10.   Tour of MS Access

First, you need to create a directory of "C:\FOR240\yourname\database" on your
local machine.

(1) Open a new database

Click MS Access icon from Start menu or on your desktop.

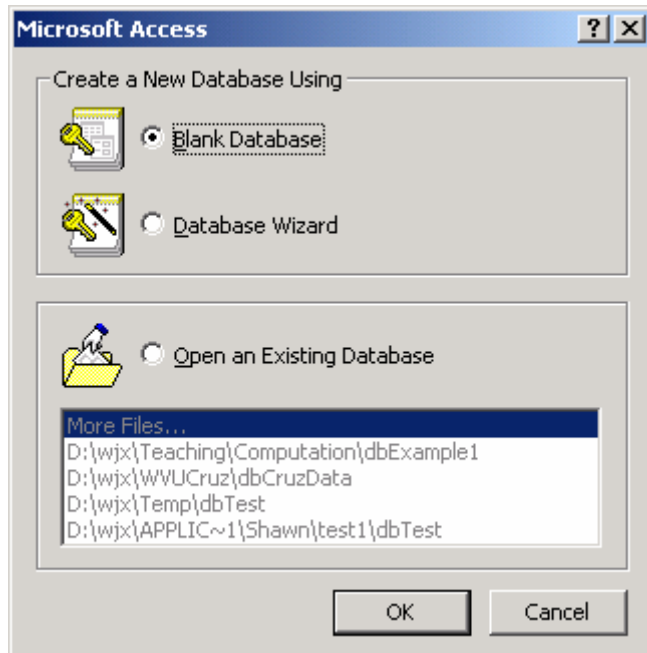Figure 1. Open an Access database.

Check "Blank Database" radio button as showed in Figure 1. Then click OK
button.

(2) Name and save the database

Find the directory you just created and type the database name, say "dbStudent"
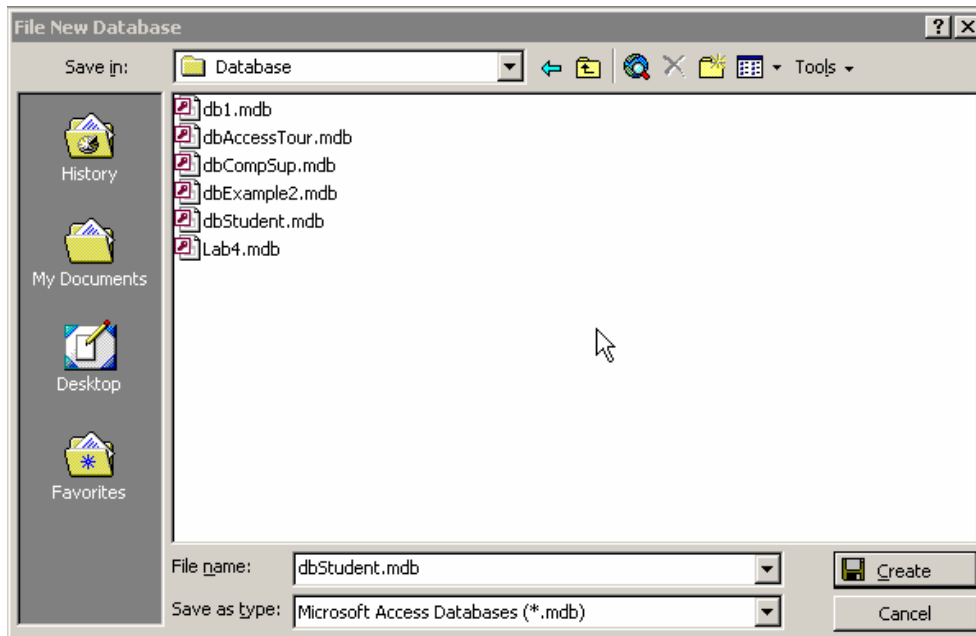in this case, and then click "Create" button (Figure 2).

Figure 2. Save the database.

(3) MS Access Window

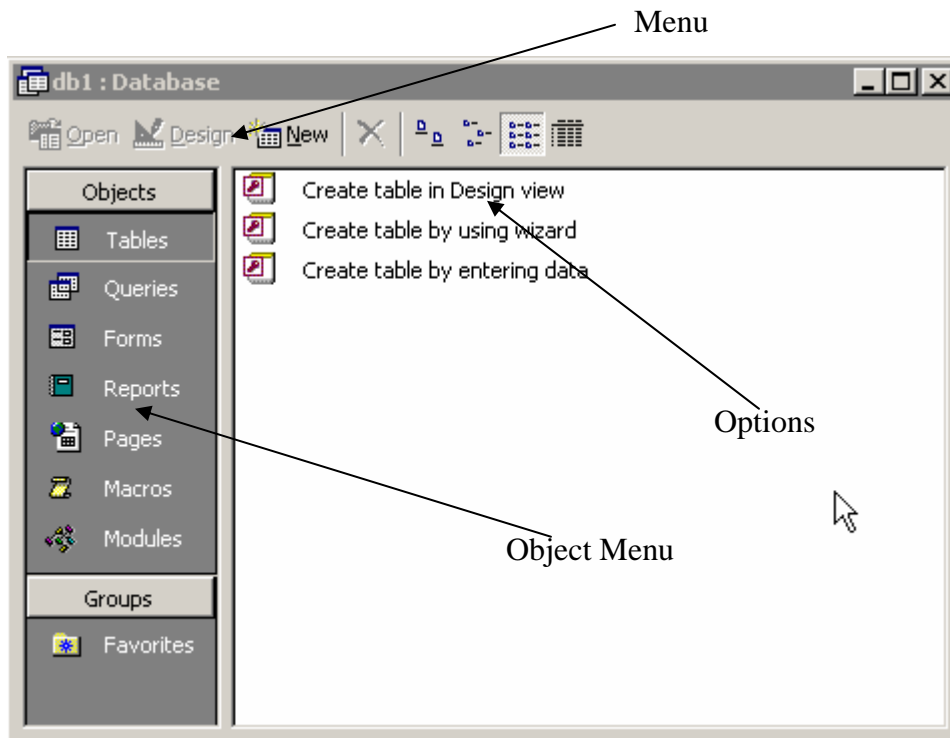Once you saved the database, MS Access Window will be displayed (Figure 3).

Figure 3. MS Access window.

You might notice that we can do the following things:
  (1) Create a table
  (2) Create a query
  (3) Design a form
  (4) Write a report
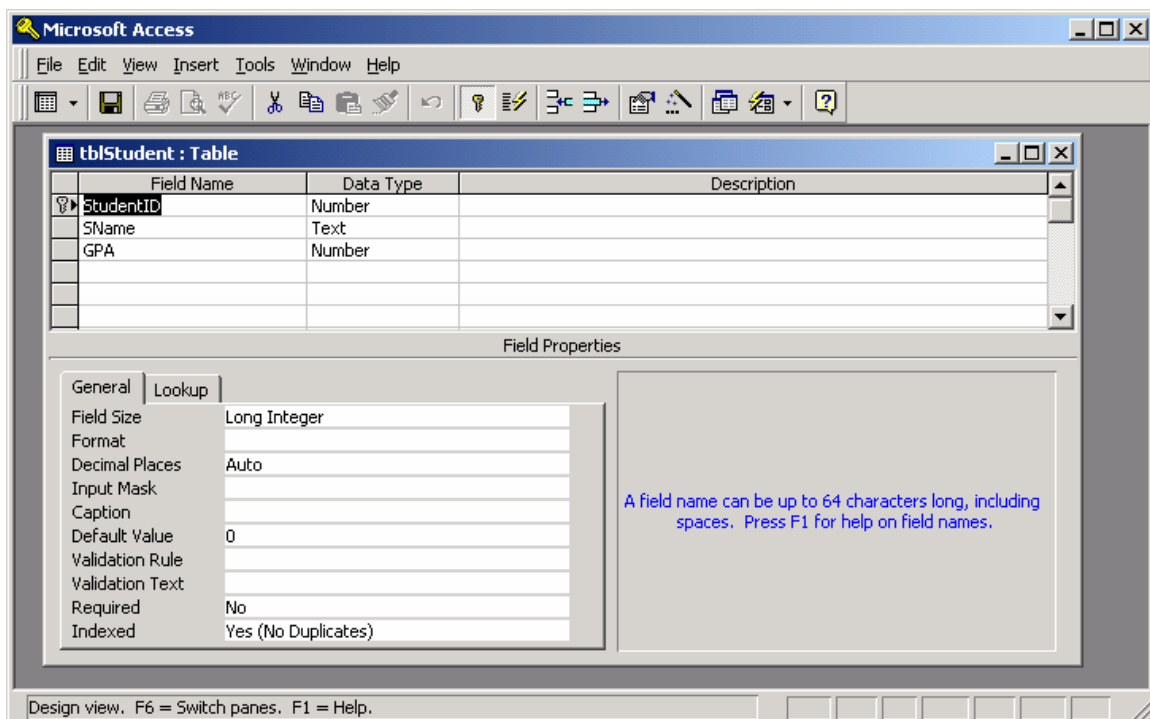
(4) Create tables

Suppose we would like to create a database for students and courses they completed. Apparently, there are two entity types here: Student and Course. However, the relationship between these two entities or tables is many-to-many. In the ER model section, we mentioned that a new table needs to be created to represent this many-to-many relationship, whose primary key is the keys from both tables. Therefore, we need to create the following three tables:
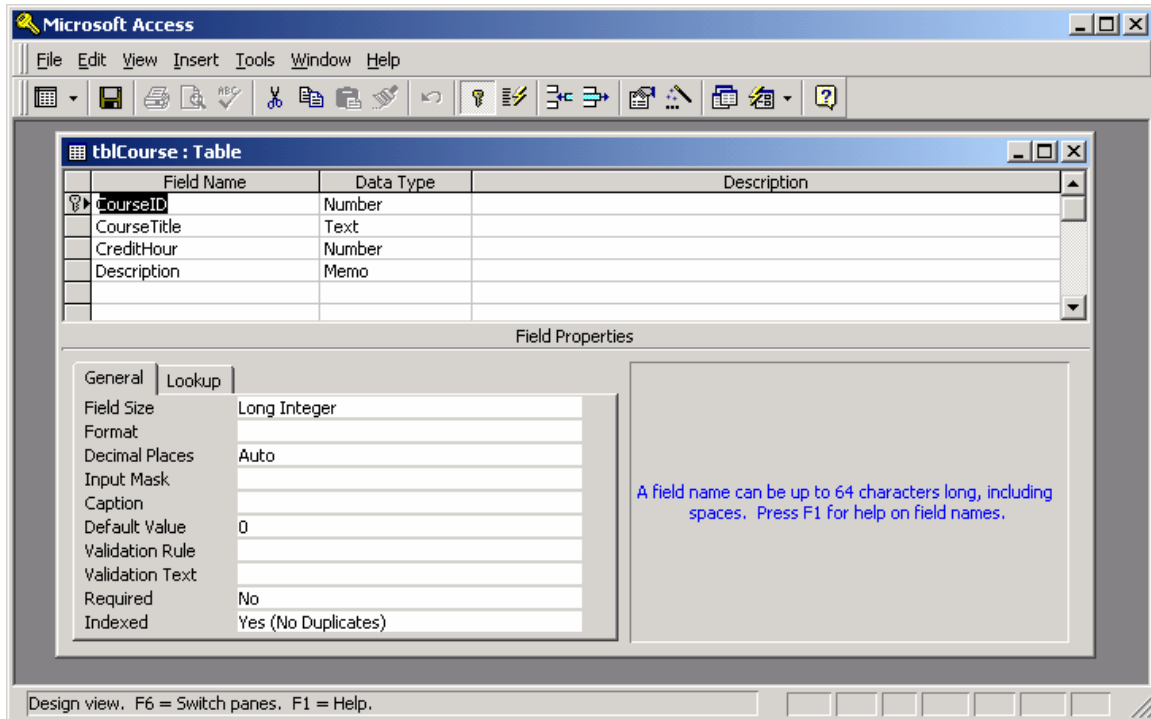
tblStudent(StudentID, Sname, GPA)
tblCourse(CourseID, CourseTitle, CreditHour, Description)
tblStudentCourse(StudentID, CourseID, DateTaken, Status)
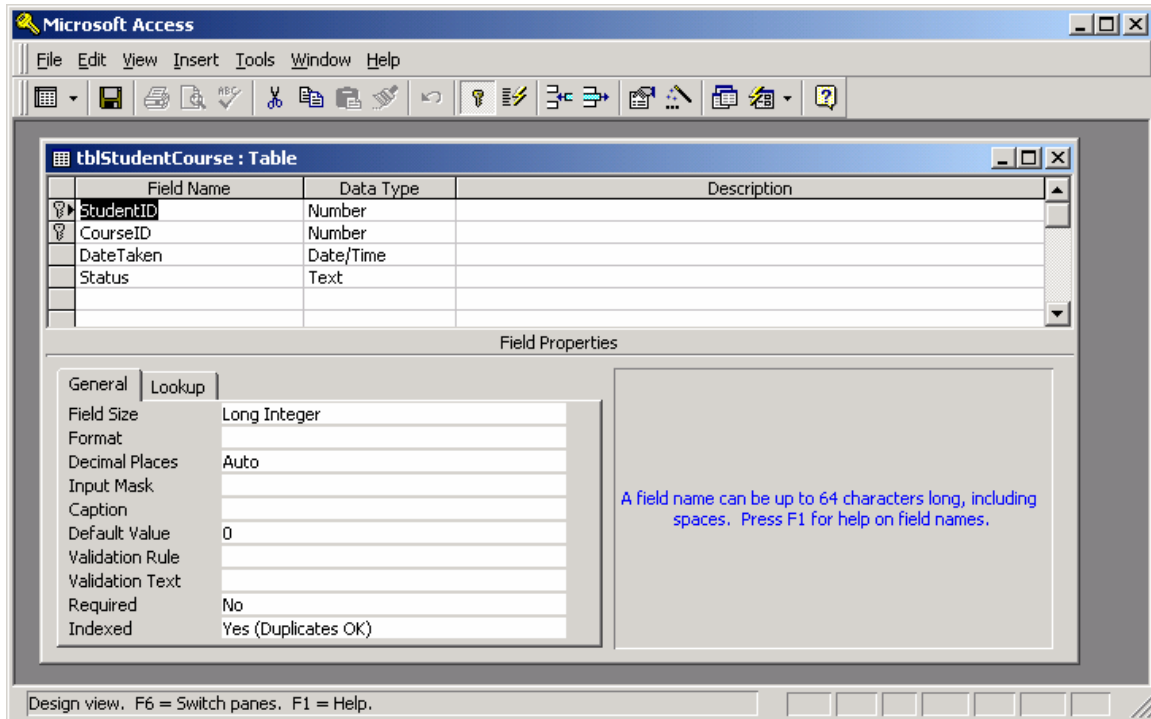
Figure 4 showed the design windows for these tables. Once you created the tables, open them and enter some data as shown in Figure 5.

(a)

(b)

(c)

Figure 4. Design windows of tables

Figure 5. Data in the tables.

(5) Build relationship

Click Relationships… from the Tools menu, you will have this dialog box as shown in Figure 6. You can build the relationships on tables, queries, or both of them. Let's just build the relationships for the tables we just created.
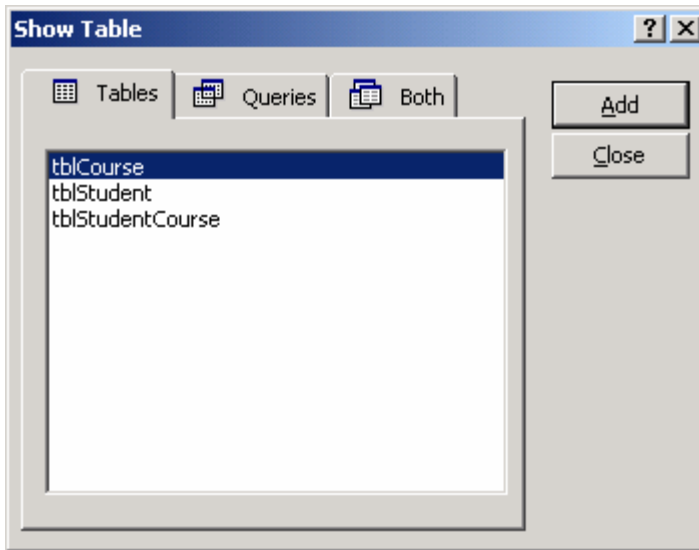
Figure 6. A dialog box for building relationship.

Add three tables there by selecting the table and then hitting "Add" button, then close the dialog box (Figure 7).
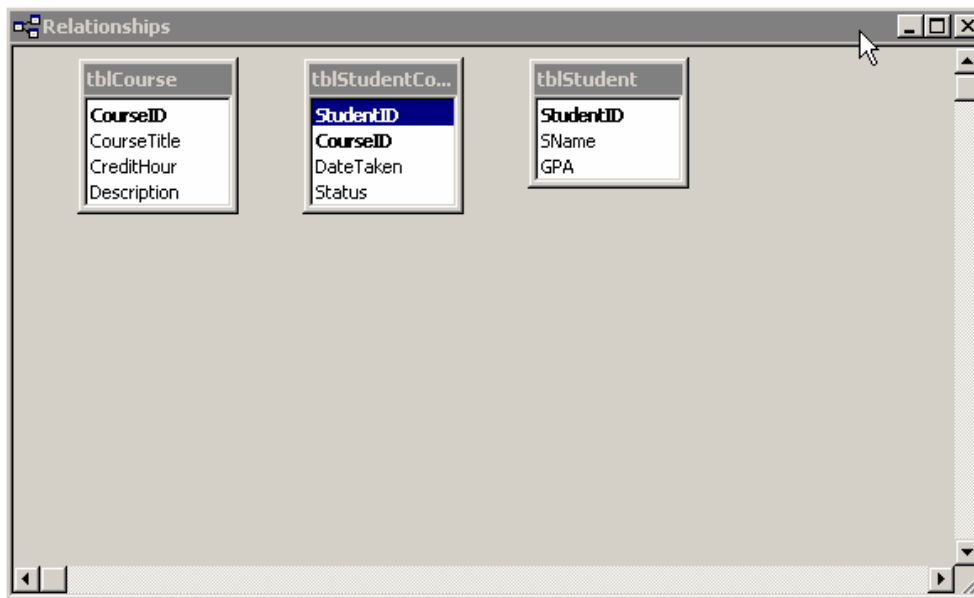

Figure 7. Tables for relationships being built.

Simply drag CourseID from tblCourse to tblStudentCourse and StudentID from tblStudent to tblStudentCourse. The relationships are then built (Figure 8).
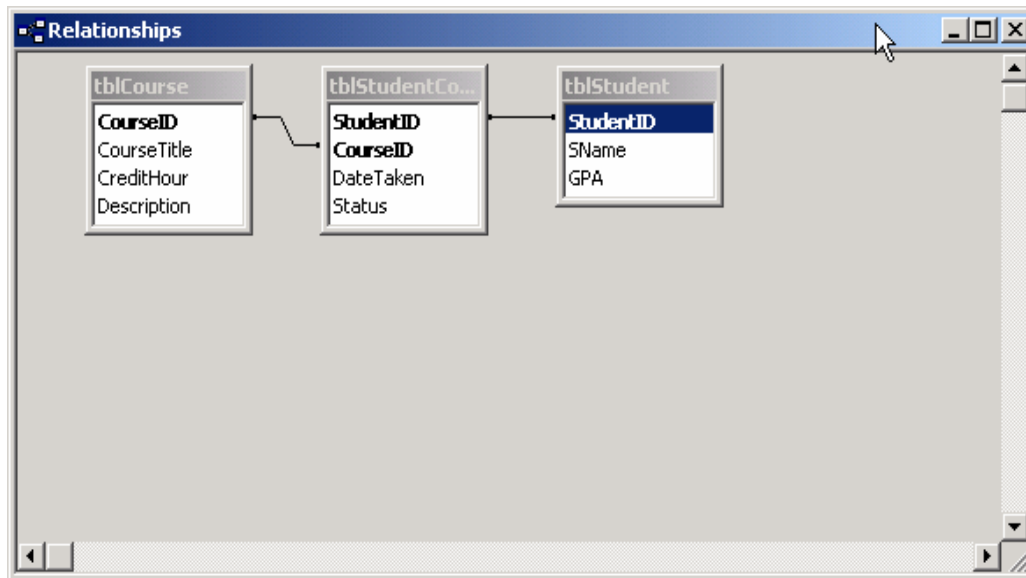
Figure 8. Relationships for the tables.

You can edit or delete the relationships.

(6) Query tables

Click Query tab, we can have a dialog box for creating queries (Figure 9). Then hit
"New" button, another box will pop out (Figure 10). In Figure 10, you have several
options to create the query. However, for the typical query, you just select "Design
View" and then click "OK" button. When the "Show Table" box is popped out, you
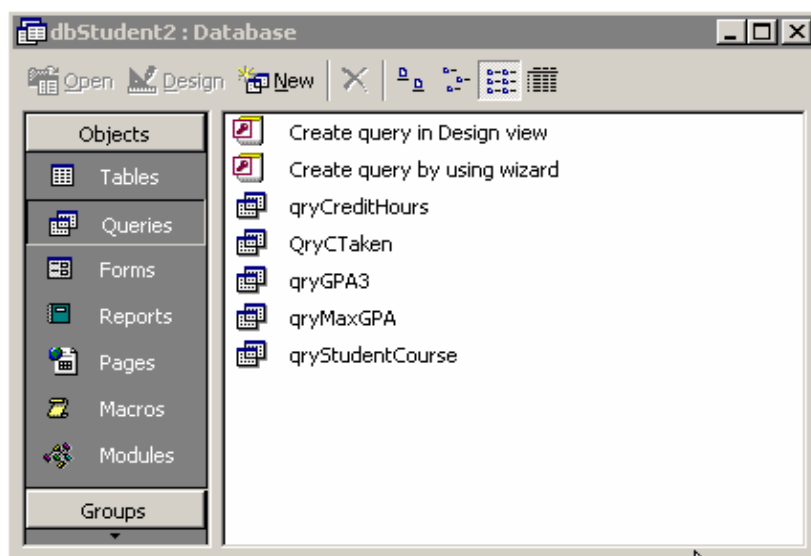need to add the tables on which you will build the query (Figure 11).
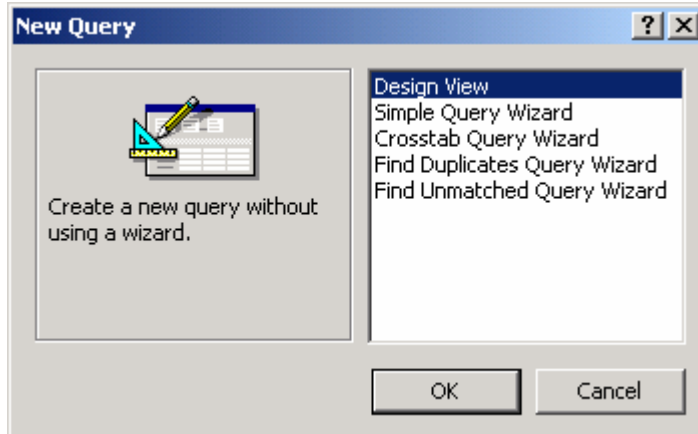

Figure 9. Window for creating a query.

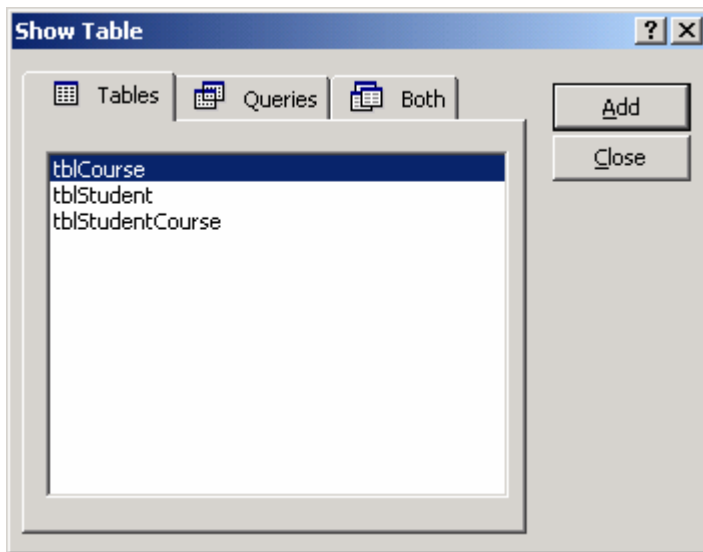Figure 10. Options to create the query.

Figure 11. Tables for query.

After adding three tables in dbStudent database, you should close this "Show Table" box and the added tables will display in Query By Example (QBE) window (Figure 12).
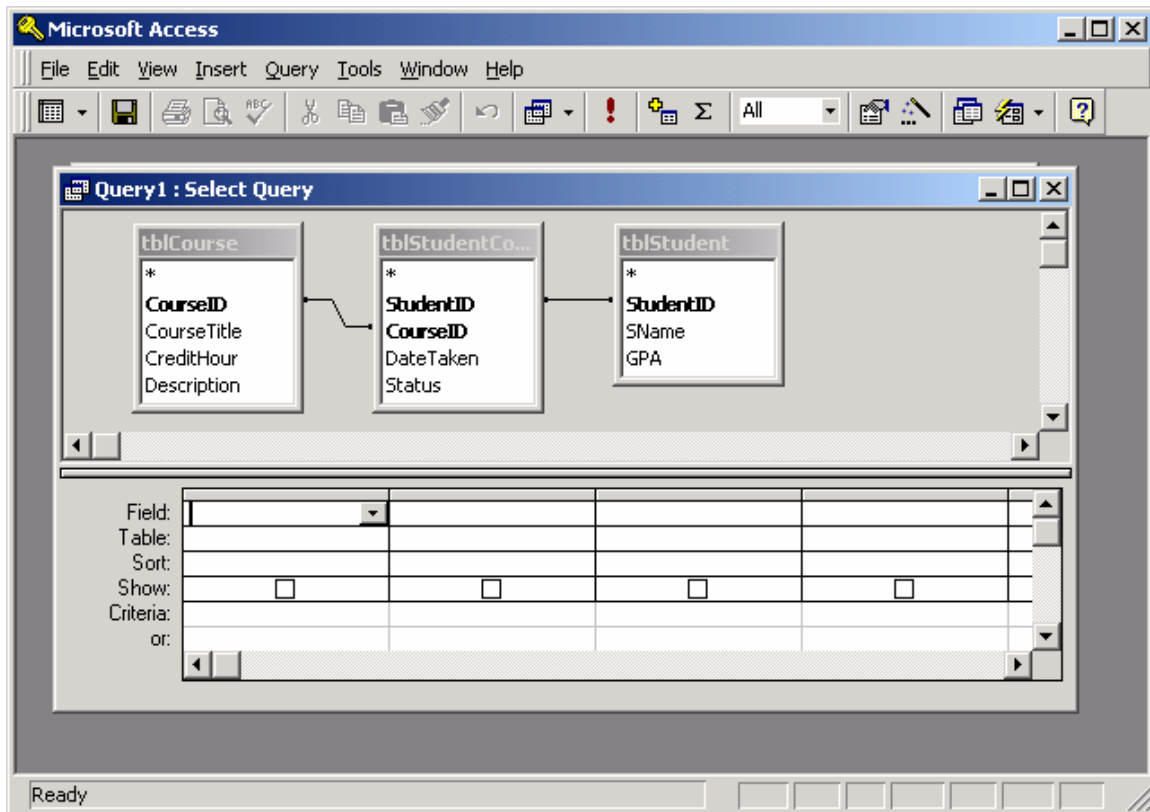
Figure 12. QBE Window for designing the query.

Suppose we'd like to list the following information for a specific student: Student ID, Name, GPA, Course ID, Title, Credit Hour, Course Description, Date Taken, and Status. Apparently, we cannot have the information just based on one table and need to create a query and join three tables together to display the required information.

You have two ways to create the query:
(a) Query manually - Drag the data fields you need from tables to display area.
(b) Query using SQL - Click "View|Sql View" on the menu bar, then type the following SQL commands.

SELECT tblStudent.StudentID, tblStudent.SName, tblStudent.GPA, tblCourse.CourseID, tblCourse.CourseTitle, tblCourse.CreditHour, tblCourse.Description, tblStudentCourse.DateTaken, tblStudentCourse.Status
FROM tblStudent INNER JOIN (tblCourse INNER JOIN tblStudentCourse ON tblCourse.CourseID = tblStudentCourse.CourseID) ON tblStudent.StudentID = tblStudentCourse.StudentID;

Save this query and name it as qryStudentCourse in the database.

(7) Design a form

Click Form Tab, then "New" button, we will have this dialog box as displayed in Figure 13.
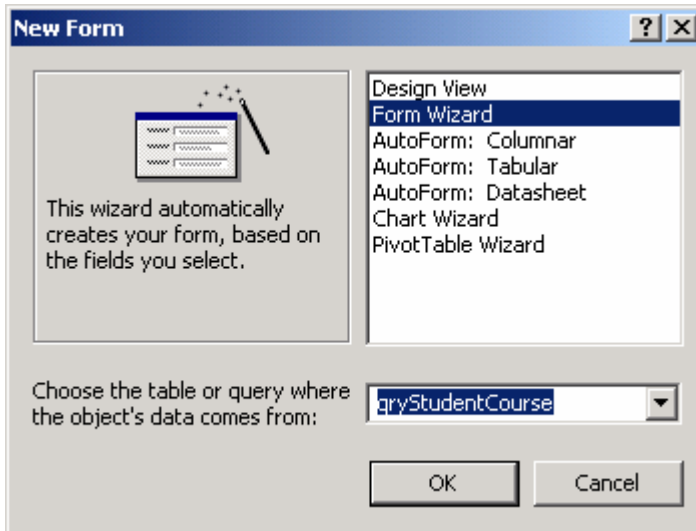

Figure 13. Dialog box for designing a form.

Select "Form Wizard" and the query we just created, and then click OK button, we will have the following window (Figure 14).
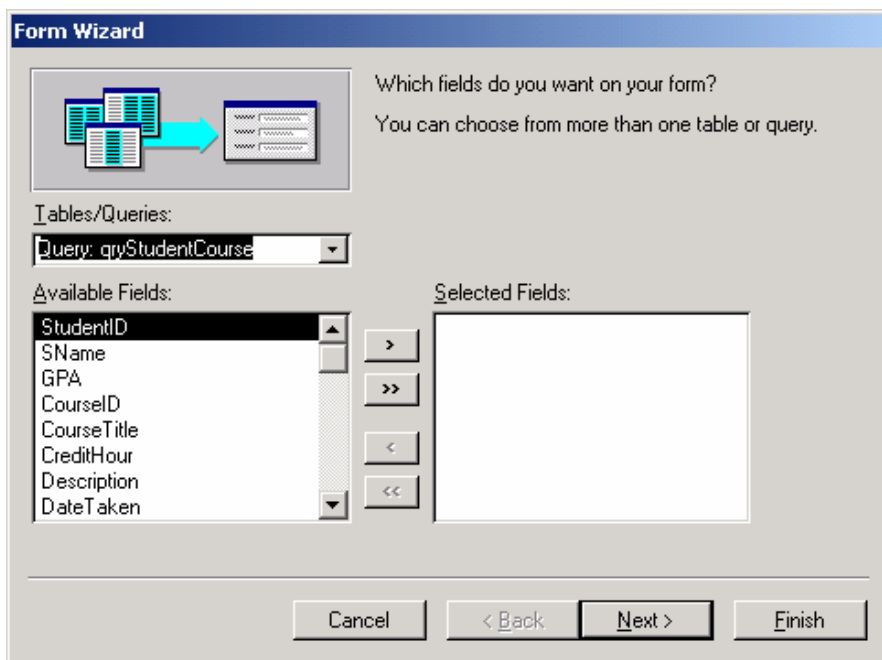

Figure 14. Window for selecting data fields.

Select data fields from the list box of Available Fields and add them into the list box of Selected Fields in Figure 14. From there follow the procedures on computer screen, you will get the following form which will allow you to edit, add, and delete the data in the tables (Figure 15).

Figure 15. An Access form.

(8) Create a report

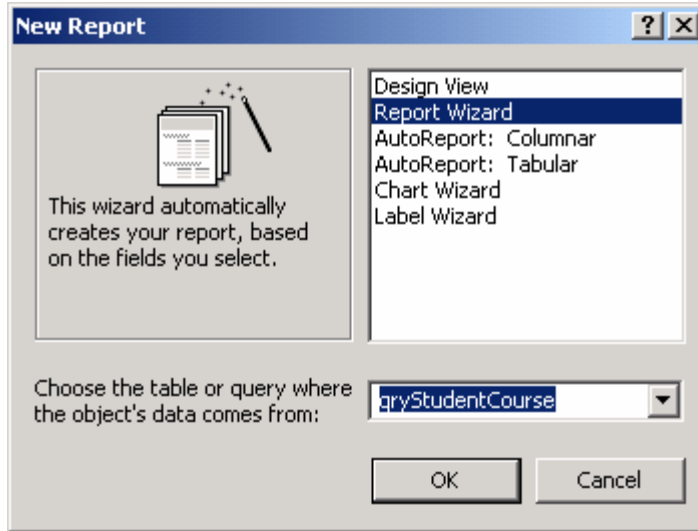Click Report tab, and then hit "New" button, a new report dialog box will pop out (Figure 16).

Figure 16. A dialog box for report.

Select Report Wizard and the query we created, then click OK button.
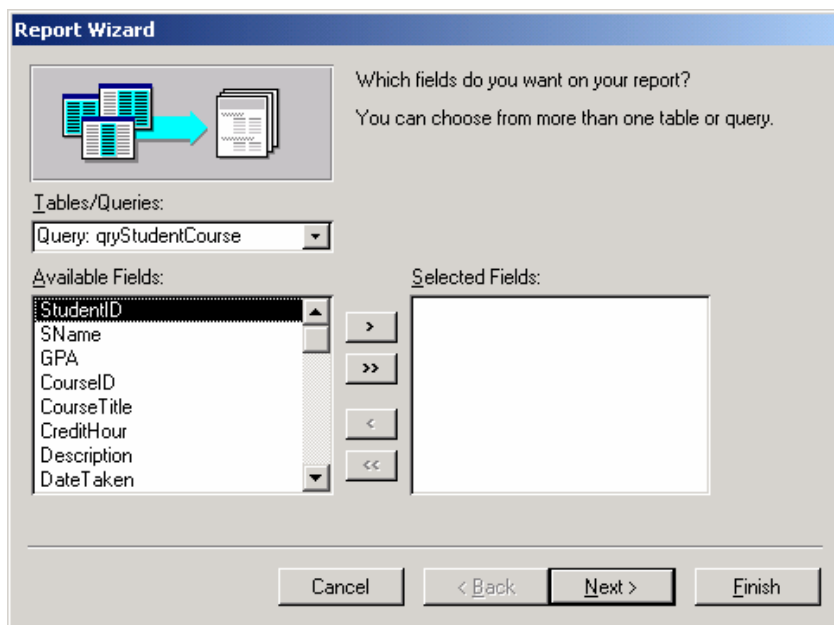
Figure 17. Selecting data fields.

In Figure 17, select data fields, then follow the procedures, and we will have the report (Figure 18).

Figure 18. A sample report.