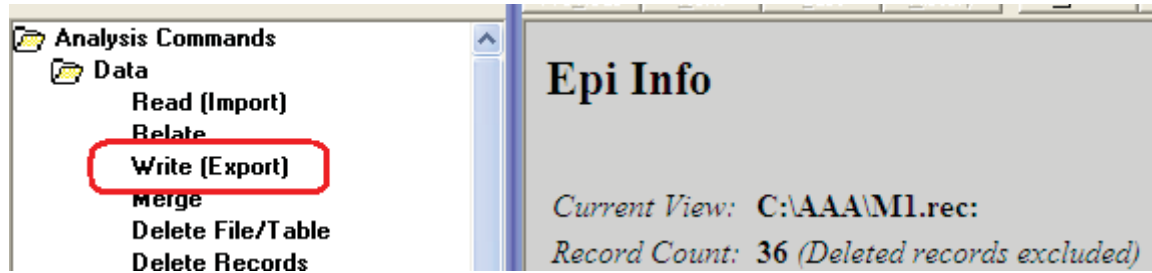


You are ready to carry out the analysis in Epi Info™ for Windows.

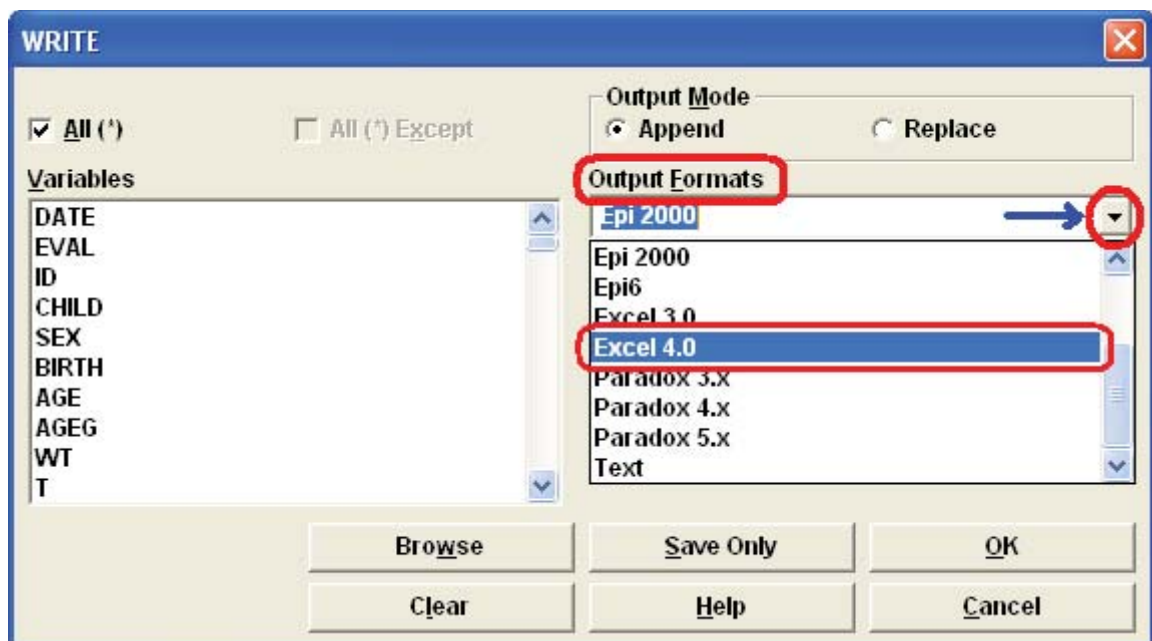
## Exporting to another file format

You can save the file in this new format (Epi Info™ for Windows uses Access format) or export it as another file format as follows:

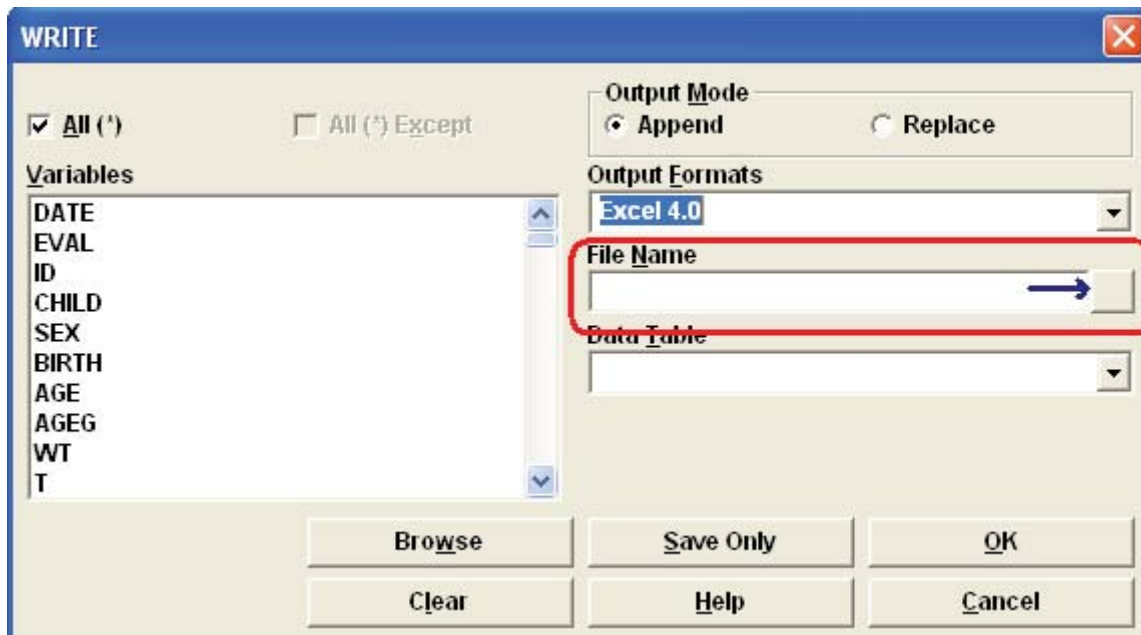
- On the top menu on the left click on “**Write (Export)**”:



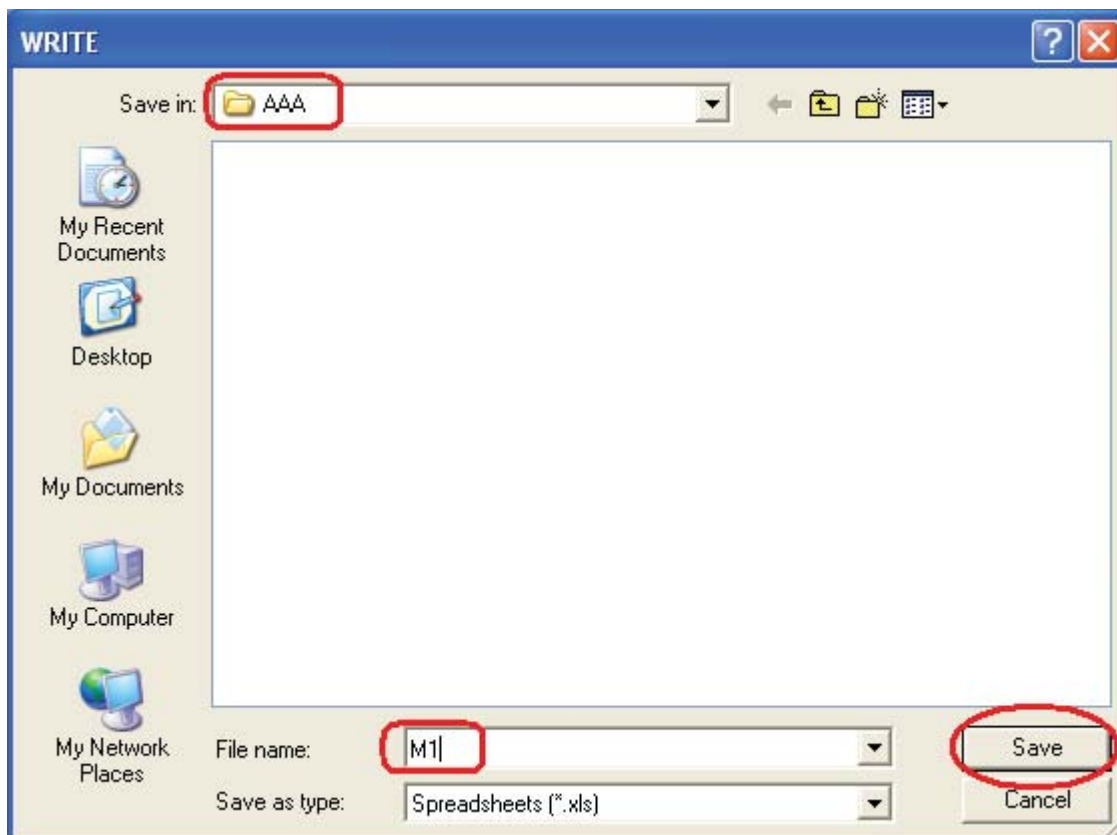
- In the window which appears, select the format of the new file, clicking on the down arrow of the “**Output Formats**” section and selecting from the drop down list. For example, choose the “Excel” format, as shown in the picture below:



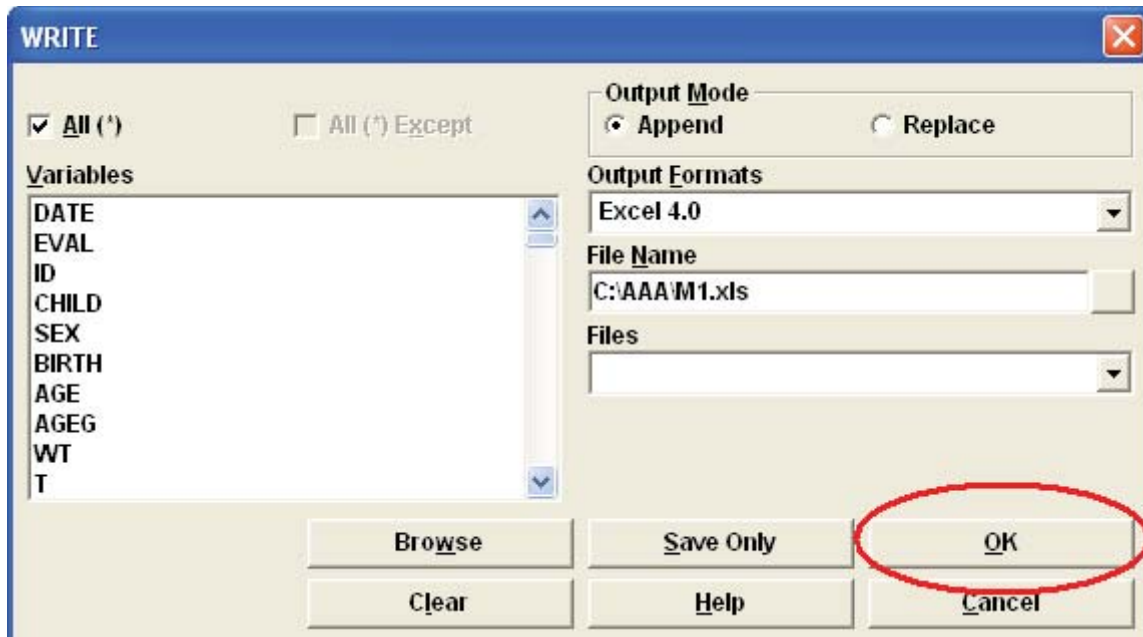
- Next, click on the small box to the right under “**File Name**”, to select where you want to place the new file:



- Let’s assume that you want to save it in the same folder “**AAA**” and give to the new Excel file the name “**M1**” (enter this name in the “**File name:**” area, as shown below); then, click on “**Save**”:



- Finally, click on “OK”:

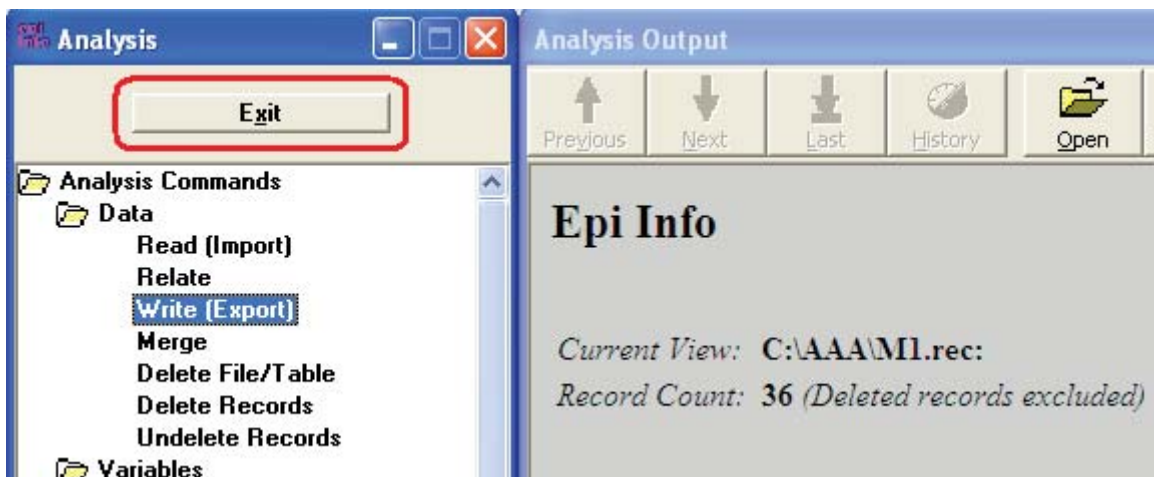


- Go to the folder “C:\AAA” and you will find the Excel file “M1.XLS”. Double click on it to view it:



You can repeat the same steps for the file **M2.REC**.

- To exit Epi Info, click on the “Exit” button on top to the left:



- Then, click again on the “Exit” button in the main window:

