Access Basics: Understanding the Access Program Screen

Look at Figure 1.1 and then refer to Table 1.1 for details about each item.

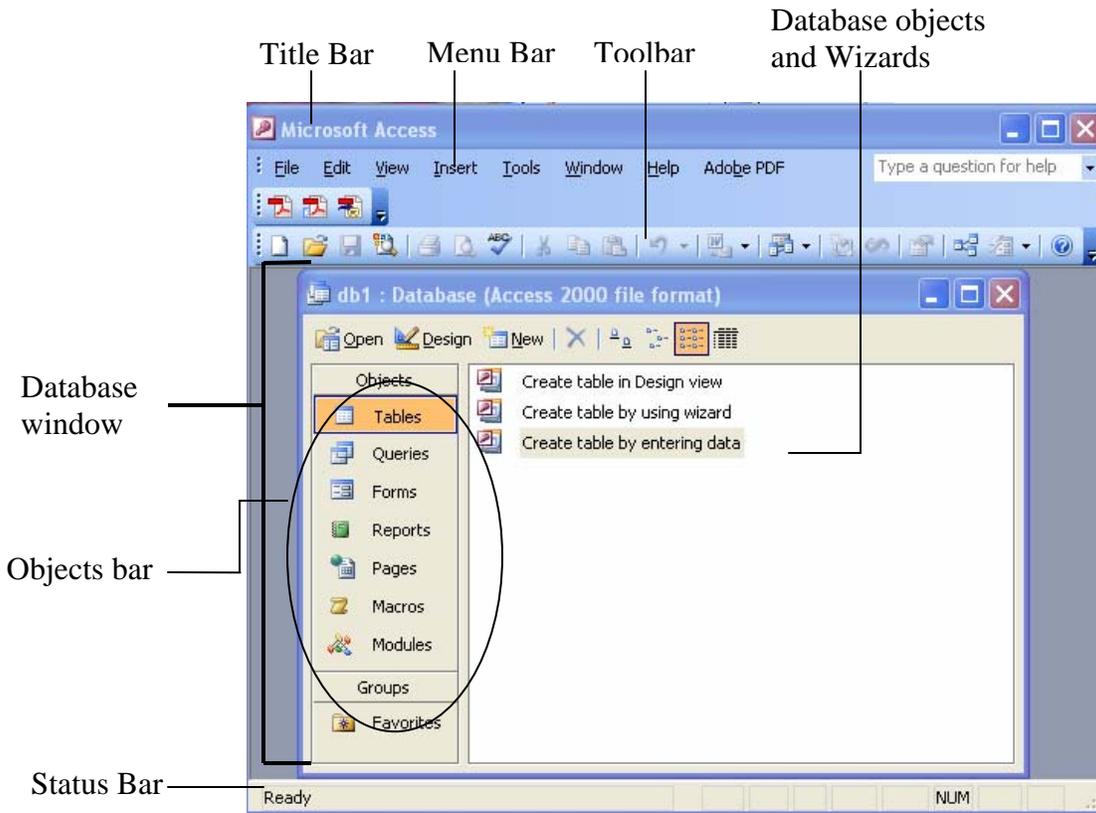**Figure 1.1: The Microsoft Access Screen**

Table 1.1: The Access Program Screen

Element	What It's Used For
Title Bar	Displays the name of the program you are currently using (in this case, Microsoft Access). The title bar appears at the top of all Windows programs.
Menu Bar	Displays a list of menus you use to give commands to Access. Clicking a menu name displays a list of commands for example; click the Edit menu name would display different formatting commands.
Toolbar	Toolbars are short cuts. They contain buttons for the most commonly used commands (instead of having to wade through several menus). The toolbars in Access change depending on what you are working on. The database toolbar (the toolbar currently displayed) contains buttons for the Access commands that you will use most often, such as opening and printing databases.
Database Window	The command center for a database, the Database window, allows you to view, create, edit, and modify database objects.

Objects Bar	The Objects bar categorizes the different types of database objects. Each type of database object has its own icon to view a type of object, click its icon on the Objects bar.
Database Objects	Database objects are the basic components that make up a database. Database objects include tables, queries, forms, reports, pages, macros, and modules.
Status Bar	Displays messages and feedback. The Status bar is especially important in Access since it can give you meaningful information and messages when you are entering information into a database.

Understanding the Access Database Objects

Look at Figure 1.2 and then refer to Table 1.2 for details about each item.

Figure 1.2: The database window contains all the database objects for a particular application.
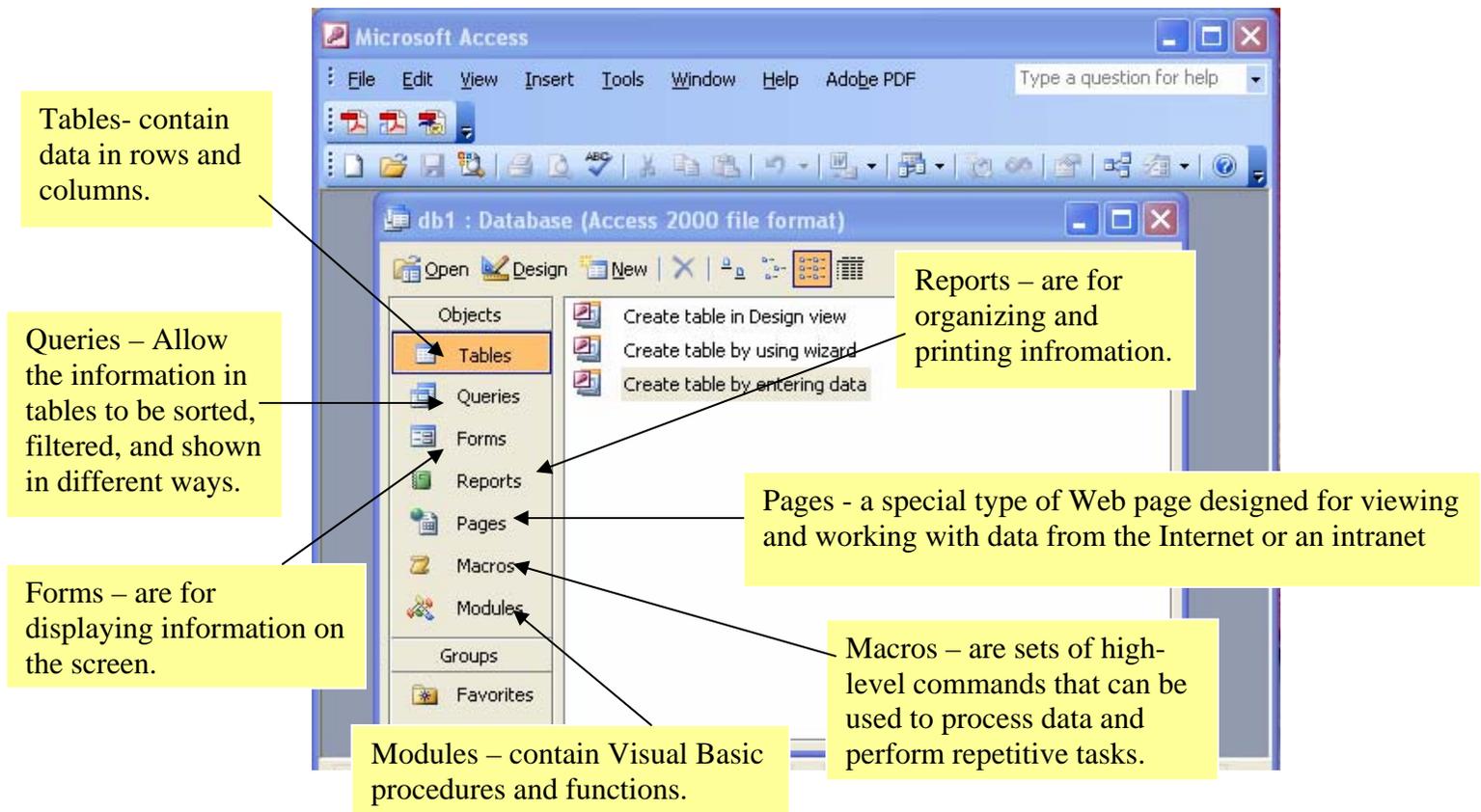

Tables- contain data in rows and columns.

Queries – Allow the information in tables to be sorted, filtered, and shown in different ways.

Forms – are for displaying information on the screen.

Reports – are for organizing and printing infromation.

Pages - a special type of Web page designed for viewing and working with data from the Internet or an intranet

Macros – are sets of high-level commands that can be used to process data and perform repetitive tasks.

Modules – contain Visual Basic procedures and functions.

	Tables store a database's data in rows (records) and columns (fields). For example, one table could store a list of customers and their addresses while another table could store the customers' orders.
	Queries ask a question of data stored in a table. For example, a query might only display customers who are from Texas.
	Forms are custom screens that provide an easy way to enter and view data in a table or query.
	Reports present data from a table or query in a printed format.
	A special type of Web page designed for viewing and working with Microsoft Access data from an intranet or the Internet.
	Macros help you perform routine tasks by automating them into a single command. For example, you could create a macro that automatically opens and prints a report.
	Like, automate tasks but by using a built-in programming language called Visual Basic or VB. Modules are much more powerful and complex than macros.

Understanding the Database Window Toolbar

Look at Figure 1.3 and then refer to Table 1.3 for details about each item.

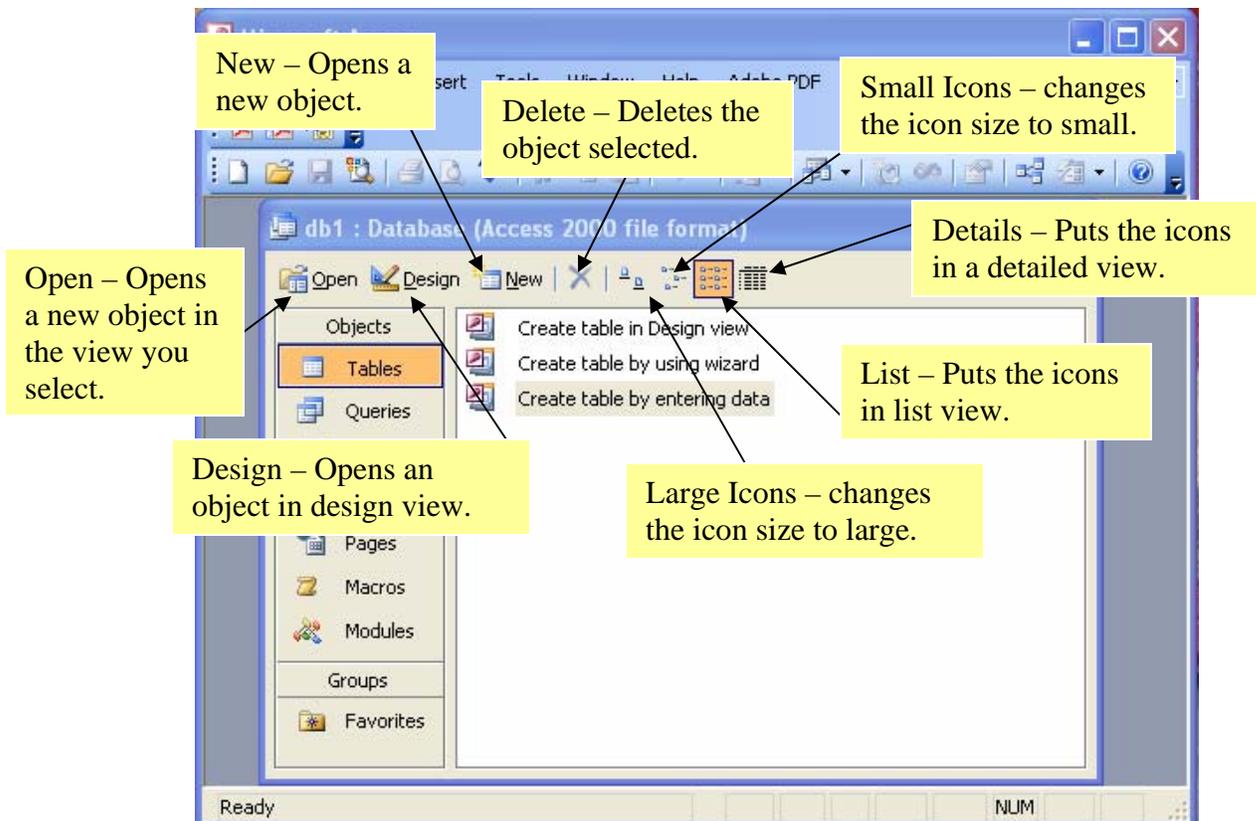**Figure 1.3: The Database Window Toolbar**

Open	To open a database object, select the object and click the Database window's Open button.
Design	To open a database object in design view, select the object and click on the Database window's Design button.
New	To open a new object click on the Database's New button.
X	To delete a database object, select the object and click the Database's Delete button.
	To view the objects with large icons, click the Database's Large Icon button.
	To view the objects with small icons, click the Database's Small Icon button.
	To view the objects in a list view, click the Database's List button.
	To view the objects in a detailed view, click the Database's Detail button.

Using the Table Datasheet and Query Datasheet toolbars

The **Table Datasheet** and **Query Datasheet** toolbars provide many of the tools you need to find, edit, and print records.
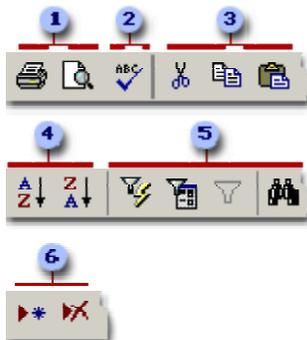
1 Print or preview data

2 Check spelling

3 Cut, copy, or paste selected text, fields, whole records, or the entire datasheet

4 Sort records

5 Filter records, and find or replace values

6 Add or delete records

Access Intermediate I and II

Working with Tables

A table is a collection of data about a specific topic, such as students or contacts. Using a separate table for each topic means that you store that data only once, which makes your database more efficient, and reduces data-entry errors.

Tables organize data into columns (called **fields**) and rows (called **records**).

Each field in the Employees table contains the same type of information for every employee, such as Employee ID (Employee ID). This is an example of a Column.

Each record in an Employee table contains all of the information about one employee, such as their Last Name, First Name, Title, Title of Courtesey, Birth Date, and Hire Date, etc... This is an example of a Row.

Creating a Table

When Microsoft Access first starts up, it opens the Microsoft Access screen. Click the **Blank Database** button ⬚ at the top of the toolbar.

A New File dialog box is automatically displayed to the right of the Microsoft Access screen with options to create a new database or open an existing one. Click **Blank Database**.

A File New Database dialog box is automatically displayed. Specify a name and location for the database and click **Create**. (Below is the screen that shows up following this step)
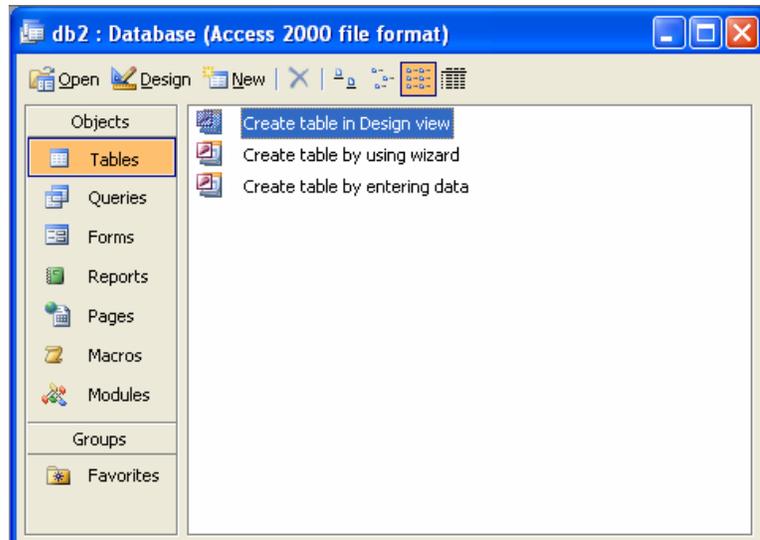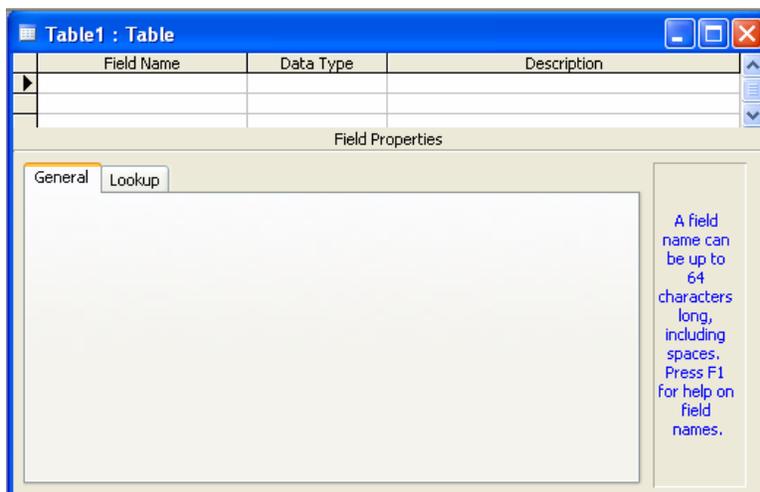
Creating a Table in Design View

1. To create a table in Design View, click the Tables object in the Objects Bar.
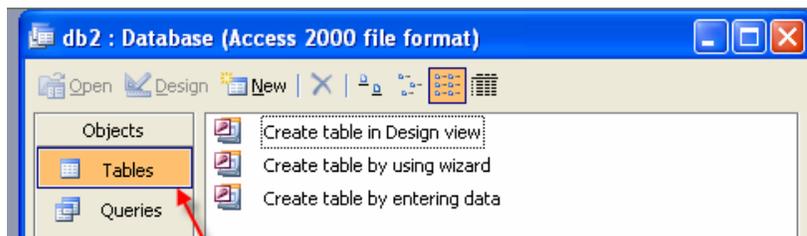
Click the Tables object in the Objects Bar.

2. Double-click Create table in Design view.
3. The Design view dialog box will automatically open.

4. Define each of the fields in your table.
   - o Under the Field Name column, enter the categories of your table.
   - o Under Data Type column, enter the type you want for you categories.
     - ▪ The attribute of a variable or field that determines what kind of data it can hold. For example, in a Microsoft Access database, the Text and Memo field data types allow the field to store either text or numbers, but the Number data type will allow the field to store numbers only. Number data type fields store numerical data that will be used in mathematical calculations. Use the Currency data type to display or calculate currency values. Other data types are Date/Time, Yes/No, Auto Number, and OLE object (Picture).
   - o Under the Description column, enter the text that describes what you field is. (This field is optional).

Designate a Primary Key

- One or more fields (columns) whose value or values uniquely identify each record in a table. A primary key does not allow Null values and must always have a unique value. A primary key is used to relate a table to foreign keys in other tables.
- **NOTE:** You do not have to define a primary key, but it's usually a good idea. If you don't define a primary key, Microsoft Access asks you if you would like to create one when you save the table.
- Make the **Soc Sec #** field the primary key, meaning that *every* student has a social security number and no 2 are the same.
   - o To do this, simply select the Soc Sec # field and select the primary key button

o After you do this, Save the table

Switching Views

- To switch views form the datasheet (spreadsheet view) and the design view, simply click the button in the top-left hand corner of the Access program.

Datasheet View	Design View
Displays the view, which allows you to enter raw data into your database table.	Displays the view, which allows you to enter fields, data-types, and descriptions into your database table.

Entering Data

- Click on the Datasheet View and simply start "chugging" away by entering the data into each field. **NOTE:** Before starting a new record, the **Soc Sec #** field must have something in it, because it is the Primary Key. If you did not set a Primary Key then it is OK.

Manipulating Data

- **Adding a new row**
  - Simply drop down to a new line and enter the information
- **Updating a record**
  - Simply select the record and field you want to update, and change its data with what you want
- **Deleting a record**
  - Simply select the entire row and hit the Delete Key on the keyboard

Advanced Table Features w/Microsoft Access

- **Assigning a field a specific set of characters**

  - Example) Making a Social Security Number only allows 9 characters.
    1. Switch to Design View
    2. Select the field you want to alter
    3. At the bottom select the General Tab
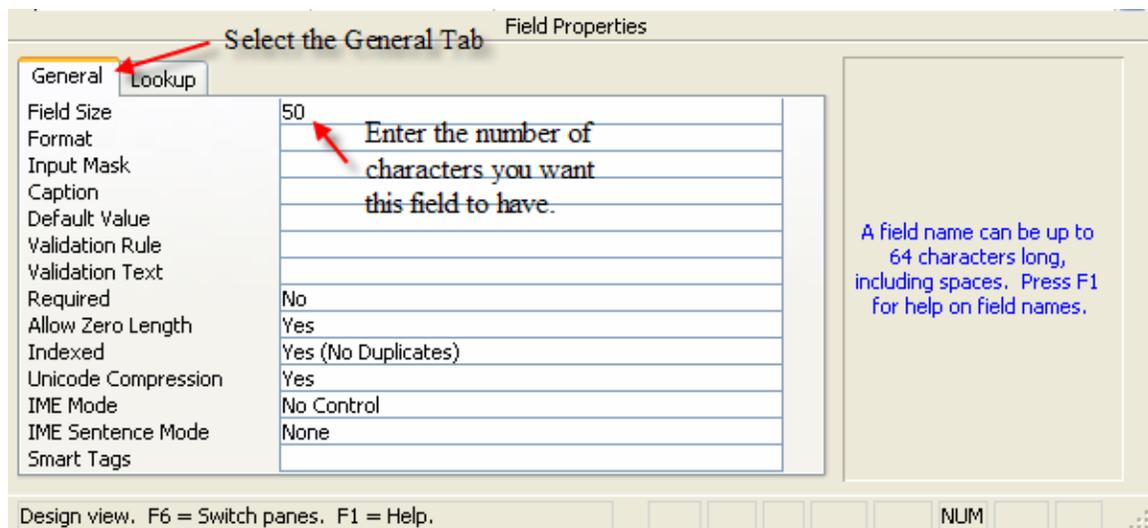
    4. Select **Field Size**
    5. Enter the number of characters you want this field to have

- **Formatting a field to look a specific way**

  - Example) Formatting Phone Number w/ Area Code (xxx) xxx-xxxx
    1. Switch to Design View
    2. Select the field you want to format
    3. At the bottom select the General Tab
    4. Select **Input Mask Box** and click on the button at the right.
   5. Select Phone Number option
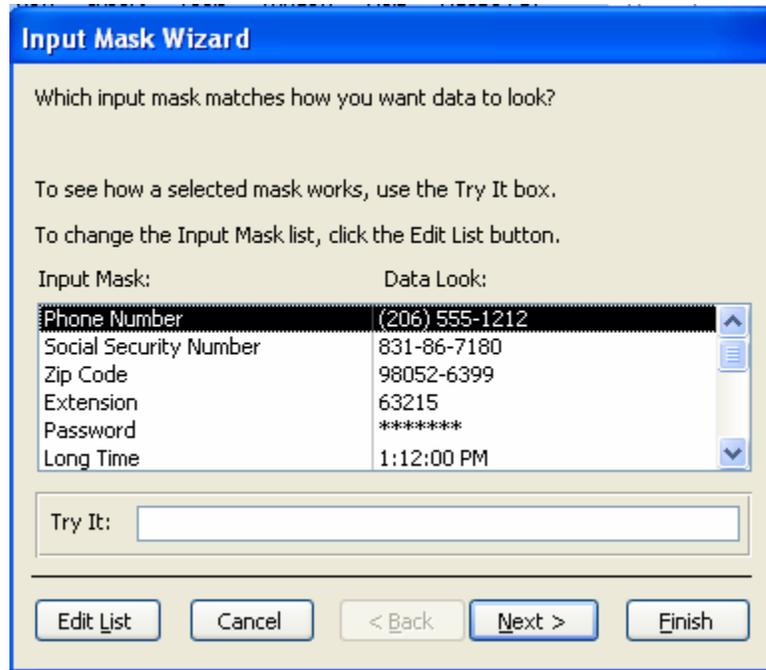
6. Click on Next
7. Leave *!(999) 000-0000 the way it is*. This is a default.
8. Click Next
9. Select which option you want it to look like
10. Click Next
11. Click Finish

- **Selecting a value from a dropdown box with a set of values that you assign to it. This saves you from typing it in each time**

  - o Example) Choosing a city that is either Houston, Stafford, Clear Lake, Alvin, or Missouri City
    1. Switch to Design View
    2. Select the field you want to alter (City)
    3. At the bottom select the Lookup Tab
    4. In the **Display Control** box, select **Combo Box**
    5. Under **Row Source Type**, select **Value List**
    6. Under **Row Source**, enter the values how you want them displayed, separated by a comma. (Houston, Stafford, Clear Lake, Alvin, or Missouri City)

NOTE: This will not alphabetize them for you, so you will have to do that yourself. It should look something like this:
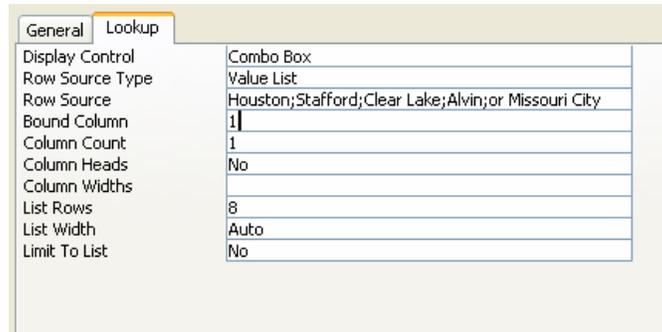
7. Select in the datasheet view and you should see the change when you go to the city field.
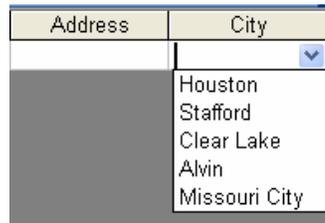

Relationships

After you've set up multiple tables in your Microsoft Access database, you need a way of telling Access how to bring that information back together again. The first step in this process is to define relationships between your tables. After you've done that, you can create queries, forms, and reports to display information from several tables at once.

A relationship works by matching data in key fields - usually a field with the same name in both tables. In most cases, these matching fields are the primary key from one table, which provides a unique identifier for each record, and a foreign key in the other table. For example, teachers can be associated with the students they're responsible for by creating a relationship between the teacher's table and the student's table using the TeacherID fields.

Having met the criteria above, follow these steps for creating relationships between tables.

1. In the database window view, at the top, click on Tools ---> Relationships
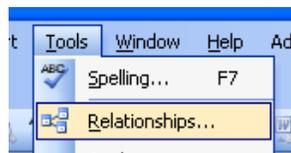
2. Select the Tables you want to link together, by clicking on them and selecting the **Add** Button. When you are finished added your tables, click the close button.
3. Drag the primary key of the Parent table (Teachers in this case), and drop it into the same field in the Child table (Student Records in this case.)

4. Select **Enforce Referential Integrity**
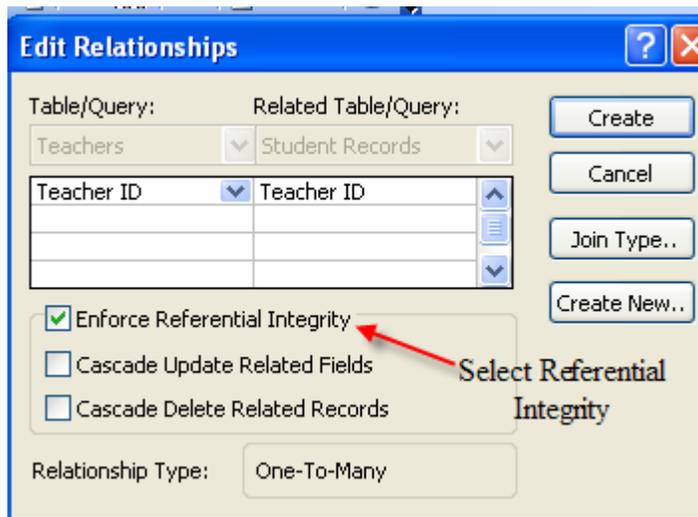
- o When the Cascade Update Related Fields check box is set, changing a primary key value in the primary table automatically updates the matching value in all related records.
- o When the Cascade Delete Related Records check box is set, deleting a record in the primary table deletes any related records in the related table

5. Click Create and Save the Relationship

Access Advanced I

Creating Forms

A form is nothing more than a graphical representation of a table. You can add, update, or delete records in your table by using a form. **NOTE:** Although a form can be named different from a table, they both still manipulate the same information and the same exact data. Hence, if you change a record in a form, it will be changed in the table also.

A form is good to use when you have numerous fields in a table. This way you can see all the fields in one screen, whereas if you were in the table view (datasheet) you would have to keep scrolling to get the field you desire.

Create a Form using the Wizard

It is a good idea to create a form using the wizard, unless you are an advanced user and know what you are doing. Microsoft Access does a good job of creating a form using the wizard. The following steps are needed to create a basic form:

4. To create a form using the Wizard, click the Form object in the Objects Bar.
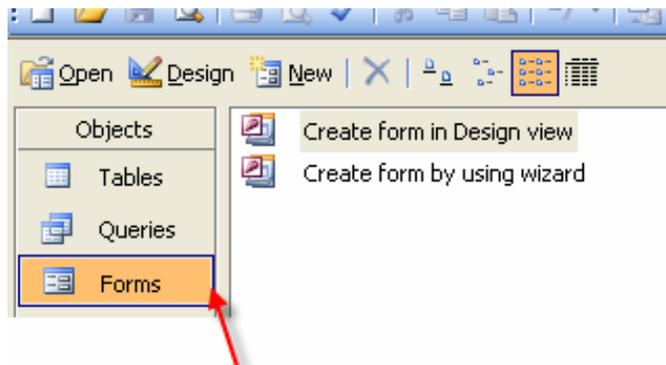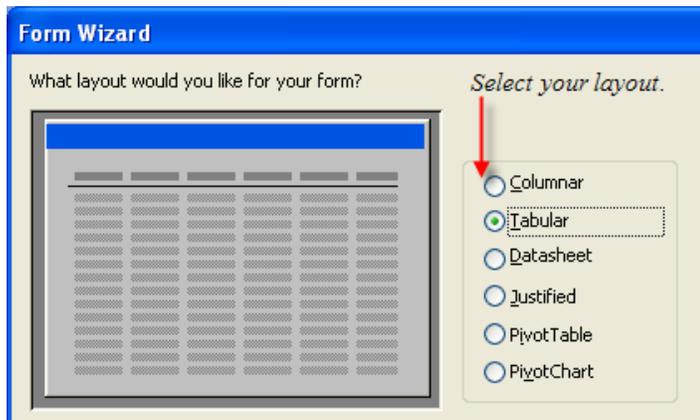


Click the Forms object in the Objects bar.

5. Double-click **Create Form Using Wizard**.
6. The Form Wizard dialog box will automatically open.
7. On the next screen select the table/query you will use to create the form
8. You will select the fields you want to view on your form. Most of the time you would select all of them.
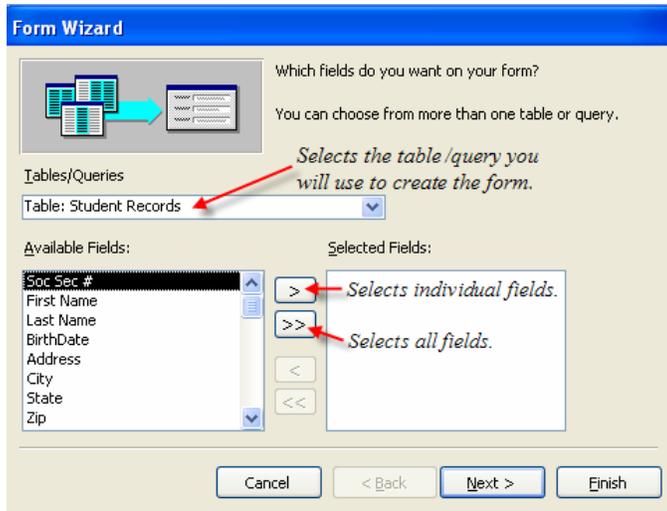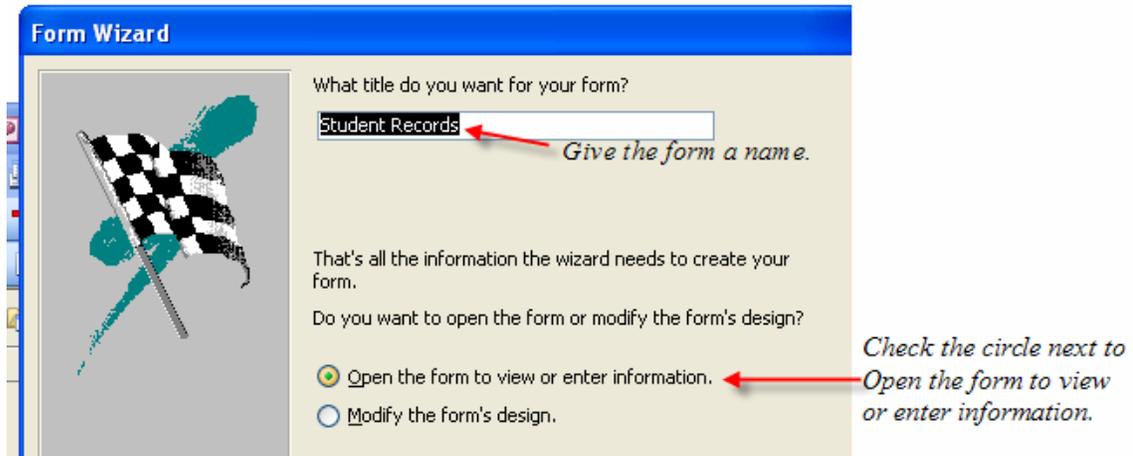
9. Click Next
10. Select the layout you wish

11. Click Next
12. Select the style you desire...**HINT**: if you plan on printing your form, I suggest you use a light background to save on printer toner and ink.
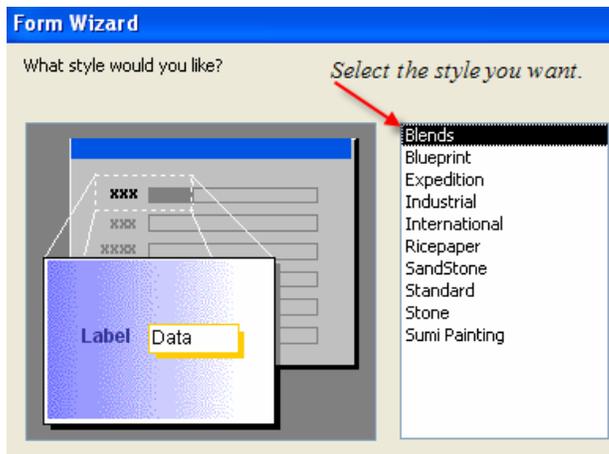
13. Click Next.
14. Give you form a name, and select **Open the Form and enter information.**

15. Select **Finish**
16. You should see your form. To adjust the design of your form, simply hit the design button (same as with the tables), and adjust your form accordingly. Below is what the form will look like when you're finished (depending on the style and layout you choose).
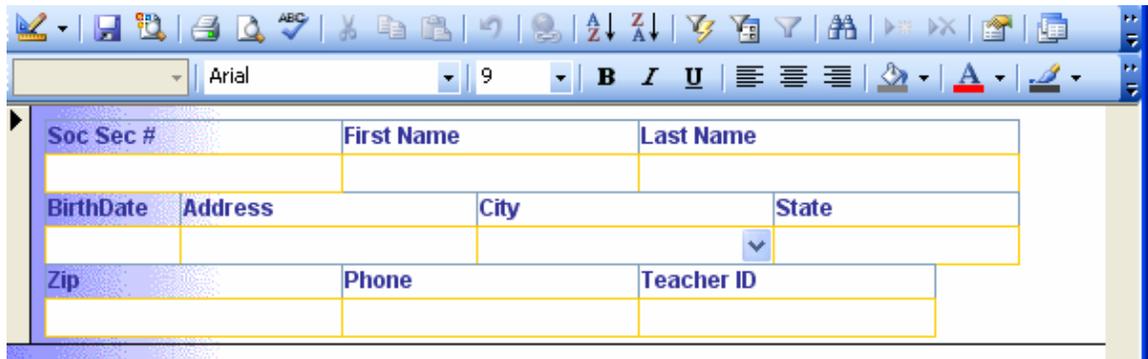
Access Advanced II

Reports

A report is an effective way to present your data in a printed format. Because you have control over the size and appearance of everything on a report, you can display the information the way you want to see it.

Create a Report using the Wizard

As with the Form, it is a good idea to create a report using the wizard, unless you are an advanced user. Microsoft Access does a good job using the wizard to create reports.

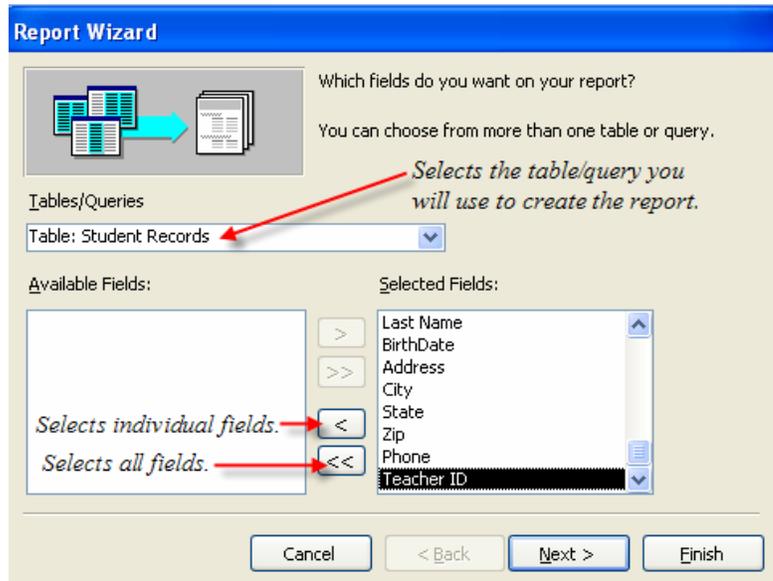17. To create a report using the Wizard, click the Report object in the Objects Bar.
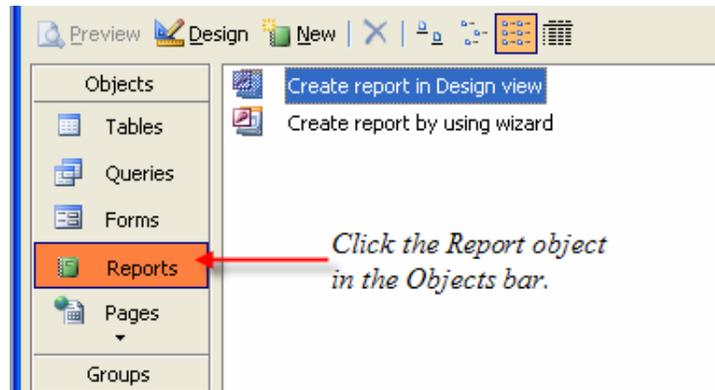
18. Double-click **Create Report Using Wizard**.
19. The Report Wizard dialog box will automatically open.
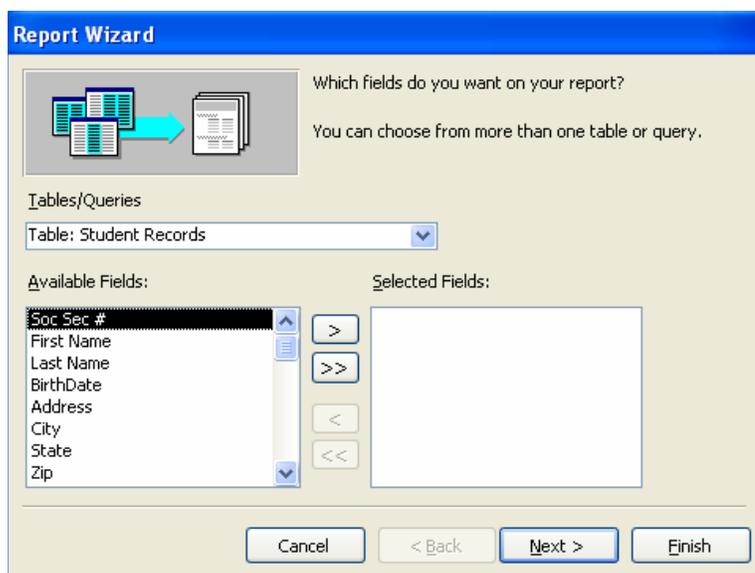
20. On the next screen select the table/query you will use to create the report.
21. Select the fields you want to view on your report.
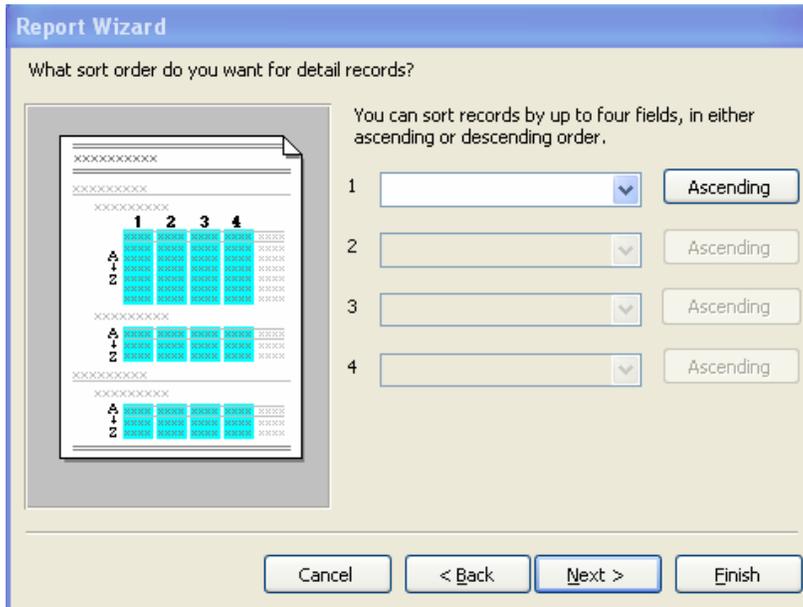

22. Click Next
23. Select if you would like to group your files. Keep repeating this step for as many groupings as you would like.
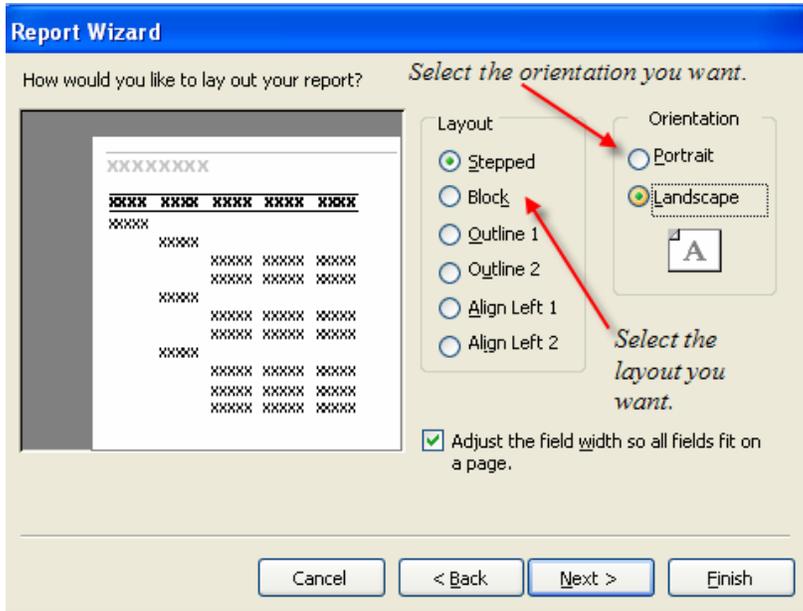

24. Click Next.

25. Select what sort order you want for detail records. Keep repeating this step for up to four fields.
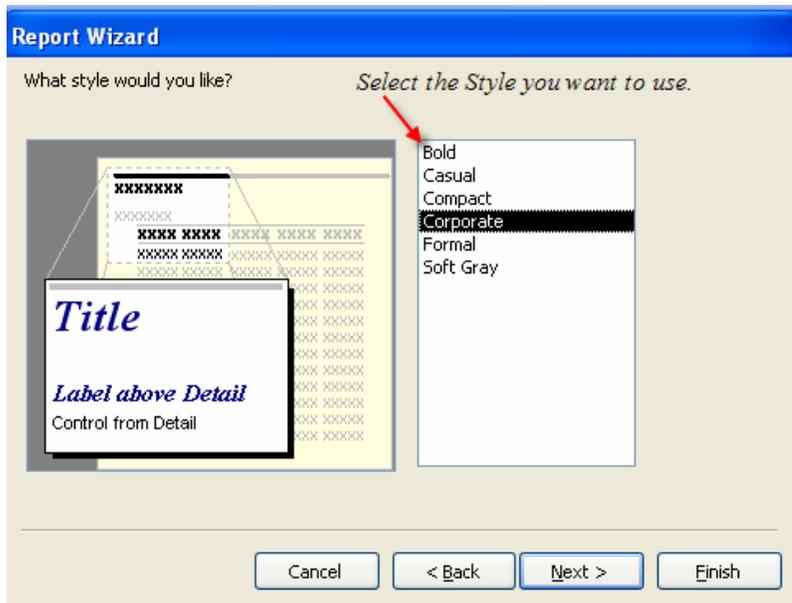

26. Click Next.
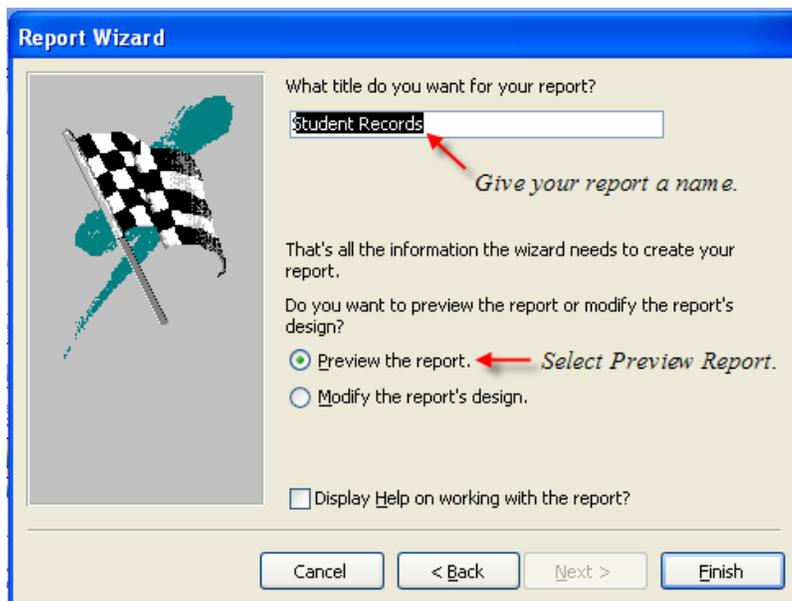27. Select the layout and the paper orientation you desire.

28. Click Next
29. Select the style you desire...**HINT**: if you plan on printing your report, I suggest you use a light background to save on printer toner and ink.

30. Click Next
31. Give you report a name, and select **Preview the Report**.

32. Select **Finish.**
33. You should see your report. To adjust the design of your report, simply hit the design button (same as with the tables), and adjust your report accordingly. Below is what your report should like (depending on the style, layout, grouping, and sort order that you choose).

Student Records

TeacherID	Soc Sec#	FirstName	LastName	bDate	Address	City	State	Zip	Phone