

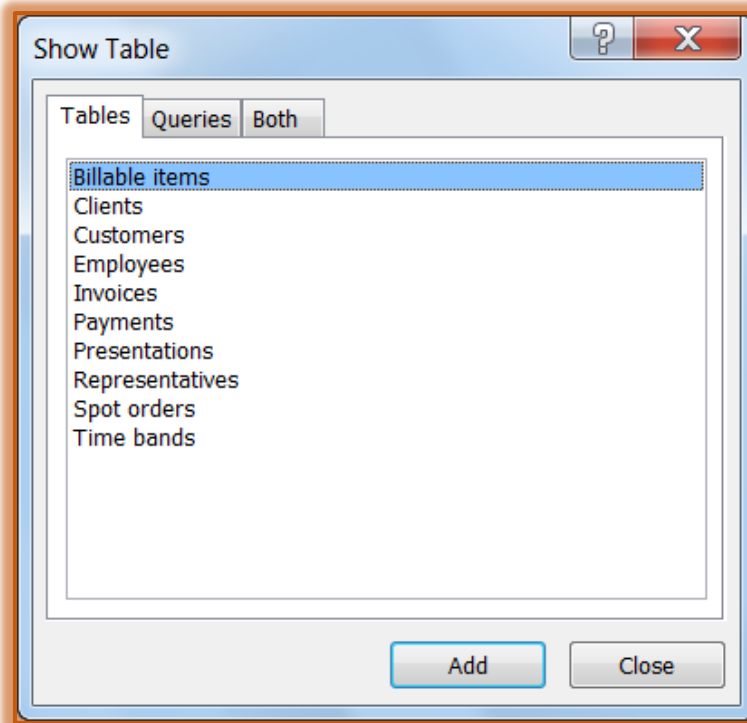
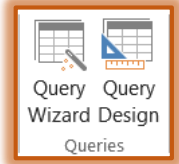
## ADD CALCULATED FIELDS TO SELECT QUERIES

### Create a Parameter Query

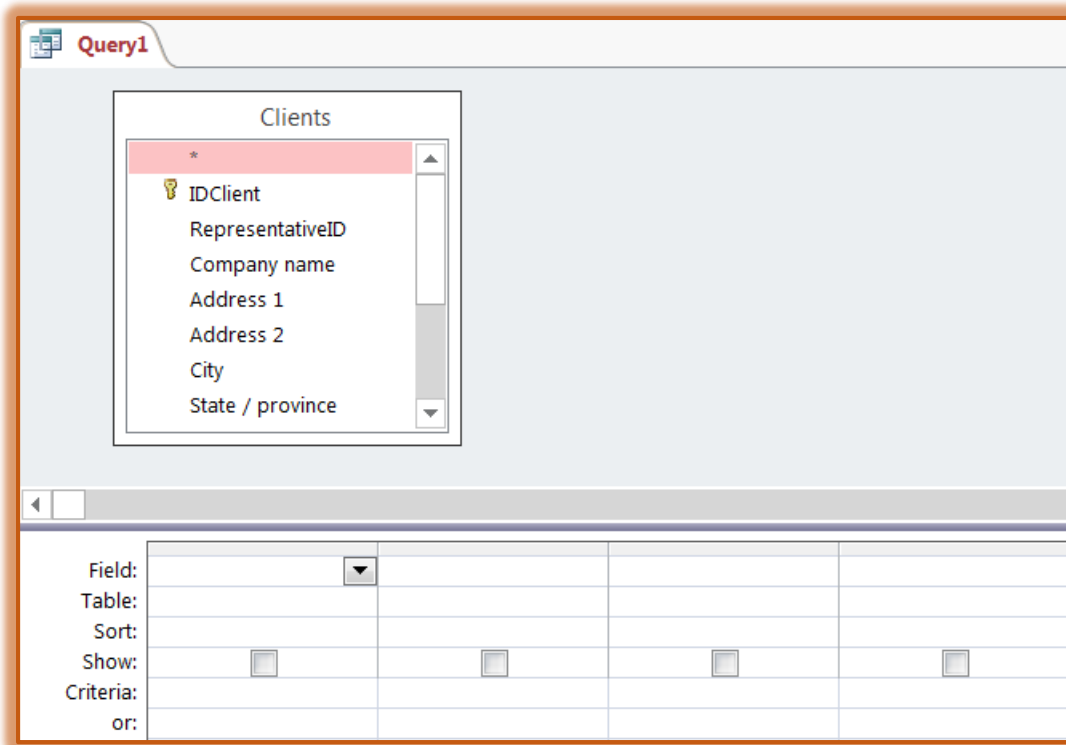
(You may have already completed this section of the exercise if you did the exercise on Creating a Parameter Query.)

This type of query is used to extract data from a table that meets the criteria input by the operator. It is a good query to use when looking for data that meets very precise criteria. We will be using the **Access Training-Database1** for this lesson. This database is located in the folder that was downloaded from the **Access 2013 Training Web Page**.

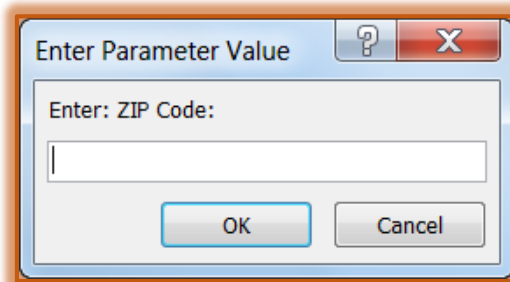
- ✦ Click the **Create Tab**.
- ✦ In the **Queries Group**, click the **Query Design** button (see illustration at right).
- ✦ The **Show Tables** dialog box will display (see illustration below).



- ✦ From the **Show Tables** list choose **Clients**.
- ✦ Click the **Add** button to add this table to the **Design** grid.
- ✦ Click the **Close** button to exit from the **Show Tables** dialog box.
- ✦ The **Query Design** window will display (see illustration top of next page).
- ✦ Select the following fields from the **Clients** table box in the order specified.
  - ✦ Zip/postal
  - ✦ Company name
  - ✦ Address 1
  - ✦ Address 2
  - ✦ City
  - ✦ State/province
  - ✦ Phone 1
  - ✦ Phone 2
  - ✦ Email
- ✦ In the column for **Zip/postal**, click the **Criteria** cell.
- ✦ Type **[Enter ZIP code:]**.
- ✦ Save the query using one of the following methods:
  - ✦ Click the **File Tab** and then click **Save**.
  - ✦ Click the **Save** button on the **Quick Access** toolbar.



- ✚ The name for the query is **Show clients by ZIP code**.
- ✚ Click **OK** to save the query.
- ✚ Do one of the following to test the query.
  - ✧ In the **Results Group**, click the **View** button.
  - ✧ Click the **Run** button in the **Results Group**.
- ✚ In the **Enter Parameter Value** dialog box, type **64120**.



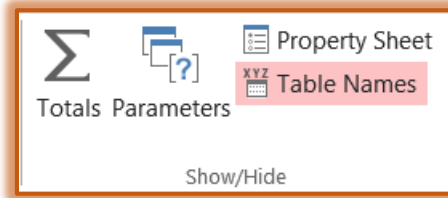
- ✚ Click **OK** to view the results of the query.
- ✚ The **Datasheet** should show two clients.
- ✚ Right-click the **Query Object Tab** and select **Close** to close the query.

### Create a Query Using the Totals Option

The Totals option is used to perform operations such as Sum, Count, and Average to a field of information. When the Total option is selected, an additional row is added to the Design grid of the query.

- ✚ Click the **Create Tab**.
- ✚ In the **Queries Group**, click **Query Design**.
- ✚ Select the **Payments** table from the **Show Tables** dialog box.
- ✚ Select all the fields from the **Payments** box by clicking on the first field, holding down the **Shift** key and clicking on the last field.

- ✚ Drag the fields to the first box in the **Design** grid.
- ✚ Release the mouse button. All the fields should appear in the grid in separate columns.
- ✚ Click the **Query Tools Design Tab**.
- ✚ In the **Show/Hide Group**, click the **Totals** button (see illustration below).

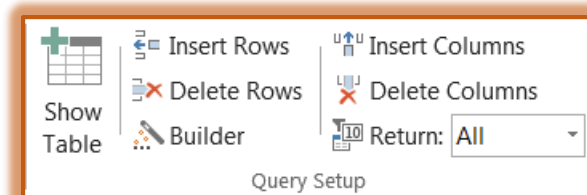


- ✚ Leave the **Total** cell settings for the **IDPayment**, **ClientID**, and **Date of payment** as **Group by**.
- ✚ Set the **Total** cell for the **Amount paid** field to **Last**.
  - ✧ This query will show the last payment for nine or ten of the clients.
  - ✧ The field name for that field will appear as **Last of Amount Paid**.
- ✚ Save the query with the name **Show latest payment**.
- ✚ To see the results of the query, click the **Run** button in the **Results Group**.
- ✚ Close the query, saving the changes if prompted to do so.

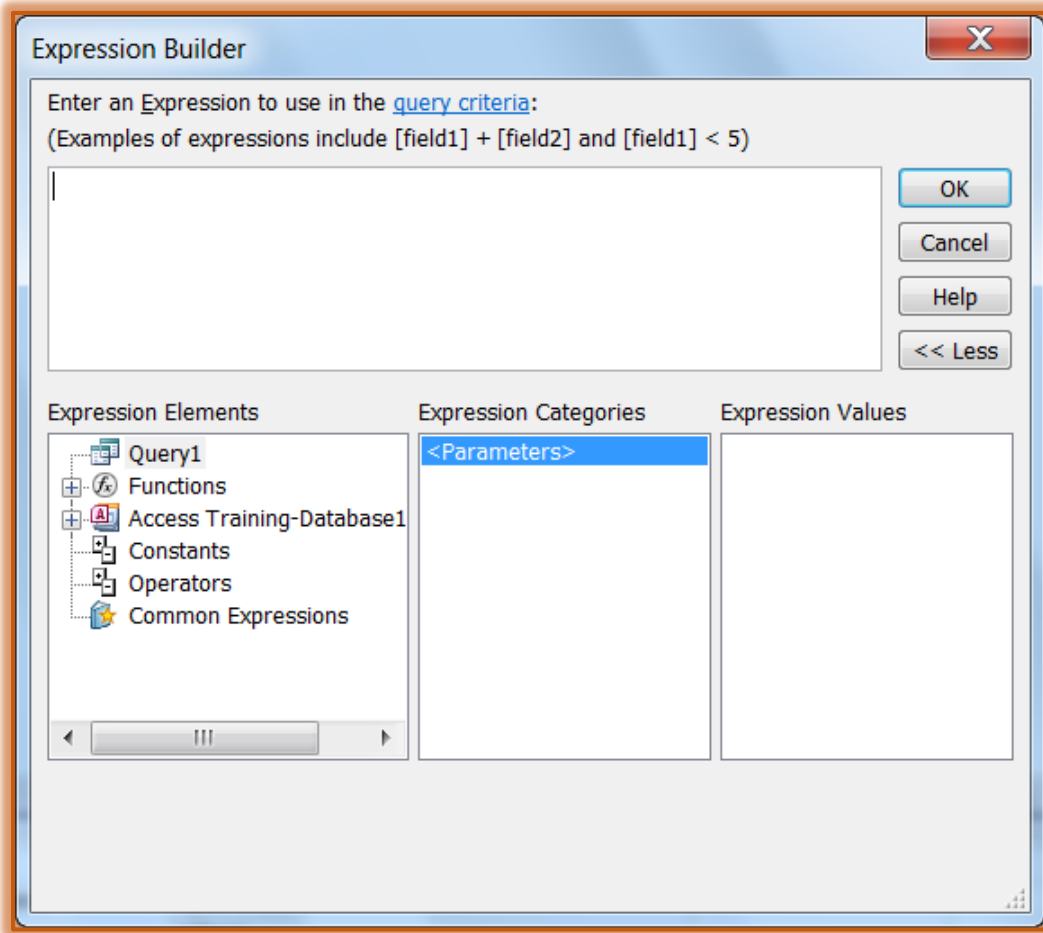
### Create a Query Using Totals and Build Options

Build options are used to perform calculations in a query. The Expression Builder is used to generate the search criteria for the query.

- ✚ Click the **Create Tab**.
- ✚ In the **Queries Group**, click the **Query Design** button.
- ✚ Select the **Spot orders** table from the **Show Tables** list.
- ✚ Add the fields **IDSpot**, **ClientID**, and **Start date** to the **Design** grid.
- ✚ Add the **Totals** line to the **Design** grid using one of the options described in the previous section.
- ✚ In the column for **IDSpot**, click the **Total** cell.
- ✚ From the list choose **Count**.
- ✚ In the column for **Start date**, click the **Total** cell.
- ✚ From the list choose **Where**.
  - ✧ You have to add this extra step for entering query criteria whenever the **Total** row is visible in Query Design View.
  - ✧ Choosing **Where** automatically removes the check mark for the **Show** box for that field.
- ✚ In the column for **Start date**, click the **Criteria** cell.
- ✚ Click the **Builder** button in the **Query Setup Group** (see illustration below).



- ✚ The **Expression Builder** dialog box will appear (see illustration below).
- ✚ In the **Expression Elements** list, click the **Operators** button.
- ✚ Under **Expression Categories**, click **Comparison**.
- ✚ In the **Expression Builder**, double-click the **greater than (>)** button.
- ✚ In the **Expression Elements** list, double-click the **Functions** folder.



- † Click the **Built-In Functions** subfolder.
- † Under **Expression Categories**, click **Date/Time**.
  - ✧ Make sure that you click the middle list only **once**.
  - ✧ A double-click will add a term to the upper text box.
- † In the **Expression Values** list, double-click **Date**.
- † Type **-90** in the box at the top of the dialog box, next to the parentheses after the word **Date**.
- † Click **OK** to exit the dialog box and place the expression in the **Criteria** row.
- † In the **Design View** window, press **Tab**.
- † Save the file with the name **Count spots for clients in last 90 days**.
- † Test the query by clicking the **View** or the **Run** button in the **Results Group**.
  - ✧ In the **Datasheet View** for the query, the field **Count of ID Spot** shows the number of spots each client has purchased for running during the past 90 days.
  - ✧ When the database was created, Fall 2014 was used as the example.
  - ✧ Because the query is being run at this time, the query results will not show the data.
- † If this query was run earlier than Fall 2014, this problem could be solved, by completing the steps below:
  - ✧ Return to **Query Design View**.
  - ✧ In the upper pane, double-click the **Start date** field to add it to the query a second time. When creating a query, it is possible to add a field to the query more than once.
  - ✧ In the second column for **Start date**, click the **Total** cell.
  - ✧ From the list, choose **Where**.
  - ✧ In this same column, click the **Criteria** cell.

- ✧ Click the **Builder** button on the toolbar.
- ✧ In the **Expression Elements** list, click the **Operators** button.
- ✧ Under **Expression Categories**, click **Comparison**.
- ✧ In the **Expression Builder**, double-click the **less than (<)** button.
- ✧ In the **Expression Elements** list, double-click the **Functions** folder.
- ✧ Click the **Built-In Functions** subfolder under **Functions**.
- ✧ In the **Expression Categories** list, click **Date/Time**.
  - ☆ Make sure that you click the middle list only once.
  - ☆ A double-click will add a term to the upper text box.
- ✧ In the **Expression Builder** list, double-click **Now** and then click **OK**.
- ✧ In the **Design View** window, press the **Tab** key.
- ✧ The query should appear as shown in the illustration below.

Field:	DSpot	ClientID	Start date
Table:	Spot orders	Spot orders	Spot orders
Total:	Count	Group By	Where
Sort:			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Criteria:			>Date()-90 And <Now()

- ✧ Save the query.
- ✦ To test the revised query, view it in Datasheet View.
  - ✧ If this query were being run during the same quarter of the year 2014 as when it was created, you would see the results of the query.
  - ✧ If the query were being run earlier than the quarter when it was created, you would not see any results – which is correct.
  - ✧ If the query were being run during a later quarter than when it was created, you would not see any results – which is also correct.
  - ✧ Sometimes when a query does not show any results, it is a good thing.
- ✦ Close the query, saving the changes if necessary.

### Create a Calculated Field by Inputting Expressions Manually

This query will be used to divide payments received over the last 90 days into groups according to the client's ID number. It will also show the sum of what each client has paid.

- ✦ Click the **Home Tab**.
- ✦ In the **Queries Group**, click **Query Design**.
- ✦ From the **Show Tables** list, add the **Payments** and **Clients** tables to the **Design Grid**.
- ✦ If necessary, create a Join Line between the **IDClient** field in the **Clients** box to the **ClientID** field in the **Payments** box.
  - ✧ Click the **IDClient** field in the **Clients** table.
  - ✧ Drag this over to the **ClientID** in the **Payments** table.
  - ✧ A line should appear between the two boxes linking these two fields.
- ✦ Add the **Totals** row to the **Design Grid**.
- ✦ Add the field **ID Client** from the **Clients** table for the first **Field**.
- ✦ In the **second** column, click the **Field** cell.
- ✦ Type **Total paid: Sum([Payments]![Amount paid])**.
- ✦ In the same column, click the **Total** cell.



- ✦ From the drop-down list, choose the **Expression** option.
- ✦ In the **third** column, click the **Field** cell.
- ✦ From the drop-down list, choose **Payments.Date of payment**.
- ✦ In the **Total** cell for this column, choose **Where**.
- ✦ In the same column, click the **Criteria** cell and input **<=Date()-90**.
- ✦ Save the query as **Show clients' payments in last 90 days**.
- ✦ The query should look like the one in the illustration below.

Field:	IDClient	Total paid: Sum([Payme	Date of payment
Table:	Clients		Payments
Total:	Group By	Expression	Where
Sort:			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Criteria:			<=Date()-90

- ✦ Test the query by viewing it in Datasheet View.
  - ✧ As in the previous query, you may not see any results.
  - ✧ This is because of when the query is being run.
- ✦ Close the query.