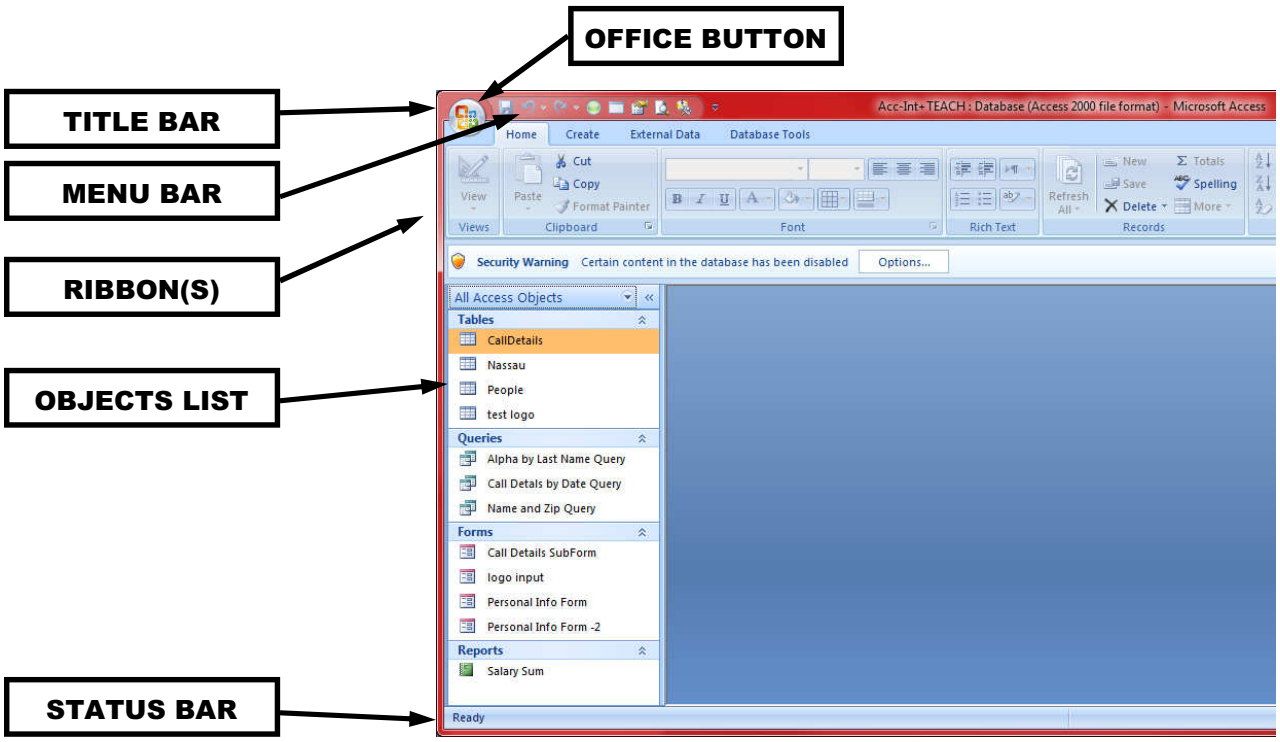
Microsoft Access

Microsoft Access is a database program, used mostly by salespeople. It is a computerized version of a "slide show." Its versatility, however, allows you to do much more with it. Examples of other uses are: organization charts, signs and forms.

The "**Anatomy**" of the Access Window

The Access program window will look similar to that shown below. It is possible to customize your own display, but that is a topic for discussion later on.



Title Bar – Displays the name of the program (in the screen above: Microsoft Access), and usually, the name of the file that you are currently working on. On the right you have the three buttons that make up the "control box." From left-to-right, these buttons are:

Minimize – to shrink the application to the Windows *Task Bar*.
Windowed/Full Screen mode — controls the size of the window.
Close — to close the document window or shut down the program.

Ribbon(s) – Contains every option available in the program.

Tool Bar — Populated with buttons; which are shortcuts to some of the menu choices. You may customize what buttons are on the tool bar.

Objects — Are the components of an Access database (Tables, Queries, Forms, Reports, etc.)..

Status Bar — Shows helpful messages while you use various features of the program.

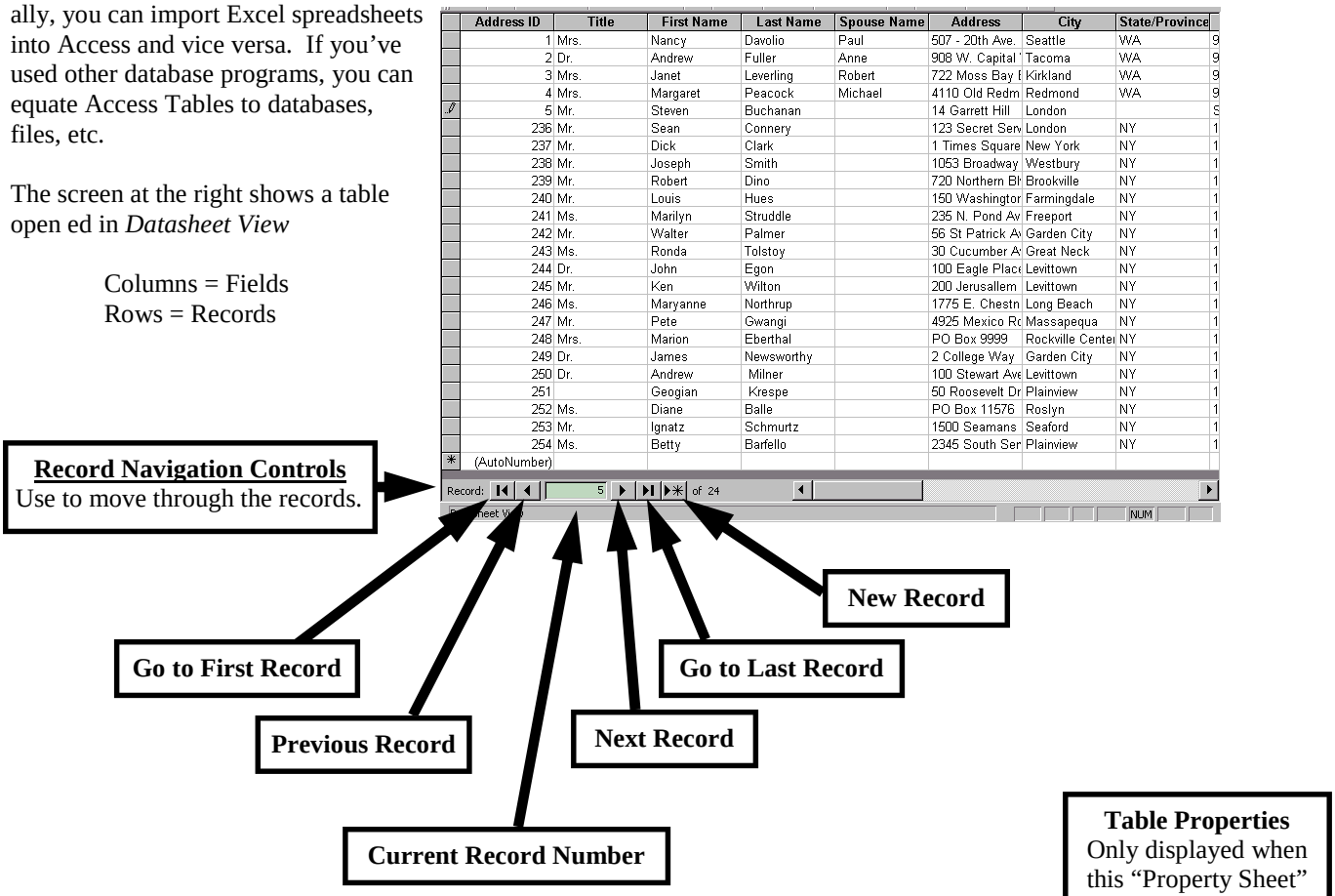
Microsoft Access

Tables

At first site, an access Table looks like a Microsoft Excel spreadsheet. Actually, you can import Excel spreadsheets into Access and vice versa. If you've used other database programs, you can equate Access Tables to databases, files, etc.

The screen at the right shows a table open ed in *Datasheet View*

Columns = Fields
Rows = Records



Record Navigation Controls
Use to move through the records.

Go to First Record

Previous Record

Current Record Number

Next Record

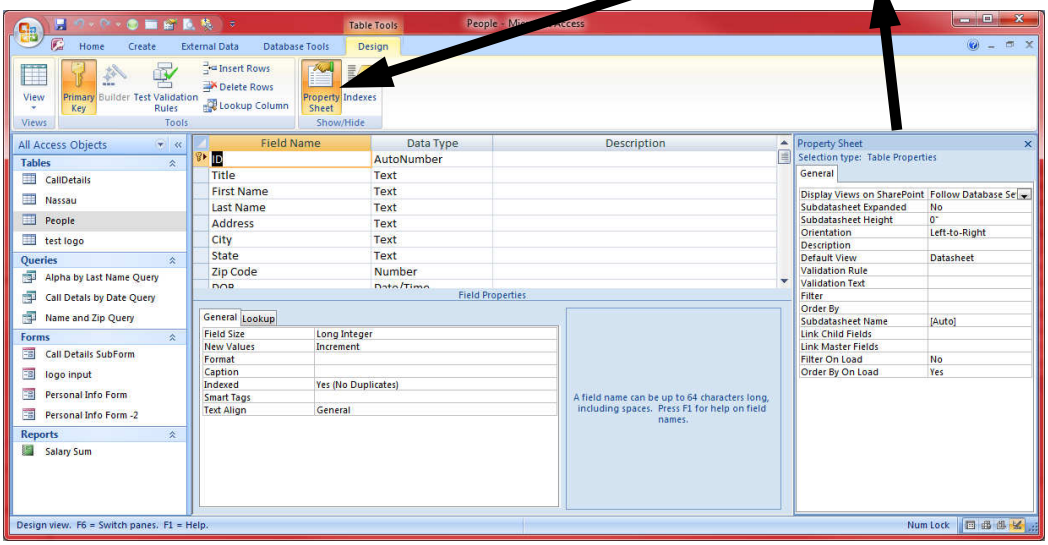
Go to Last Record

New Record

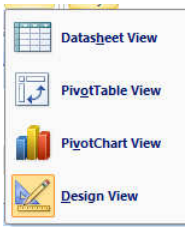
Design View

The figure below shows the table in Design View. Each Field (the columns from the illustration above) can be configured by clicking the field in the upper section and making adjustments to the settings in the lower section.

Table Properties
Only displayed when this "Property Sheet" button is turned "On."



Commonly, you will switch between Datasheet & Design views (on each object type).



For Data input/editing

To design/define the structure

FIELD PROPERTIES

Text and Memo data type field properties

Field Size - Used to vary field lengths, max size is 255 characters.

Format - Allows you to create custom formats for your text string, i.e. '@' = text required, '&' = text is not require, '<' = forced lower case, '>' = forced upper case.

Input Masks - Used to ensure that all data entered into a field was the correct data entry pattern. Forces the user to enter values in an exact format.

Caption - A naming convention given to a field to help the end user input the relevant details. On Forms and Reports, this is referred to as a "Label."

Default Value - A self explanatory field type, automatically populating the field with a pre-defined default string.

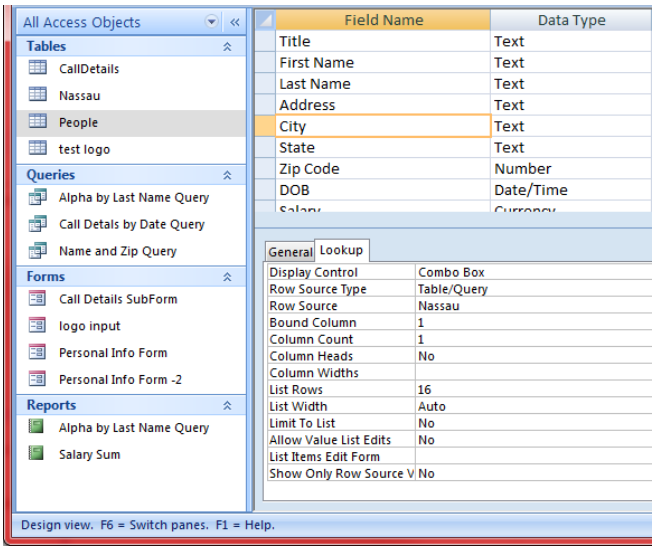
Validation Rule - Allows you to set a formula that limits to values to maintain data integrity.

Validation Text - Used in conjunction with the Validation Rule will display a warning message if the user has not met certain validation rule criteria when populating the field.

Required - Simply a value that denotes whether a field is or is not mandatory.

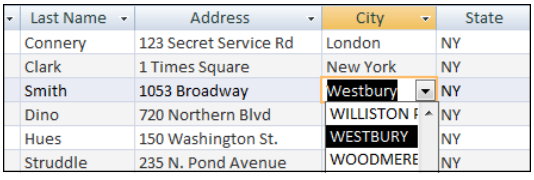
Allow Zero Length - Allows you to control the way that blank fields are handled.

Indexed - The crucial field property for expedient queries, sorting and field manipulation. Indexed fields hold all tables and relationships together.



Lookup fields

You can create a field that gets it's values from another Table or Query. You have seen those pull-down boxes in many computer programs. The data that makes up those lists, in Access, can come from a Table or Query or a simple list that you type in (ie: "Male" and "Female").

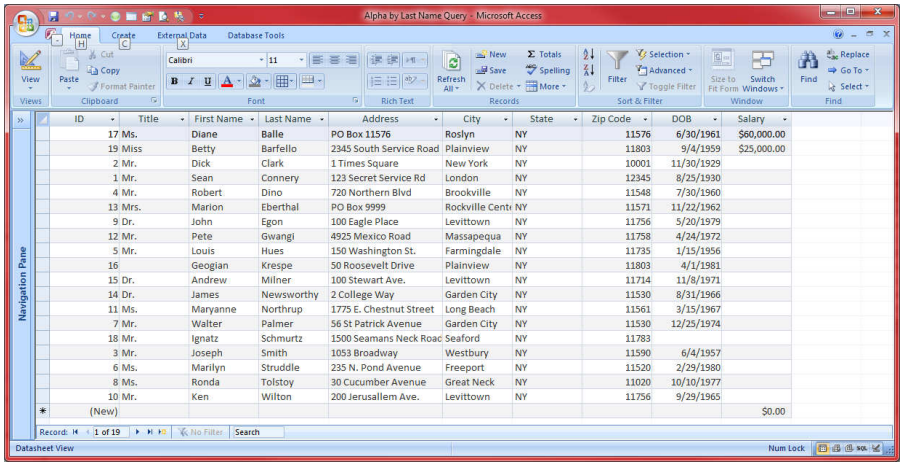


Microsoft Access

Queries

While the Tables hold ALL of the data for ALL of the fields, Queries can be used to:

- Filter out groups of records
- Sort the records
- Limit the fields to be shown
- Build links to other tables (or Queries)
- Merge two tables (aka Append)
- Update data in a table
- Delete records

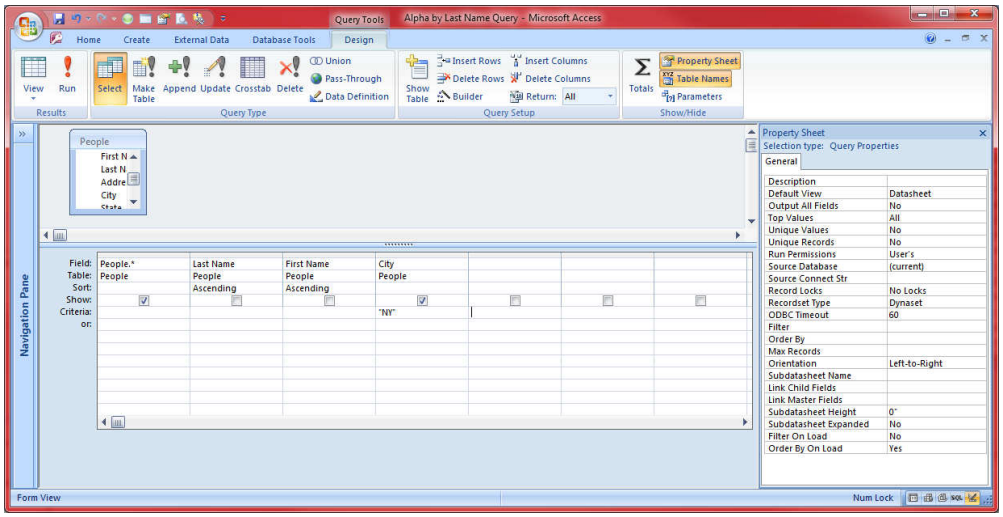


The result from a Query operation (shown at the right) is used just like a Table. The Record Navigation buttons operate exactly the same.

If you **update** data shown in a Query, the record from the source Table is also updated. In effect, *Queries provide "portals" to the actual Table.*

Design View

The design of a Query is shown on the right.



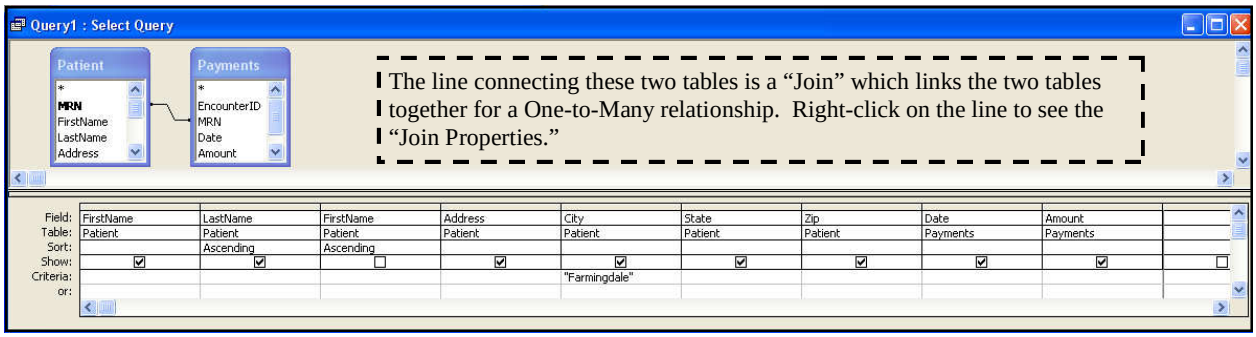
Upper section — is where you place the Table(s) from which you are drawing the information.

Bottom section — is where you list the fields that you want to include in your Query. The order is important as you can sort the results based on multiple fields.

Criteria row — is for you to specify the filters for your Query. For example, to limit a Query on an address book to records that include only the state of NY, you would type "NY" in the criteria box for the state field.

Below is a simple Query that sorts a list of names by Last Name, then First Name. Notice the First name is shown twice but the second instance has the "Show" box unchecked. Sorting is done as you read the list from left –to-right, and an unchecked "Show" box will be hidden.

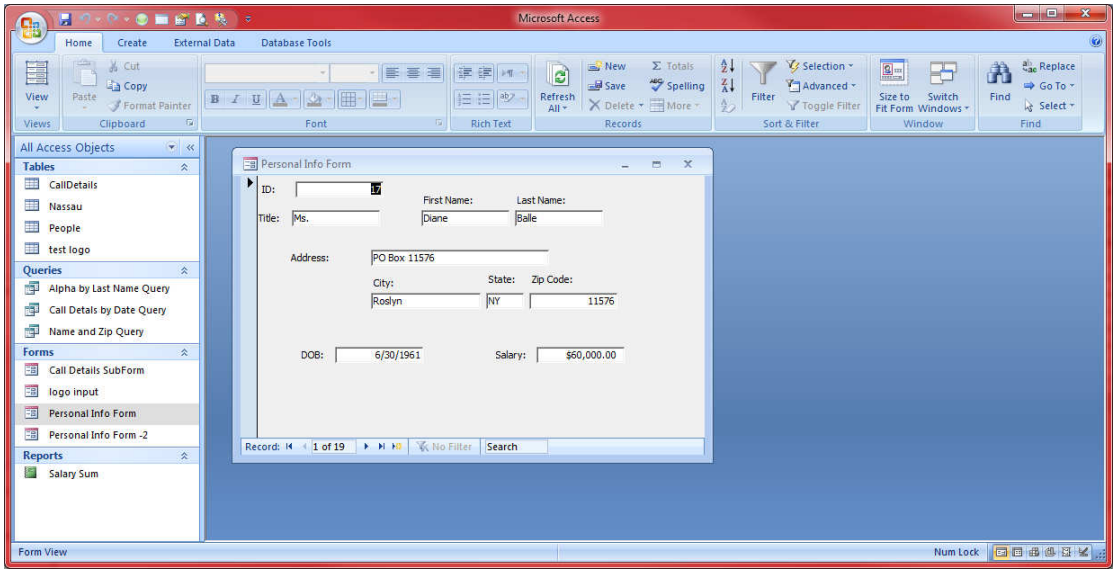
The Query also employs a filter to only show records where the City is "Farmingdale.



Microsoft Access

Forms

It can be quite cumbersome to update records in the views provided by Tables or Queries. The need to scroll to the right to see each field in a large set of data can be confusing.



Forms, like the one shown at the right, are a solution to this and other problems. With forms, you can arrange fields in a window in a logical fashion. Different "looks" are available for different field types. You can also include buttons that control different functions in your "applications."

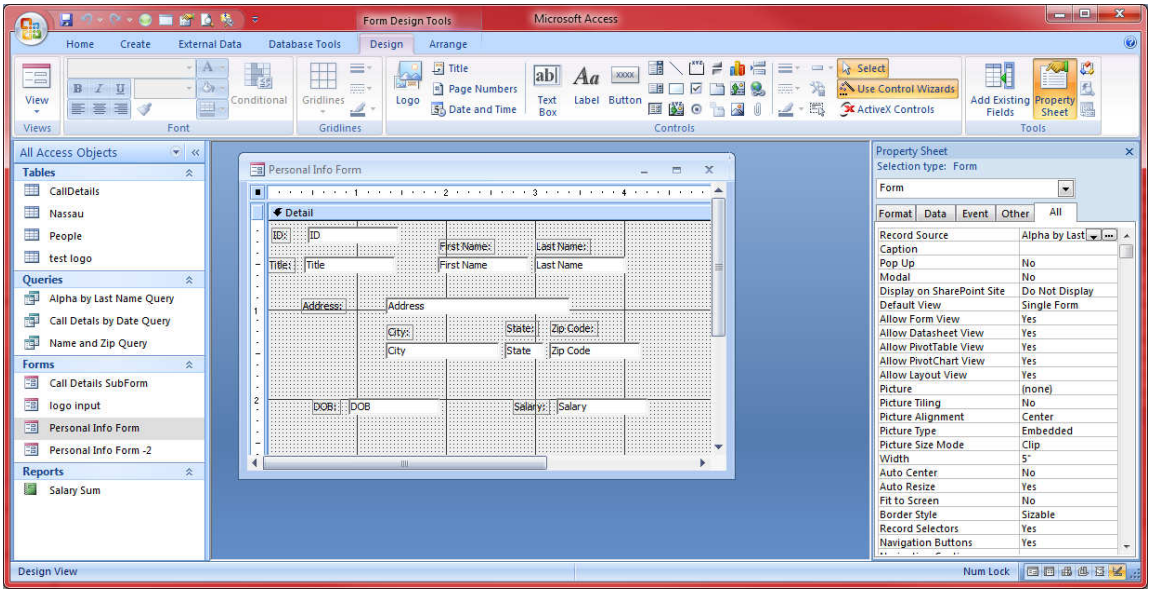
Design View

Forms are driven from Tables or Queries. First you must select which of these you want your form to work from. Then you place the fields in the workspace, arranged as you want them.

Properties — The properties window is your guide to controlling every aspect of each field or screen component. Commonly, the properties you can adjust are:

- Display formats
- Number formats
- Input masks (ie: ###-##-####)
- Validation Rules
- Status bar messages
- Hiding or locking fields
- Tab key navigation order
- Size
- Color
- Font

In more advanced uses, you can control what happens during certain "events," such as what happens when a field is selected or the mouse is moved over a field.

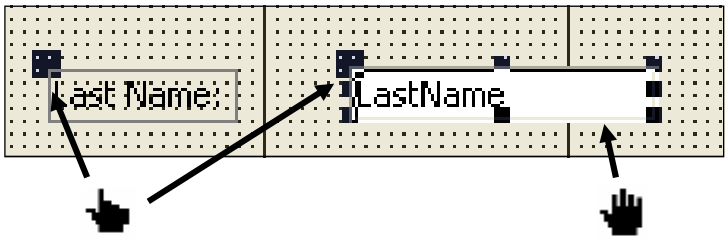


Modifying Objects on a Form or Report

Objects you place on a form may need some changes to their size or position. The process of selecting, moving, sizing, or copying is the same for all types of controls on both forms and reports.

- **Selecting**

  You can select a control by clicking on it with the mouse button. To select several controls, hold down the Shift key while clicking on the objects. You also use a "selection box" (with the pointer tool selected, draw a box around and/or through the objects) to select multiple objects. The selected item(s) will have sizing handles around the edges.



- **Moving a control**

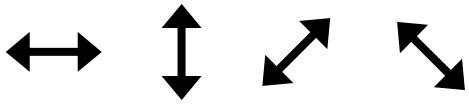
  Click on the control when the cursor looks like a flat hand and drag it to a new location.

- **Moving a label or text box**

  To move a label or data box separately, click on the larger square in the upper left corner of the object and drag & drop while the cursor looks like a pointing finger.

- **Resizing a label or text box**

  Position the cursor over one of the square boxes (sizing handles) and it will change into a double arrow. Drag and drop this arrow cursor to change the size of the control.



- **Edit the text of a label or text box**

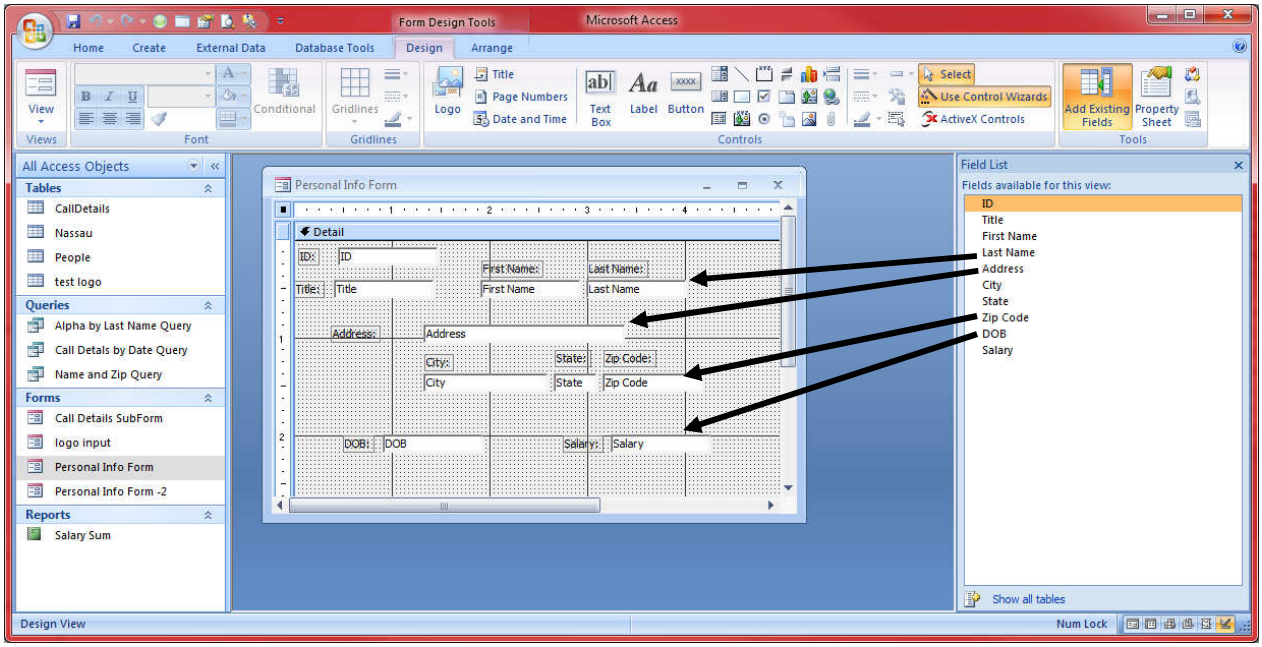
  Click a label or text box once and then you will see the **I –beam**...click while the **I-beam** is there to get the cursor and then edit the contents.

- **Copying and deleting**

  Select the control, by clicking on it, then use the standard Cut, Copy, and Paste commands, or you can press the Delete key to remove the selected control(s).

Now let's create a form (the process is identical to creating a report). From the "Field List," drag the fields onto the form area.

Then, use the skills described on the previous page to move and organize these fields so it looks neat and easy for the data input people to use.



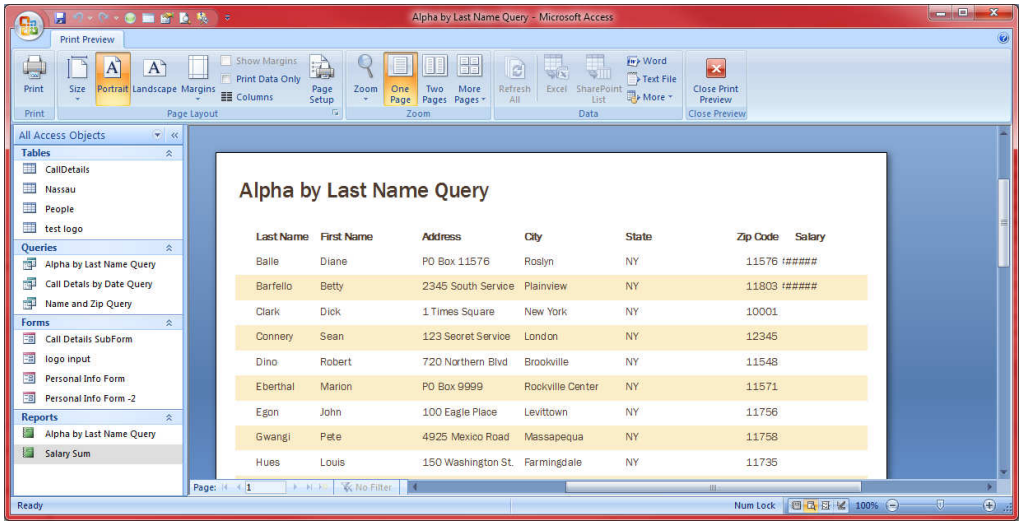
The **Controls** section of the ribbon allows you to add different controls and objects onto the form or report. *On the right is a brief description of each control.*

-Return the standard arrow pointer
-Magic Wand (needed for automatic invoking of help wizards)
-Label
-Text Box (or data field)
-Option Group
-Toggle Button
-Option Button
-Check Box
-Combo Box (aka: Drop-Down List Box)
-List Box
-Button
-Image
-Unbound Object Frame
-Bound Object Frame
-Page Break
-Tab
-Subform/Subreport
-Line
-Rectangle

Reports

Now, you've built and populated a great database; you've provided meaningful Queries and you've simplified data management with Forms. What's left? Well reporting the data, of course. Most commonly, reports are designed to print to paper. The main types of reports available are:

- Column
  (One record per line)
- Form
  (One record per page)
- Mailing Labels

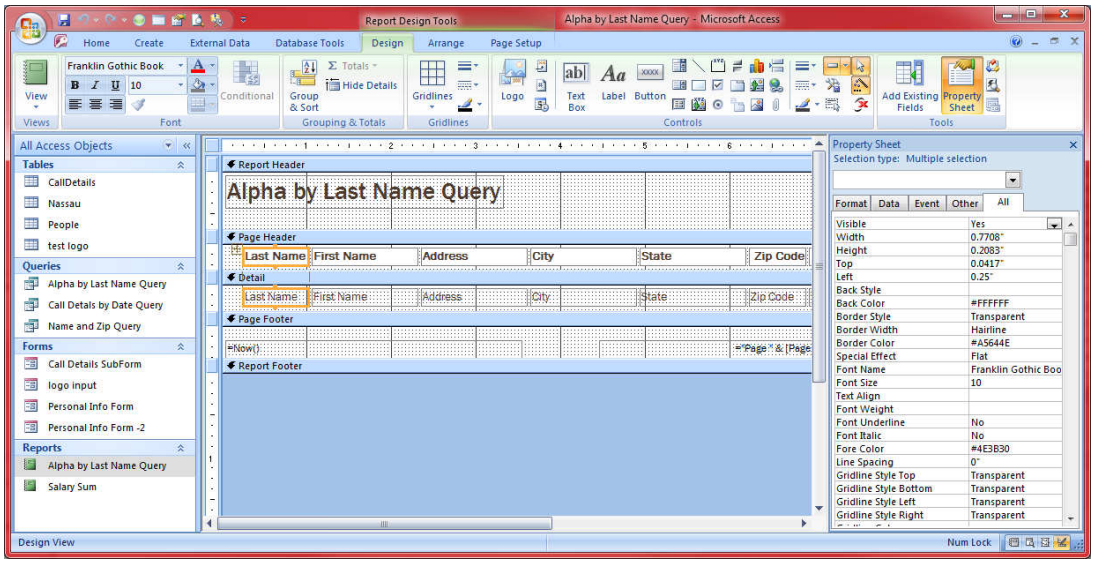


Design View

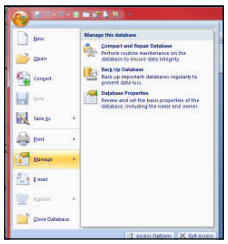
Designing a report is much like designing a Form. The only difference is that your user doesn't have the opportunity to input data to the fields you layout. Reports are also driven from Tables or Queries. First you must select which of these you are reporting from. Then you place the fields in the workspace, arranged as you want them.

Properties — The properties window is also similar to that of a Form. Commonly, the object properties you can adjust are:

- Display formats
- Number formats
- Hiding fields
- Size
- Color
- Font
- "Can Grow" and "Can Shrink"



Mailing Labels — are a very useful report and there are many standard Avery label formats for you to choose from in the Mailing Label "Wizard."



Compact and Repair Database

Each time you use your Access database, the file size will grow larger—even if you added no records, or (oddly enough) you deleted data! To shrink the file size (and also to repair DAMAGED databases, you can run a "Compact and Repair Database," which can be found at:

Office Button → Manage → Compact and Repair Database