

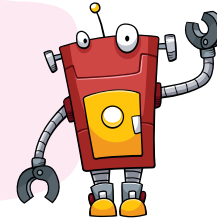


Queries, Forms and Reports in MS Access 2010



Learning in this chapter

- ✿ Working with query
- ✿ Working with forms
- ✿ Working with reports



As you know that database of any organisation may contain huge amount of data. Moreover, it may consist of multiple tables.

When the number of records in a table increases, it becomes difficult for the user to pick out specific records from that table. Microsoft Access provides us a solution for this problem through queries.

Query is a database object that help us to retrieve and view information from one or more database tables that meet a specific conditions or criteria, which you define. The information retrieved on the basis of a specified criteria in the query is stored in a separate table, called the Query table.



WHAT IS A QUERY?

A **Query** is a database object which allows you to display specific records from a table (or from two or more linked tables), often based on a condition.

For example, suppose we have a database table that contains the results of all the students from classes I through XII and we want to view the records of only those students who have secured more than 90 percent marks. For this we can design a query that will extract the record of only those students who have scored 90 percent or more marks. The extracted records will be stored in a separate table known as a **query table**.

ID	Student_Na	Stu_ID	Maths	English	Science	SST
1	Vishal	SB-12341	78	89	98	67
2	Rekha	SB-12342	87	89	89	76
3	Vivek	SB-12343	66	79	50	80
4	Rahul	SB-12344	88	99	77	66
5	Ajay	SB-12345	99	99	89	89
6	Vinay	SB-12346	56	78	78	78

Entering data in a Table



Field:	Student_Name	Stu_ID	Maths	English
Table:	MarksTable	MarksTable	MarksTable	MarksTable
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			>=80	

Query Criteria

Student_Na	Stu_ID	Maths	English	Science	SST
Rekha	SB-12342	87	89	89	76
Rahul	SB-12344	88	99	77	66
Ajay	SB-12345	99	99	89	89

Selective output in a Query Table

In the previous chapter, we have learnt to create and edit tables in a database. Let us now learn to create simple queries to extract and display selective data from the database tables.



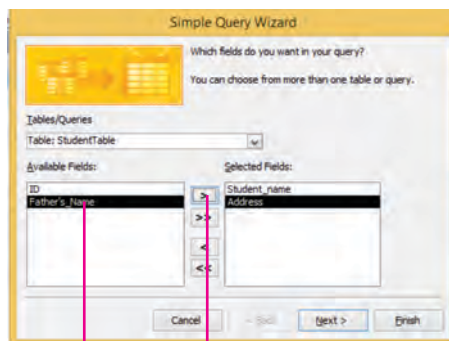
CREATING A QUERY

MS Access provides four types of queries – **Select query**, **Update query**, **Cross tab query** and **Append query**. Here we will learn to create the simplest type of query, i.e., the select query. Access provides two ways to create 'Select Query' – by using Query Wizard and Query Design.

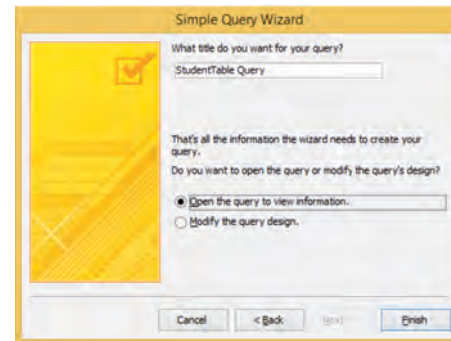
Using Query Wizard

The Query Wizard allows us to create a query object based on a single table or multiple tables through simple steps. Here we will learn to create a Query that displays only the names of the students, and their addresses from the StudentTable. The steps are as follows :

1. Open the required database and click on the **Create** tab. In the **Queries** group, click on the **Query Wizard** button. ... The New Query dialog window will open.
2. Select the **Simple Query Wizard** option and click on the **OK** button. ... The Simple Query Wizard dialog window will open.
3. Click on the Tables/Queries drop down arrow and select the table you want for your query from the drop down list. (Here we have selected the StudentTable.)



Select the field Click to transfer



Name the query object

4. Select the Student_Name field from the Available Field section and click on the (>) button to transfer it into the Selected Fields section.
5. Similarly, transfer the field 'Address', also, into the Selected Fields section and click on

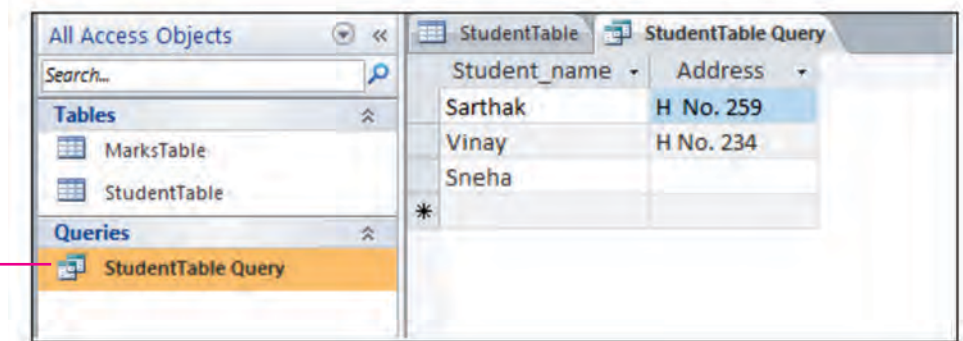


the **Next** button.

6. In the next step, enter a name for the Query and select the Open the query to view information option and click on **Finish**.

... The query results will be displayed in the right pane in the form of a query table.

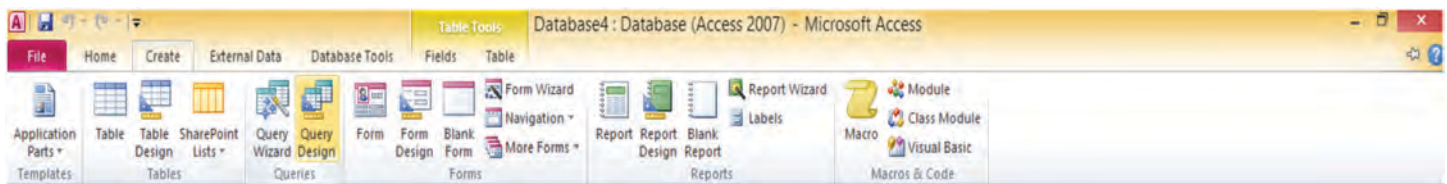
Query icon in the navigation pane. If the Query table is closed you can double click on it to open the Query.



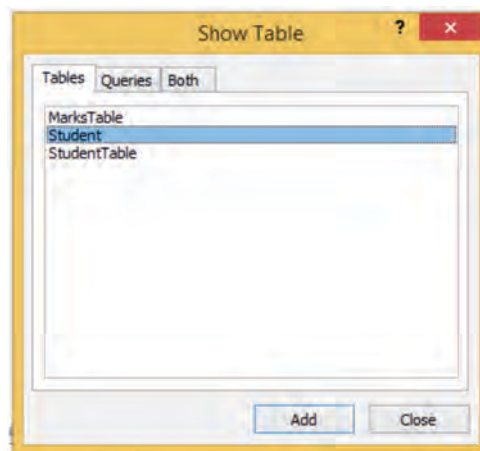
Final query table containing Names and Address of the students

Creating a Query in Design View

The design view gives us more control over creating a query. The steps to create a query in Design view are as follows :



1. Open the required database. Open the **Create** tab and in the **Queries** group click on the **Query Design** button.
2. The **Show table** dialog box is displayed from which you can select **Tables** or **Queries** to add to the Query Design.

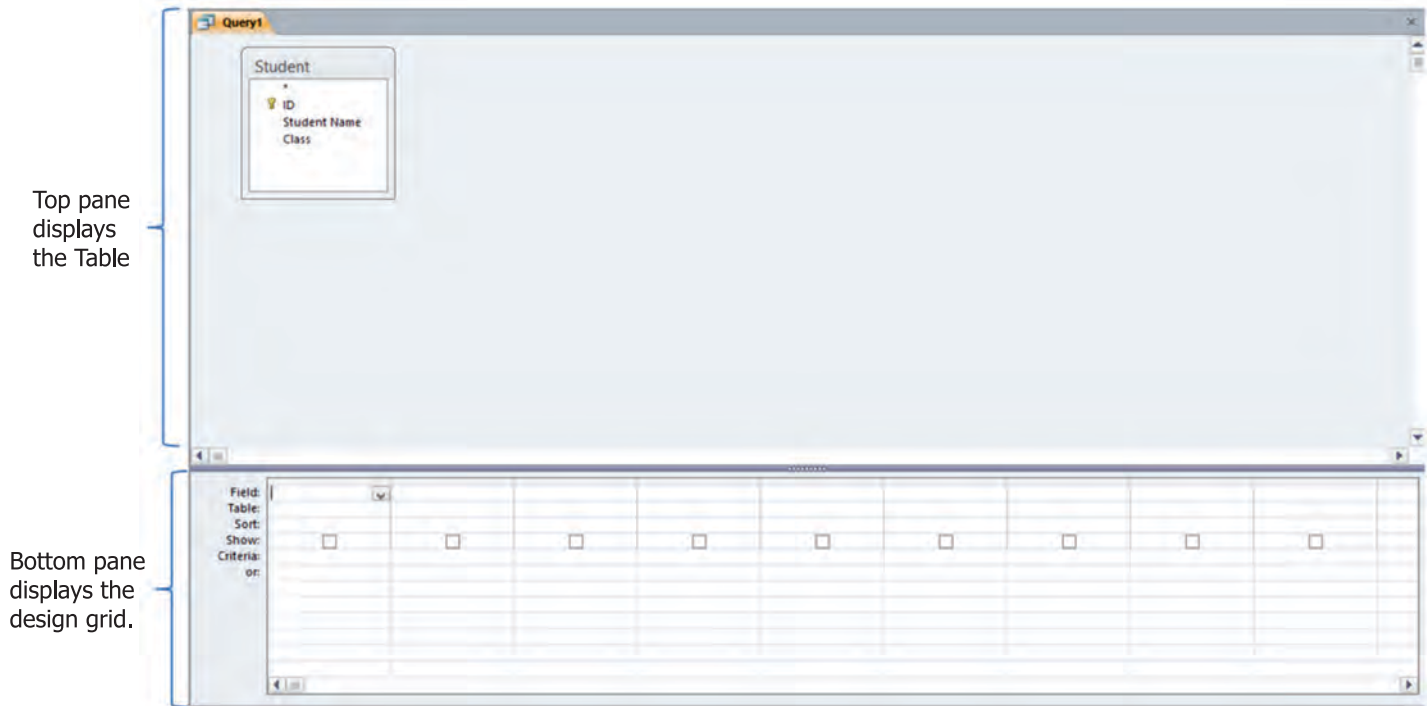


3. Select the table from **Show table** dialog box on which you would like to run a query. Click on the **Add** button.
4. The select table will appear as a small window in the upper section of the Query Design i.e., **Object Relationship Pane**.



The Query Window

The **query window** is divided into two panes. The top pane displays the **tables** selected for the query. The bottom pane displays a **design grid** where you can add fields to the query and also specify the criteria.



Let us understand the design grid. The design grid shows the following headings:

Field: The first row of the Design Grid displays the selected field names from the table.

Table: It displays the name of the existing table.

Sort: This property is used to filter data in ascending or descending order. It is optional.

Show: It displays a check mark which indicates that this field will be visible when the query is executed.

Criteria: It contains the condition on the basis of which the records will be filtered in the query output.

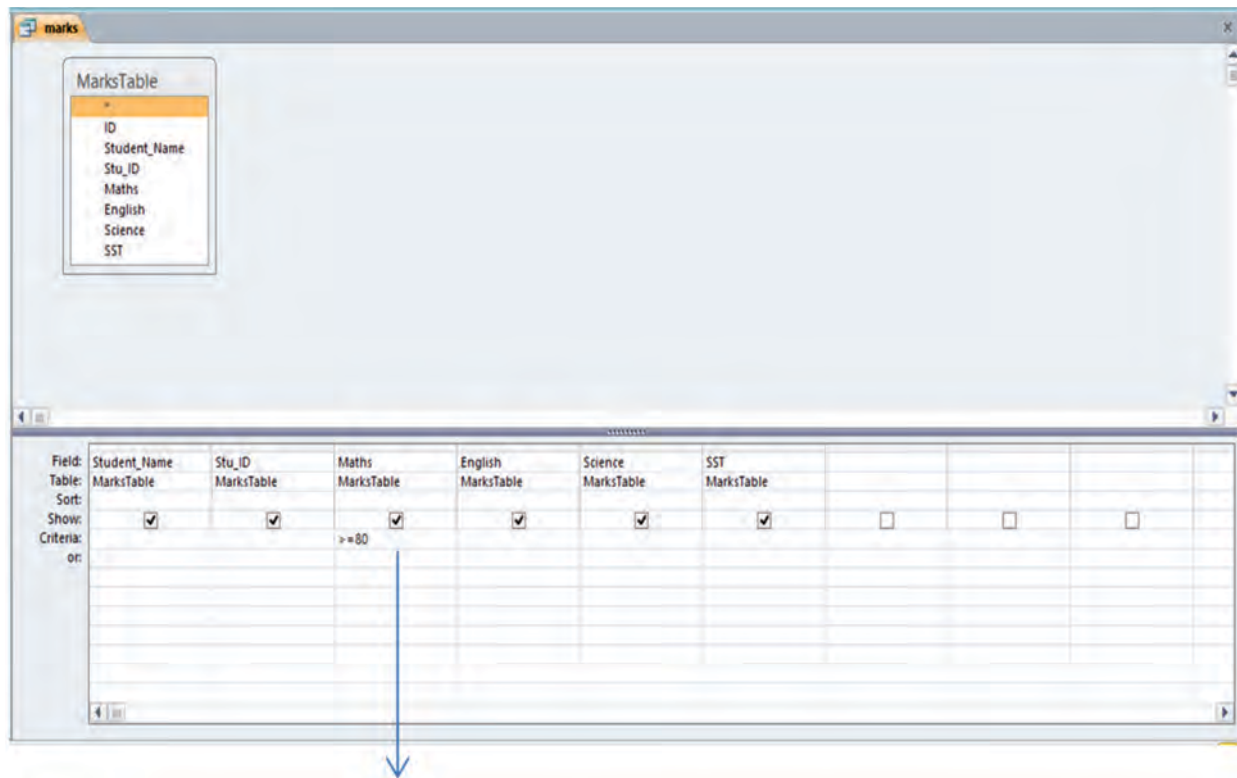
Or: This property is used to specify multiple criteria.

Specifying Simple Criteria in a Query

The data will get filtered according to the specified criteria in the query output. Let us now set a condition in the field Maths to make sure that the Query table displays only those records where the marks obtained in Maths are either equal to or greater than 80. The steps to do it are given below:

1. Open the required database and open the Query table created in the previous section in the Design view.
2. Under the field 'Maths' in the 'Criteria' row enter the condition (≥ 80) as shown.





Criteria specified in the criteria row

3. Save the changes made to the query table by clicking at the **Save** button on the Quick Access toolbar.
4. Close the design view. Double click on the **Query icon** in the navigation pane to run the query.

Student_Na	Stu_ID	Maths	English	Science	SST
Rekha	SB-12342	87	89	89	76
Rahul	SB-12344	88	99	77	66
Ajay	SB-12345	99	99	89	89

Query Table showing results according to the set criteria

FORM

A **Form** is a graphical representation of a table. We can add and update records in our table by using a form. Although a form can have a different name from the table it is based on, they both still manipulate the same information and the same extract data. Hence, if we change a record in a form, it will be changed in the table as well.

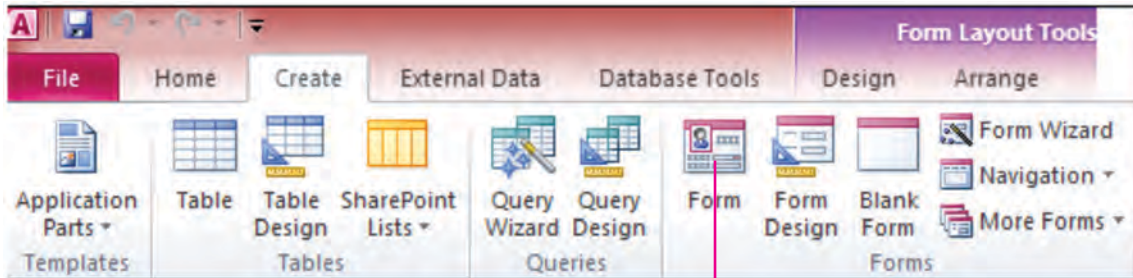
A Form created for a query table



Creating Forms

To create a form the steps are as follows:

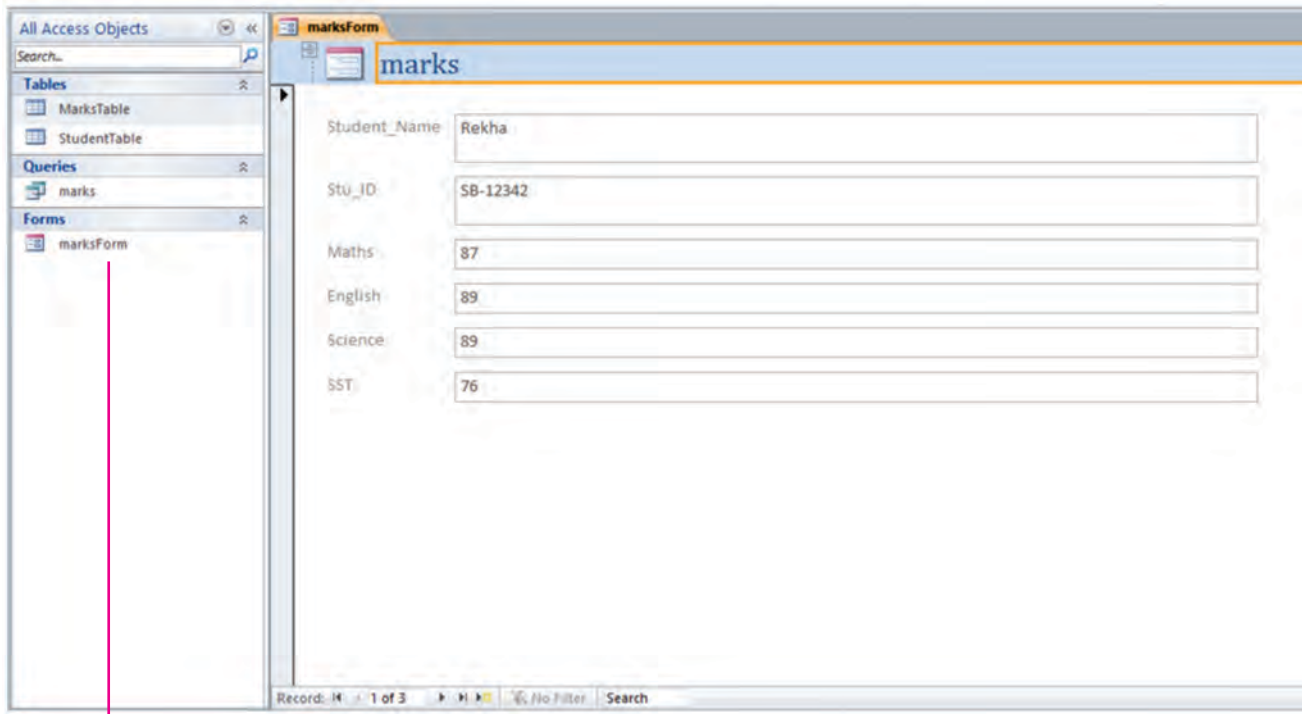
1. Select a table or a query in the Navigation pane that you want to use as the data source for the form.
2. Click on the **Create** tab. In the **Forms** group select the **Form** button.
...A new form will open up in the Layout view.



Form button in the Create Tab

A form has three views – **Form view**, **Layout view** and **Design view**. When a New Form is created, it by default opens in the layout view, so that we can adjust layout of various fields as per our requirement. In Form view we can only view and edit data but cannot change its layout.

3. You can click on the various fields and drag them to change their position on the form. In this way you can change the appearance of the form in the Layout view.
4. Click on the **Save** button on the Quick Access toolbar and save the form by any name as you like.



Form object in navigation pane

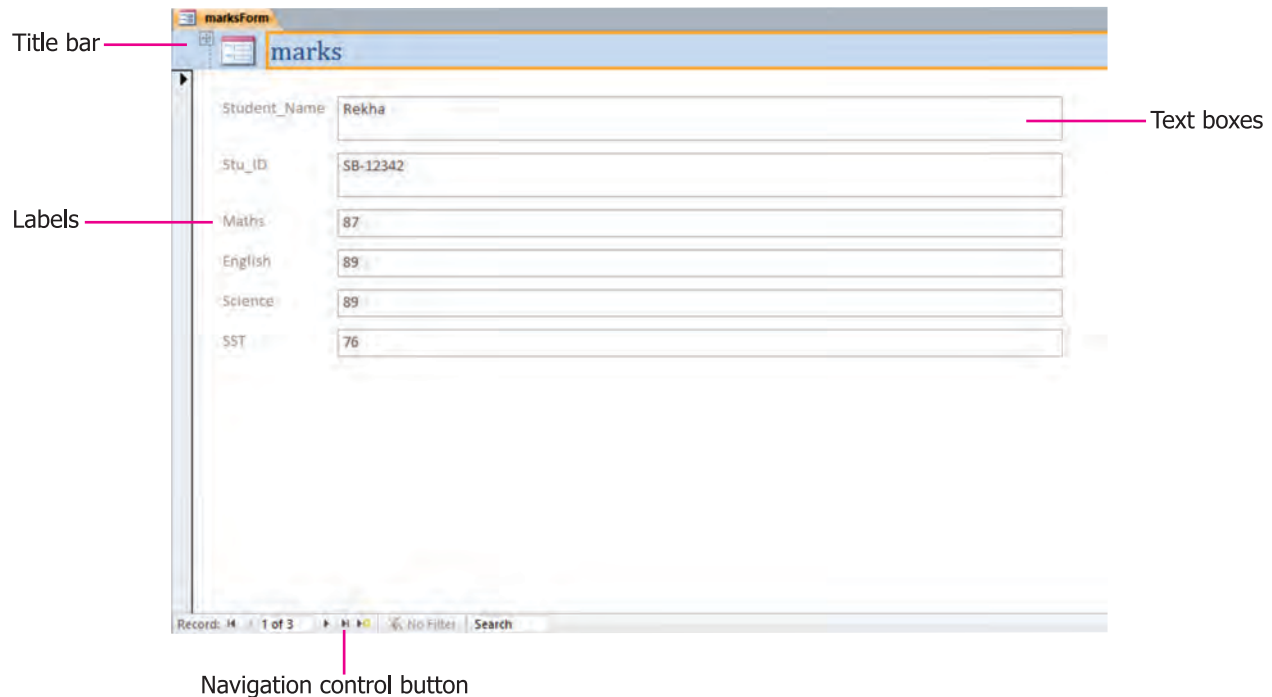
Form object created for a table





COMPONENTS OF THE FORM SCREEN

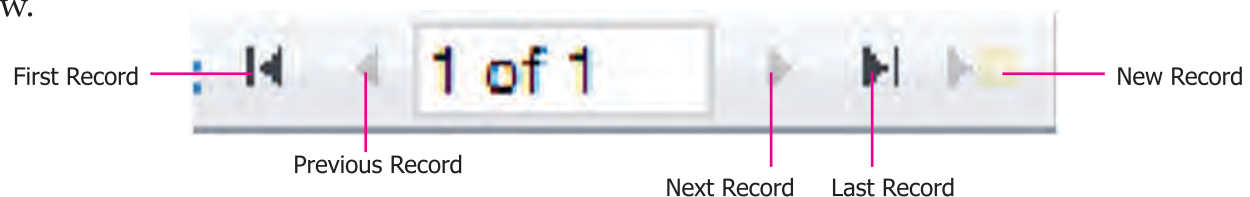
A Form Screen is very simple. Infact the entire concept of a form is to keep it un-cluttered, so that it can be easily used. Let us get familiar with the main components of the form screen.



1. **Title bar**: Title bar shows the form title.
2. **Captions/Labels**: Captions/Labels (Field names) describe the data entered in the text boxes.
3. **Text Box**: Text boxes is used to enter data and is linked to the fields in the table.
4. **Navigation control button**: Navigation control buttons used to move within the records of table.

Navigating Between Records

The form window behaves like a user-friendly display. We can view and move through the various records by using the different navigation buttons situated at the bottom of the Form window.



EDITING RECORDS THROUGH A FORM

To edit records using the Form we need to view in the Form View. In the Form view we can easily edit the existing records by making them active on the screen, making the required changes and then clicking on the Next button. The steps to edit the records are given below.

1. Open the **Home tab** and click on the **View button** drop down arrow. Select the **Form View** from the list displayed.



- Click to bring the cursor in the text box and make the necessary changes to the data. (Here, we have changed Student_Name from **Rekha Sharma** to **Rekha Kumar Sharma**.)

Editing records through a Form

- Move to the data in the next field by pressing the Tab key or by clicking with the mouse.
- Save the changes by clicking on the Save button from the Quick Access toolbar.

TIP! Be careful while changing data in a form as these changes will also be reflected in the table that is linked to the form.

Activity

State whether these statements are 'True' or 'False'.

- Forms provide us an easy to use interface for entering data in a database. _____
- Forms cannot be used to edit data. _____
- To open a form you must double click on its icon in the Navigation pane. _____
- Forms cannot be made for Query tables. _____
- You can use the Form Navigation buttons to navigate through the records in a form. _____



REPORTS

A **Report** is an effective way of presenting the data stored in a table or query in a printed format. The Report object allows us to control the way the data is displayed when it is printed on paper. The **Reports** group of the **Create** tab shows the various options to create a report objects. Here we will use the Report Wizard to create a report.

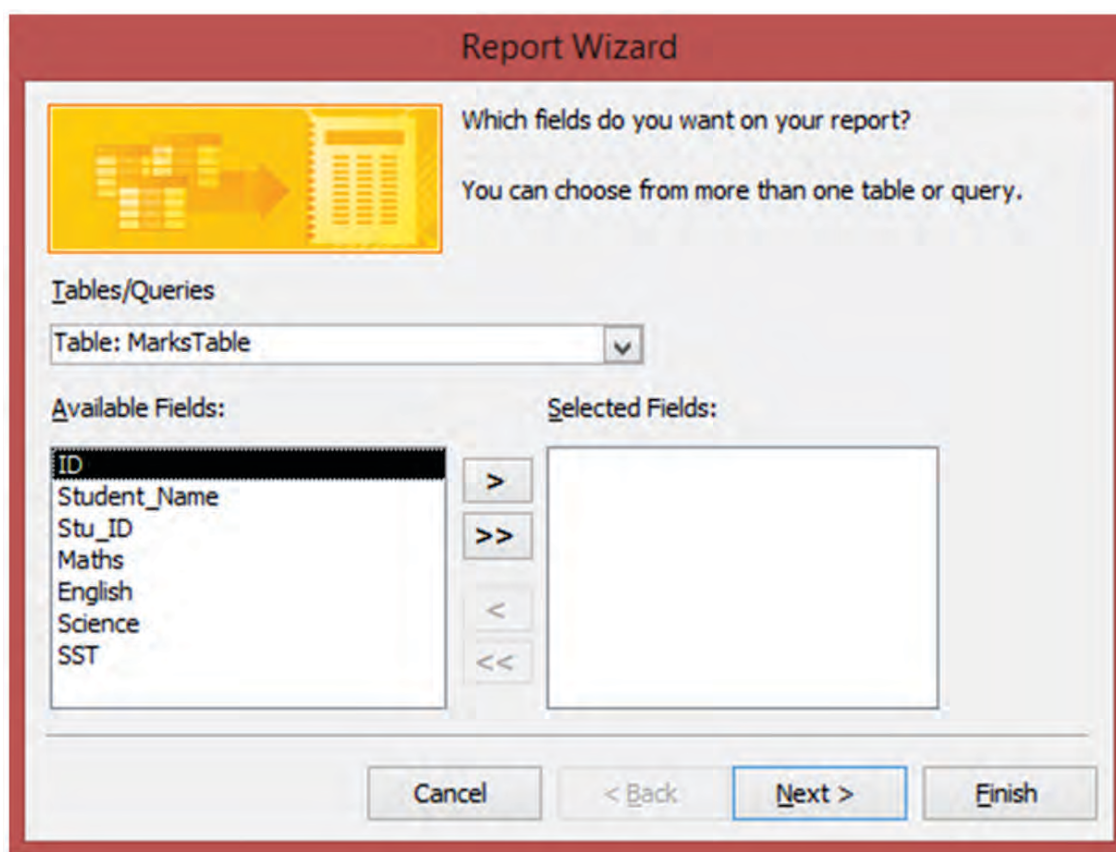
Creating a Report using the Report Wizard

Let us learn to create report in MS Access to display the records of the 'Marks' table.

- Open the required database. Click on the **Create** tab.



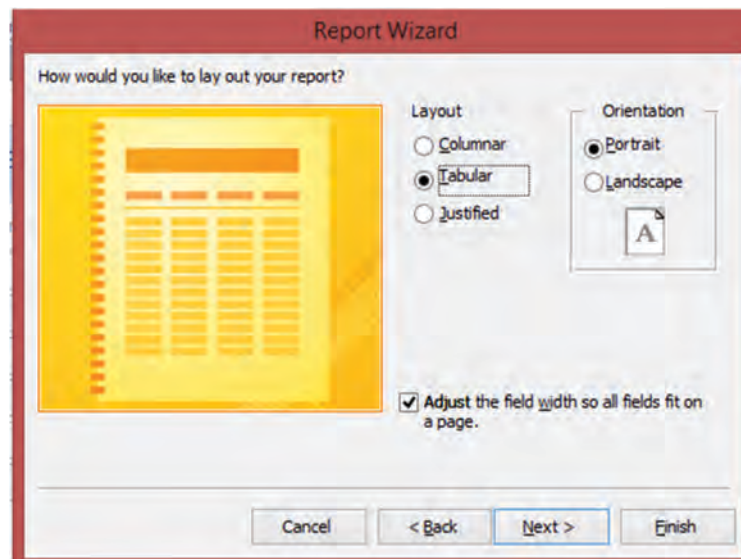
2. In the **Reports** group click on the **Report Wizard** button to start the Report Wizard.
3. In the first step of the Report wizard you will be asked to select the **Table/Query** and the fields that you want to display in the Report.
 - a. Select the MarksTable.
 - b. Select the fields under the **Available fields** section (as shown in the picture) by first selecting the field and then clicking on the (>) button to transfer to the Selected Fields section.
 - c. To transfer all the fields together you can click on the (>>) button in the Report Wizard.
 - d. When you have transferred all the fields that you want to display in the Report, click on the **Next** button to move over to the next step of the Report wizard.



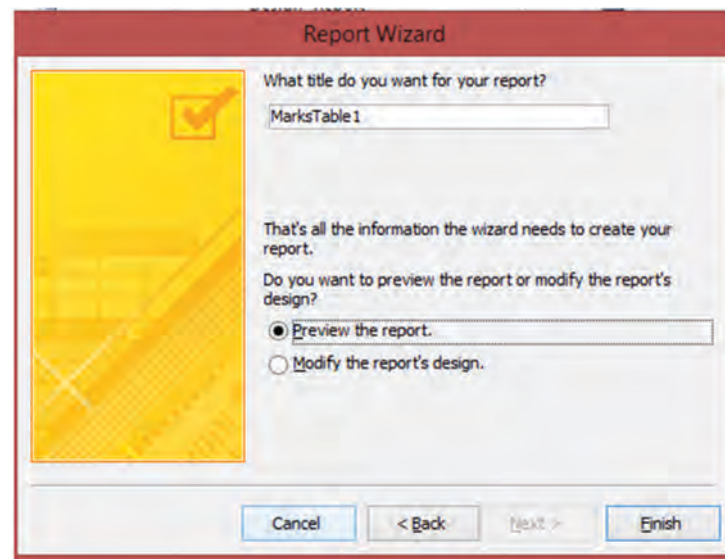
Add fields to the report

4. The next screen will ask you to group data on the basis of any field. Since you do not want to group data, simply click on the **Next** button to go to the next step of the Report wizard.
5. Select the section from the first drop down list. Click **Next**.
Note: By default it will sort in ascending order.
6. Select the **Tabular** layout and click on the **Next** button.
7. Click on the Format from the list of styles and click on the **Next** button again.





Select a layout for the report



Give a title to the report

- In the next step, wizard will ask you to give a name to the Report that will be displayed at the top of the Report. Give a name and click on **Finish**. The Report appears as shown below:

ID	Student_Name	Stu_ID	Maths	English	Science	SST
1	Vishal	SB-12341	78	89	98	67
2	Rekha Sharma	SB-12342	87	89	89	76
3	Vivek	SB-12343	66	79	50	80
4	Rahul	SB-12344	88	99	77	66
5	Ajay	SB-12345	99	99	89	89
6	Vinay	SB-12346	56	78	78	78

Final report being displayed in the Report View



- You can print the report by clicking on the **File** tab and selecting **Print** and then making requisite entries in the **Print** backstage view.



Remember

- Clicking on the Report button in the Reports group will instantly format the table/query data in the form of a report. The Report Design option allows you to create reports in the Design view.

Activity

State whether these statements are 'True' or 'False'.

- You can convert a form into a report by following steps of the Report Wizard. _____
- You can also create a report in the Design view. _____
- Reports can be used to edit data entered into a database table. _____
- A report can contain data from multiple tables or queries. _____
- Options to create a report lie in the Database Tools tab. _____



POINTS to Recall

- A query is a database object that helps you to retrieve and view specific information from the table(s) in a database.
- You can create a select query using the Simple Query wizard feature in MS Access 2010.
- You can also create queries in the Query Design view.
- In the Design view, the Query Design grid is divided into two parts – the top part contains tables on which the query is to be based and the bottom part contains the Design grid for selecting fields and the setting up of criteria.
- Criteria determines how the records will be filtered and displayed in the query output.
- A form is a database object that allows the user to add, update and edit data in a table, one record at a time.
- Report is a way to organize and summarize data for viewing or printing.
- Report can be created using the Report wizard feature given on the Reports group under the Create tab.



TERMS to Learn

- Query** : A database object used to view selective data from a table/query.
- Form** : An interactive object that allows you to enter data into a table/database.
- Report** : Data from a table/query presented in a formatted manner for printing.
- Criteria** : A condition or a set of conditions that help to extract selective data into a query.



Multiple Choice Questions

A. Tick (✓) the correct answer.

- A _____ is an effective way to present data in printed form.
 - Form
 - Query
 - Report
- Which view allows you to change the appearance of a form?
 - Design view
 - Layout view
 - Appearance view
- Which tab contains the commands to create a report?
 - Report tab
 - Create tab
 - Wizard tab
- Conditions in the Query Design window are given in the _____.
 - Criteria row
 - Query row
 - Fields row
- Which view helps you to specify a query criteria?
 - Design view
 - Datasheet view
 - Pivot Table view
- How many views does Access Provide to display a form?
 - Two
 - Three
 - Four

B. Fill in the blanks with the help given hints.

- A _____ is a user friendly database object used to add and delete records in a table one at a time.
- Queries are created on the data given in a _____.
- In the design view, the query window has _____ parts.
- You can set criteria in a query using the _____ row of the Query Design window.
- A _____ is an effective way to organize and summarize data for viewing or printing.
- In a query, the _____ property displays the selected field names from the table.

HINTS: Tables Criteria Report Field Form Two

C. Write 'T' for True and 'F' for False statement in the .

- You can use the criteria row in Query design window to specify multiple criteria.
- The bottom pane of the select query window displays the Design grid.
- MS Access provides you with two types of queries.
- A form cannot be used for editing records in a table.
- The query design window is divided into two parts.
- To specify multiple criteria, OR property is used.
- The top section of a query window display selected table.

D. Very Short Answer Questions.

1. Name the various objects of Microsoft Access.

2. Which option is used to change the appearance and size of various controls of a form?

3. Name the two parts of Query Window.

E. Short Answer Questions.

1. What is a query in MS Access?

2. What do you understand by a form?

3. What is a report in MS Access?

4. How many types of queries can be created in MS Access?

5. Name three views in which a form can be displayed.

F. Long Answer Questions.

1. What is the use of Criteria row in the query design grid?

2. Distinguish between a query and a form.

3. Describe the various navigation buttons given on a form window.

4. Explain the parts of Query window.



Activity Time

Practical 1: Creating a table Teachers that stores the following details about your teachers.

Field name	Data type	Description
Tcode	Text	Teacher code
Tname	Text	Name of the teacher
Gender	Text	Male or Female
Subject	Text	The subject taught
Level	Text	Senior or Middle or Junior school

Carry out the following tasks:

- Enter 10 records into the table.
- Create a query to display the list of teachers teaching your favourite subjects.
- Create a query to display the records of the teachers in Junior school.
- Display the records of the teachers in the Senior school.
- Display the names of the Mathematics teachers in your school.

Practical 2 : Create a database with the name T20 and perform the following tasks on the tables. The structure of the tables are given below.

Table 1 :

Field Name	Cricketer_ID	Name	Age	Category	Strong points	Weak_points	Average
Data Type	Short text	Short text	Number	Short Text	Short Text	Short Text	Number

Table 2 :

Field Name	Match_ID	Cricketer_ID	Runs_Scored	Wickets_Taken	Catches
Data type	Short text	Short text	Number	Number	Number

1. Create a query to retrieve the following records :
 - (a) Cricketers of the age below 25 with their names.
 - (b) Cricketers who have scored more than 2000 runs and taken more than 50 wickets.
 - (c) Cricketers who have scored more than 2000 runs or who have taken more than 50 catches.
2. Create a form for each of the table. Add ten records in each table.
3. Create a report which shows the name of each cricketer and the runs scored by that cricketer.