

# Modify Tables and Fields 4

## LESSON SKILL MATRIX

Skill	Exam Objective	Objective Number
Modifying a Database Table	Add table descriptions.	2.2.4
	Rename tables.	2.2.5
Creating Fields and Modifying Field Properties	Set default values.	2.4.7
	Change field sizes.	2.4.4
	Use input masks.	2.4.8
	Add validation rules to fields.	2.4.2
	Change field captions.	2.4.3
	Add fields to tables.	2.4.1
Delete fields.	2.4.9	

# WILEY



## KEY TERMS

- input mask
- multivalued lookup field
- properties
- Quick Start field
- validation rule
- validation text
- zero-length string

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Erin's Travel is a full-service travel agency that specializes in sports-event travel packages. The company offers both individual and group travel packages to many of the leading sports events throughout the country. The travel packages can be customized to include plane tickets, event tickets, event transportation, hotel accommodations, official event souvenirs, and on-site staff assistance. As an assistant event coordinator, you are responsible for gathering information about a variety of events; you use Access to store the necessary data. In this lesson, you learn how to modify table properties, rename a table, delete a table, modify field properties, and create and modify fields—including multivalued and attachment fields.

## MODIFYING A DATABASE TABLE

### The Bottom Line

After a table has been created, you may need to modify it. You can make many changes to a table—or other database object—using its property sheet. You can also rename or delete a table, but keep in mind that such a change could possibly break the functionality of the database, because in a relational database the various components work together.

### Modifying Table Properties

You can set **properties** that control the appearance or behavior characteristics for an entire table in the table's property sheet. Sometimes it is necessary to describe the purpose of a table by modifying the table's Description property since others who view your table may require more information about its purpose. Other table properties are more advanced and used less often. In this exercise, you modify the description property for a table.

## STEP BY STEP

### Modify Table Properties

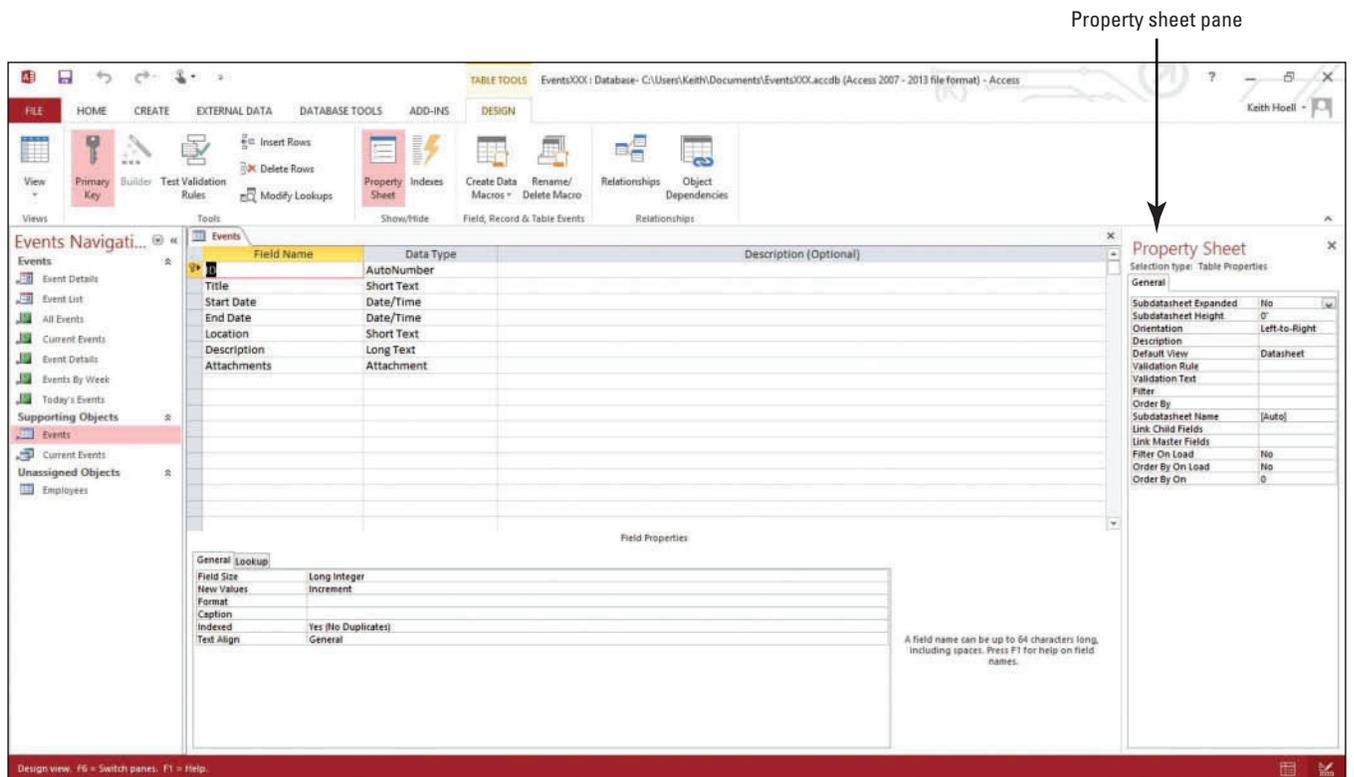


**GET READY.** Before you begin these steps, be sure to launch Microsoft Access.

1. **OPEN** the **Events** database from the data files for this lesson.
2. **SAVE** the database as **EventsXXX** (where **XXX** is your initials).
3. In the Navigation Pane, double-click **Events** to open that table.
4. On the HOME tab, in the Views group, click the bottom half of the **View** button, and then click **Design View** from the menu that appears.
5. On the DESIGN tab, in the Show/Hide group, click **Property Sheet**. The Property Sheet pane appears on the right of the Access window (see Figure 4-1).

Figure 4-1

Property Sheet pane displayed



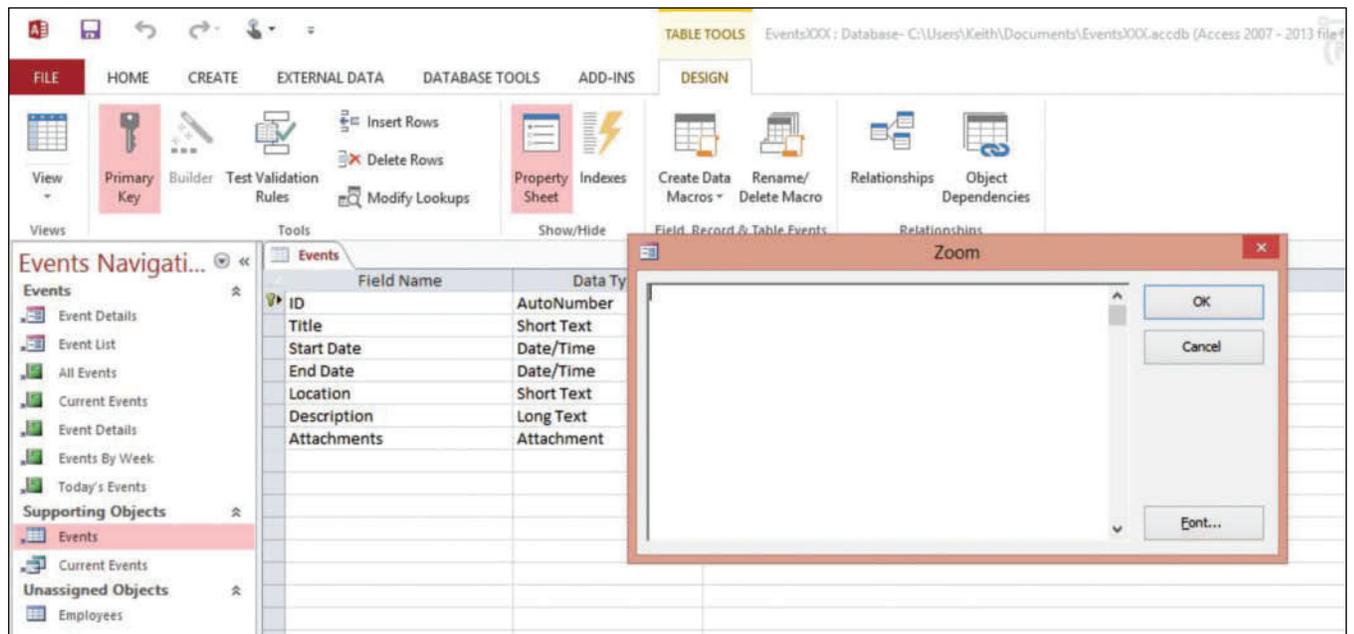
Another Way

You can also press Alt+Enter to display the property sheet for an object.

6. Place the insertion point in the property box for Description.
7. Press **Shift+F2** to open the Zoom dialog box (see Figure 4-2) to provide more space.

Figure 4-2

Zoom dialog box





### Another Way

You can also right-click in a property box and select Zoom from the shortcut menu that appears to open the Zoom dialog box.

**CERTIFICATION READY?** 2.2.4

How do you add table descriptions?

**Table 4-1**

Table Properties

Table Property	Use This Table Property To
Subdatasheet Expanded	Specify whether to expand all subdatasheets when you open the table.
Subdatasheet Height	Specify whether to expand to show all available subdatasheet rows (default) when opened or to set the height of the subdatasheet window to show when opened.
Orientation	Set the view orientation, according to whether your language is read left-to-right or right-to-left.
Description	Provide a description of the table.
Default View	Set Datasheet as the default view when you open the table.
Validation Rule	Supply an expression that must be true for you to add a record or change a record.
Validation Text	Enter text that appears when a record violates the Validation Rule expression.
Filter	Define criteria to display only matching rows in Datasheet view.
Order By	Select one or more fields to specify the default sort order of rows in Datasheet view.
Subdatasheet Name	Specify whether a subdatasheet should appear in Datasheet view, and, if so, which table or query should supply the rows in the subdatasheet.
Link Child Fields	List the fields in the table or query used for the subdatasheet that match this table's primary key field(s).
Link Master Fields	List the primary key field(s) in this table that match the child fields for the subdatasheet.
Filter On Load	Automatically apply the filter criteria in the Filter property (by setting to Yes) when the table is opened in Datasheet view.
Order By On Load	Automatically apply the sort criteria in the Order By property (by setting to Yes) when the table is opened in Datasheet view.
Order By On	Provide an alternate method to the Order By On Load property by automatically applying the sort criteria in the Order By property when set to -1 (Yes).

8. Key **Most popular events for 2014**.
9. Click **OK**.
10. Click the **Close** button on the Property Sheet pane to close it.
11. Click the **FILE** tab and click **Save** to save the design changes you have made to the table.
12. Click the **Close** button to close the table.

**PAUSE. LEAVE** the database open to use in the next exercise.

To set the properties for a table, open the table in Design view. On the DESIGN tab, in the Show/Hide group, click Property Sheet. Click the box for the property you want to set and key a setting for the property. Table 4-1 lists the available table properties and what they control.

## Renaming a Table

To rename a table or other database object, you must first close it. In the Navigation Pane, locate and right-click the object that you want to rename, and then click Rename on the shortcut menu that appears. Or, select the table in the Navigation Pane, press F2, key a new name, and press Enter. Think carefully before you rename a table. If existing database objects, such as queries or reports, use data from that table, the name modification might break the functionality of the database. In this exercise, you create a new table and then rename it using the shortcut menu.

## STEP BY STEP

## Rename a Table

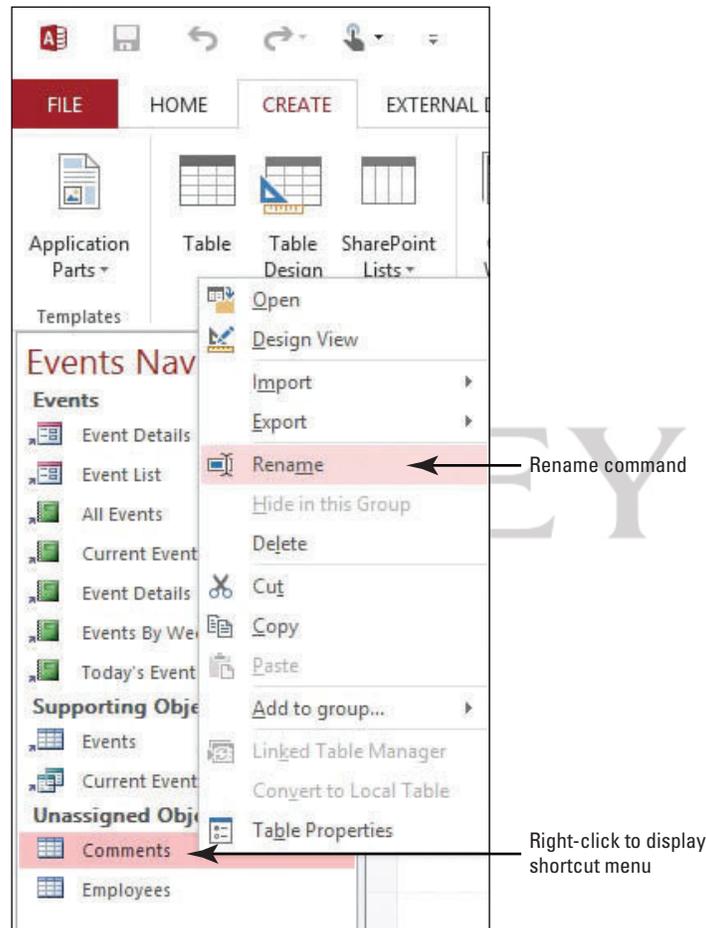


USE the database that is open from the previous exercise.

1. On the CREATE tab, in the Templates group, click the **Application Parts** button and click **Comments** to create a new table.
2. In the Create Relationship dialog box that appears, select **There is no relationship** and then click **Create**.
3. Open the Comments table and right-click **Comments in the Navigation Pane** to display the shortcut menu shown in Figure 4-3. Select **Rename** and a dialog box appears that states *You can't rename the database object 'Comments' while it's open* (see Figure 4-4). Close the dialog box.

**Figure 4-3**

Rename command on table shortcut menu



**Figure 4-4**

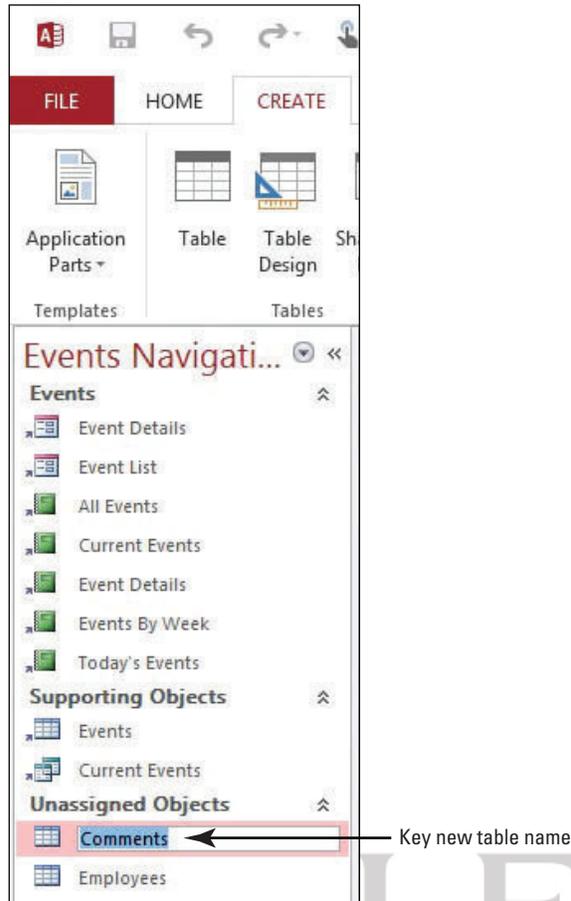
Cannot rename table dialog box



4. Close the Comments table.
5. Right-click **Comments** in the Navigation Pane to display the shortcut menu.
6. Click **Rename**. The table name is now selected for renaming (see Figure 4-5).

**Figure 4-5**

Table name selected for renaming



**CERTIFICATION  
READY?** 2.2.5

How do you rename tables?

7. Key **Event Comments** and press **Enter**. The table has been renamed.

**PAUSE. LEAVE** the database open to use in the next exercise.

### Deleting a Table

Deleting an entire table is not a complex process; however, remember that when you delete an entire table you might break the functionality of your database. Although you will be asked to confirm the deletion of a table, you can always undo the action. In this exercise, you delete a table.

To delete a table or other database object like a report, form, or query, right-click it in the Navigation Pane and click Delete. Or, select the table in the Navigation Pane and press Delete.

## STEP BY STEP

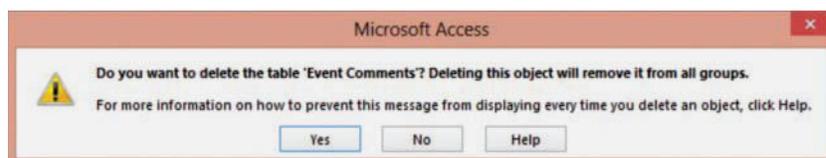
### Delete a Table

**USE** the database that is open from the previous exercise.

1. Right-click the **Event Comments** table in the Navigation Pane and click **Delete** on the shortcut menu. A confirmation message appears (see Figure 4-6).

**Figure 4-6**

Delete table confirmation message



2. Click **Yes** to delete the table.

**Take Note** If the table was related to one or more additional tables, Access would ask if you wanted to delete those relationships before deleting the table.

**PAUSE. LEAVE** the database open to use in the next exercise.



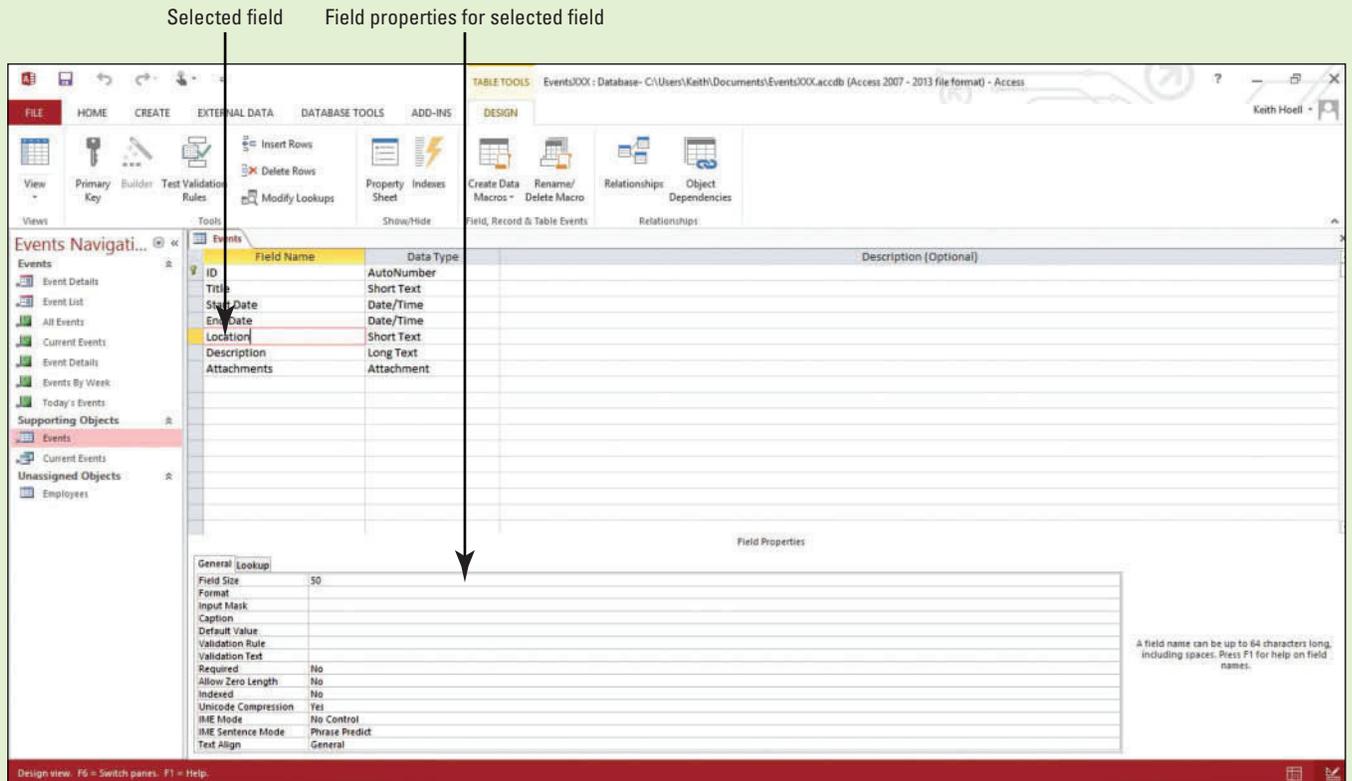
**Cross Ref**

You can also delete information from individual records or delete entire records from a table, as you learned in Lesson 3.

## SOFTWARE ORIENTATION

### Field Properties

Some field properties are available in Datasheet view, but to access the complete list of field properties you must use Design view. An example of field properties for a table in Design view is shown in Figure 4-7.



**Figure 4-7**  
Field Properties

Use this figure as a reference throughout this lesson as well as for the rest of this book.

## CREATING FIELDS AND MODIFYING FIELD PROPERTIES

### The Bottom Line

A field has certain defining characteristics such as a name that uniquely identifies the field within a table, and a data type that is chosen to match the information to be stored. Every field also has an associated group of settings called properties that define the appearance or behavior of the field. In this section, you learn how to create fields and modify field properties.

Access uses the field property settings when you view and edit data. For example, the Format, Input Mask, and Caption properties affect how your information appears in table and query data-sheets. In addition, any controls on new forms and reports that are based on the fields in the table inherit these same property settings by default.

## Setting Field Properties

You can control the appearance of information, prevent incorrect entries, specify default values, speed up searching and sorting, and control other appearance or behavior characteristics by setting or modifying field properties. For example, you can format numbers to make them easier to read, or you can define a validation rule that must be satisfied for information to be entered in a field. In this exercise, you set the Required field property in Datasheet view and both the Default Value and Field Size field properties in Design view.

To set a field property in Datasheet view, open the table in Datasheet view. Click in the field for which you want to set the property. In the Field Validation group on the TABLE TOOLS FIELDS contextual tab, select the Unique check box to require the values in the field to be unique for all the records in the table. Or, select the Required check box to make this a required field, where all instances of this field must contain a value. In the Properties group, select the Field Size property box to define the text length for a field, which limits the number of characters allowed for input. You can also select other field properties like Default Value, and Name & Caption. The Default Value property allows you to specify a value to automatically assign to a field when new records are added. This is useful if you have data that consistently repeats. The Name & Caption property allows you to specify a new field name and the associated caption for that field. The caption is what appears as column names in tables, and as labels in queries, forms, and reports. Keep in mind that Access will show field names as the column names and labels when no caption property value is specified. The field name is what Access uses to reference the field behind the scenes and when you view the field names in Design view.

You can set a few of the available field properties in Datasheet view, but to access all of the available field properties, you must open the table in Design view. For example, you can modify the Field Size property in both Datasheet and Design views, but you can only modify the Text Align property—which allows you to specify the default alignment of text within a field—in Design view.

To set field properties in Design view, open the table in Design view. In the upper portion of the table design grid, click the field for which you want to set properties. The properties for this field are displayed in the lower portion of the table design grid.

Click the box for the field property you want to set. Alternatively, you can press F6 and then move to the property by using the arrow keys. Type a setting for the property or, if an arrow appears at the right side of the property box, click the arrow to choose from a list of settings for the property. Table 4-2 lists the available field properties and what they control.

**Table 4-2**

Available Field Properties

Field Property	Use This Field Property To
Field Size	Set the maximum size for data stored as a Short Text, Number, or AutoNumber data type.
Format	Customize the way the field appears when displayed or printed.
Decimal Places	Specify the number of decimal places to use when displaying numbers.
New Values	Set whether an AutoNumber field is incremented or assigned a random number.
Input Mask	Display editing characters to guide data entry.
Caption	Set the text displayed by default as the column name in tables and labels for forms, reports, and queries.

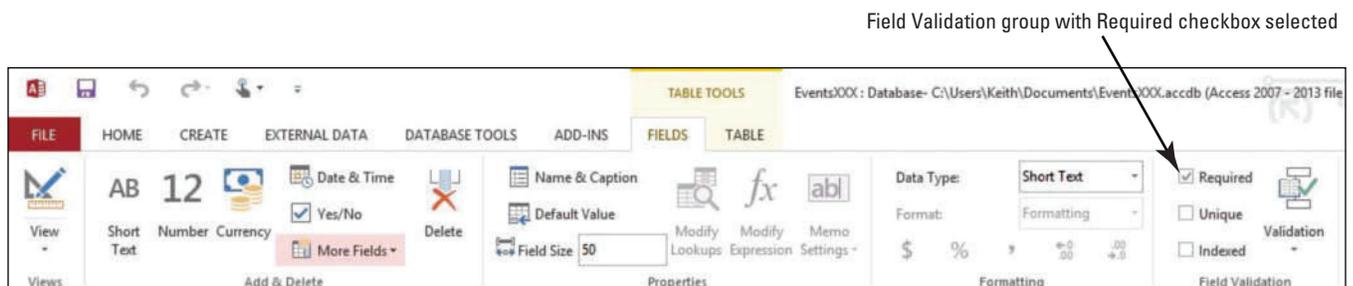
Field Property	Use This Field Property To
Default Value	Automatically assign a default value to a field when new records are added.
Validation Rule	Supply an expression that must be true whenever you add or change the value in this field.
Validation Text	Enter text that appears when a value violates the Validation Rule.
Required	Require that data be entered in a field.
Allow Zero Length	Allow entry (by setting to Yes) of a zero-length string ("" ) in a Short Text, Long Text, or Hyperlink field.
Indexed	Speed up access to data in this field by creating and using an index.
Unicode Compression	Compress text stored in this field when a large amount of text is stored.
IME Mode	Specify an Input Method Editor, a tool for using English versions of Windows.
IME Sentence Mode	Specify the type of data you can enter by using an Input Method Editor.
Append Only	Retain a history of all data changes (by setting to Yes) of a Long Text field.
Text Format	Choose Rich Text to store text as HTML and allow rich formatting. Choose Plain Text to store only text.
Text Align	Specify the default alignment of text within a field or control.
Precision	Specify the total number of digits allowed, including those both to the right and the left of the decimal point (when decimal Field Size property is set using Number data type).
Scale	Specify the maximum number of digits that can be stored to the right of the decimal separator (when decimal Field Size property is set using Number data type).
Expression	Specify the expression used for the Calculated data type to generate a value.
Result Type	Specify the data type to be used to store the value generated by the Expression field property for the Calculated data type.

**STEP BY STEP****Set a Field Property in Datasheet View and Design View**

**USE** the database that is open from the previous exercise.

1. Double-click the **Events** table in the Navigation Pane to open the table in Datasheet view, if it is not already open.
2. Click the **Location** column header to select that field.
3. Click the **Required** check box in the Field Validation group on the TABLE TOOLS FIELDS contextual tab (see Figure 4-8). This setting determines that a value must be entered in the Location field for all records in the table.

**Figure 4-8**



**CERTIFICATION  
READY? 2.4.7**

How do you set default values?

**CERTIFICATION  
READY? 2.4.4**

How do you change field sizes?

- On the HOME tab, in the Views group, click the bottom half of the **View** button and click **Design View**.
- In the Field Name column in the middle portion of the table design grid, click in the **Location** cell.
- In the Default Value row in the lower portion of the table design grid, click in the **property box** and key **To Be Announced** to specify a value that will be automatically entered in this field for new records.
- In the Field Name column in the upper portion of the table design grid, click in the **Title** cell.
- In the Field Size row in the lower portion of the table design grid, select **150** in the property box and key **175** to change the maximum number of characters you can enter in the Title field.

**PAUSE. LEAVE** the database open to use in the next exercise.

## Defining Input Masks

You use an **input mask** whenever you want users to enter data in a specific way. An input mask can require users to enter dates in a specific format, for example, DD-MM-YYYY, or telephone numbers that follow the conventions for a specific country or region. An input mask is helpful because it can prevent users from entering invalid data (such as a phone number in a date field). In addition, input masks can ensure that users enter data in a consistent way. In this exercise, you specify that the dates in the Start Date field be entered in Medium Date format, following the required pattern, *28-Aug-73*.

You can add input masks to table fields by running the Input Mask Wizard or by manually entering masks in the Input Mask field property.

### STEP BY STEP

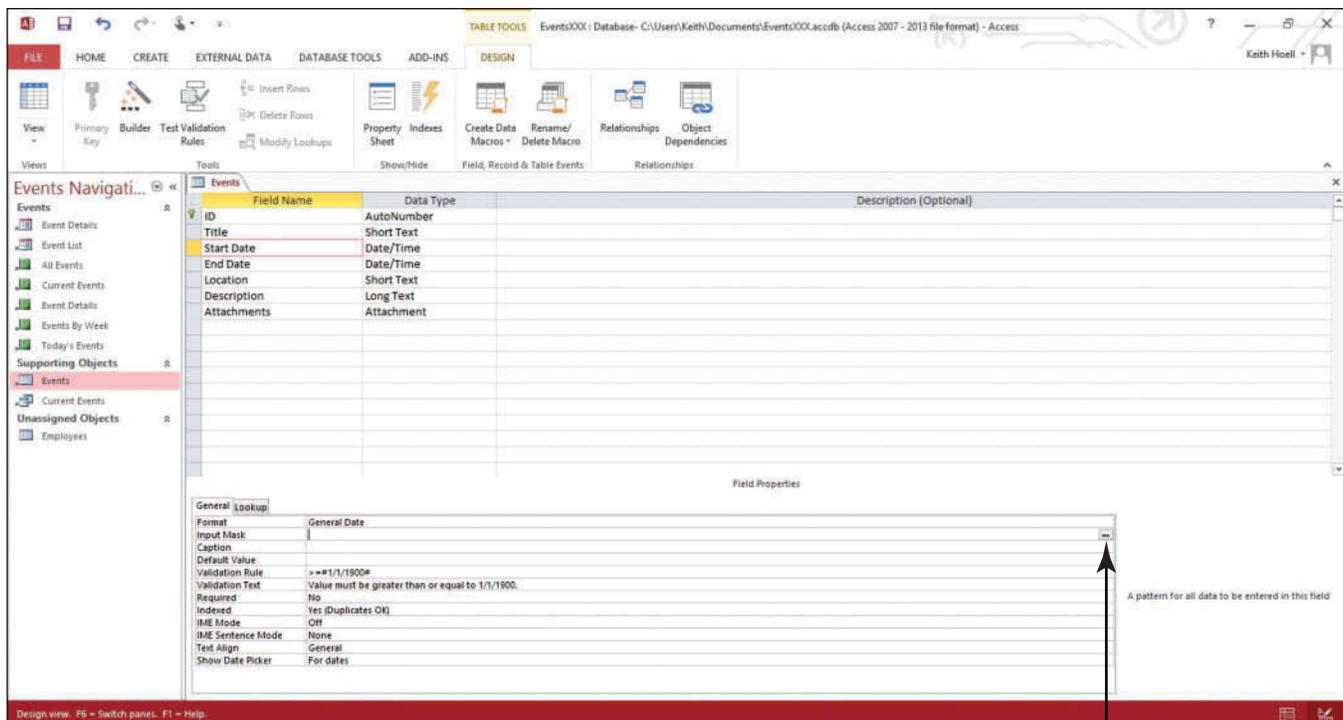
### Define Input Masks for Fields

**USE** the database that is open from the previous exercise.

- In the Field Name column in the upper portion of the table design grid, click in the **Start Date** cell.
- Click the **Input Mask** property box in the lower portion of the table design grid to display the Input Mask Wizard button (...) on the far right of the cell (see Figure 4-9).

**Figure 4-9**

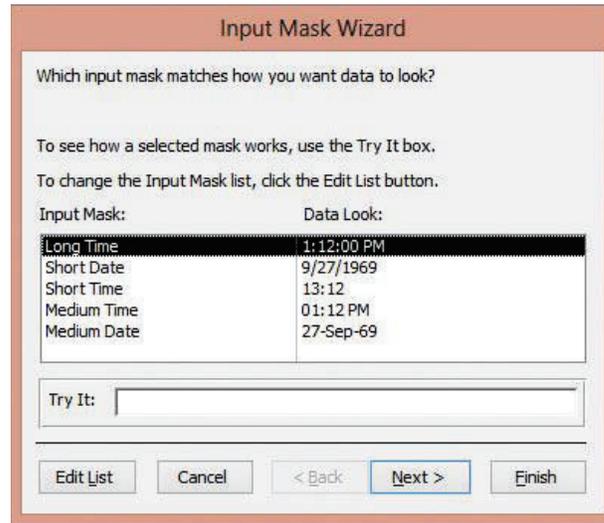
Input Mask Wizard button



Click to open Input Mask Wizard

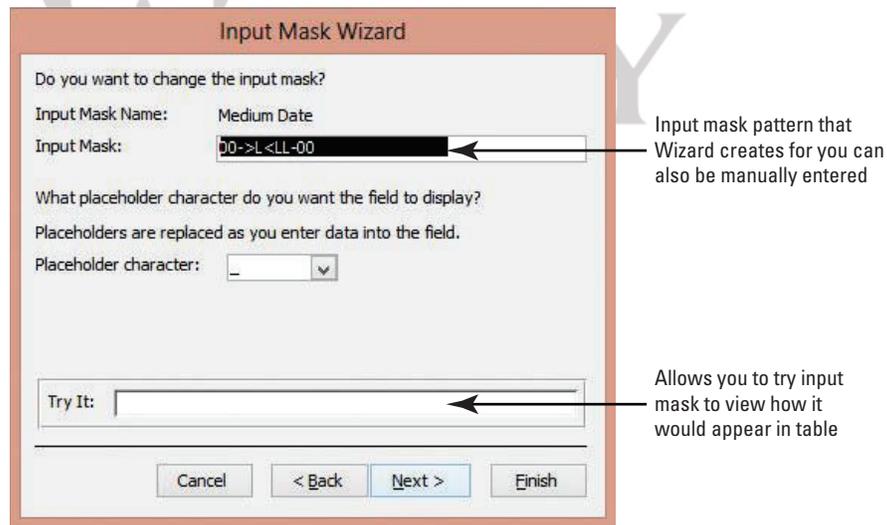
3. Click the **Input Mask Wizard** button. A message box appears asking if you want to save the table now.
4. Click **Yes** to close the message box and display the Input Mask Wizard (see Figure 4-10).

**Figure 4-10**  
Input Mask Wizard



5. Click **Medium Date**, to select the DD-MON-YR date format, and then click **Next >**. The next screen in the Input Mask Wizard appears (see Figure 4-11).

**Figure 4-11**  
Input Mask Wizard, next screen



6. Click **Next** to accept the default settings in this screen and display the final Input Mask Wizard screen (see Figure 4-12).

**Figure 4-12**

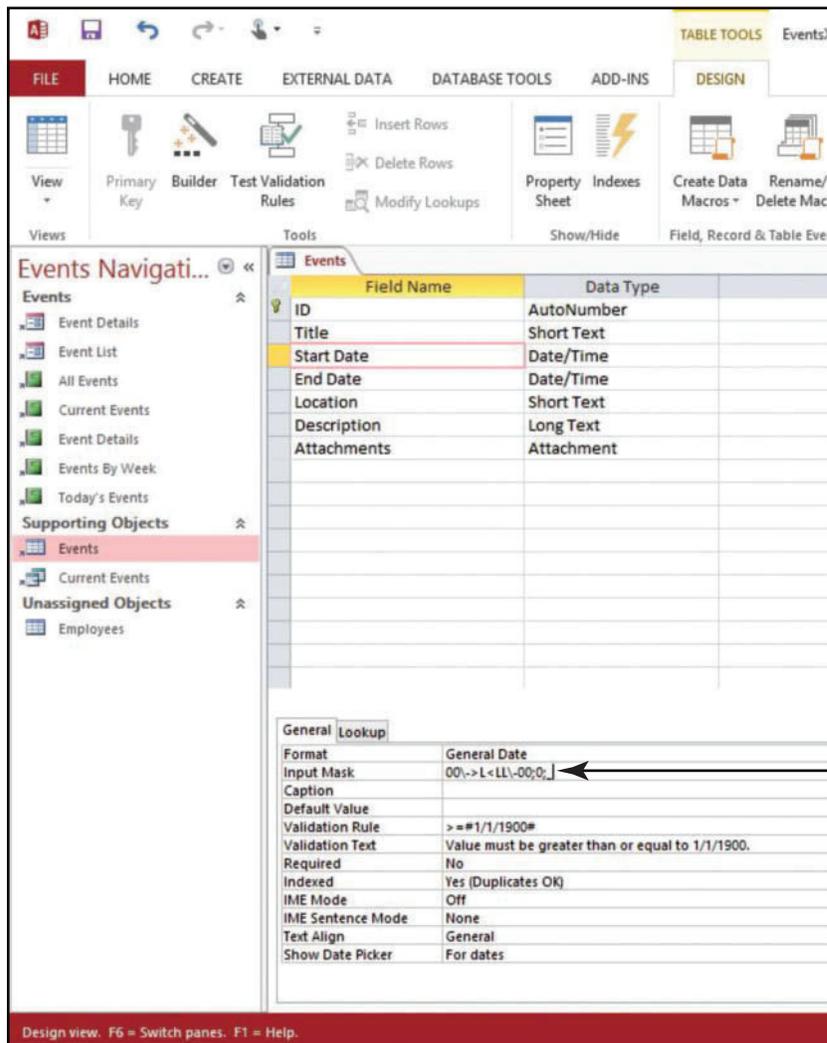
Input Mask Wizard, final screen



7. Click **Finish**. The input mask appears in the Input Mask row (see Figure 4-13).

**Figure 4-13**

Input Mask row



Input mask for Start Date field in Input Mask row

**CERTIFICATION READY?** 2.4.8

How do you use input masks?

**PAUSE. LEAVE** the database open to use in the next exercise.



## Workplace Ready

### USING INPUT MASKS TO STANDARDIZE BUSINESS DATA

When designing a database to be used in the workplace, it is good practice to use input masks for a variety of reasons. Input masks require users to enter data in a specific way to help ensure data consistency. They also help users enter data into the correct field using the correct format. For example, people use different formats to enter a date. Europeans typically enter dates starting with the day, followed by the month, and then year; conversely, Americans typically enter dates beginning with the month, followed by the day, and then year. Input masks help standardize the input of data—like dates—by forcing users to enter the data in a prescribed format. Input masks also help speed the input of data since, for example, users do not need to type the slashes or dashes between date elements.

Access provides you with built-in input masks for commonly used formats. These formats differ between short text and date/time data types. If you set a field to the short text data type, the input mask wizard provides you with a variety of built-in input masks, including those for a phone number, social security number, and even one for a password. The date/time data type input mask wizard provides you with a variety of formats such as entering dates in conventional American or European formats, or retaining a seconds element for time data.

However, what if you needed the flexibility to create an input mask to enter data in formats unique to your business, like those used for customer or order numbers? Access gives you the flexibility to create your own input mask formats using a variety of special characters that define input masks.

Performing a search for “input masks” in Access Help will lead you to information on the characters that define input masks, and how you can use them to create your own input masks that will help conform the data to the particular format your business uses. Once your custom input mask is created, you can be confident users are entering data in a format your business intended, and you will have taken an extra step to help ensure the validity of your data.

### Allowing Zero-Length Strings in a Field

When the Allow Zero Length field property is set to Yes, you can enter zero-length strings in a field. A **zero-length string** contains no characters; you use the string to indicate that you know no value exists for a particular field. This recognition of a nonexistent value actually represents a string. You enter a zero-length string by typing two double quotation marks with no space between them (“”). In this exercise, you modify the Allow Zero Length property for the Description field.

#### STEP BY STEP

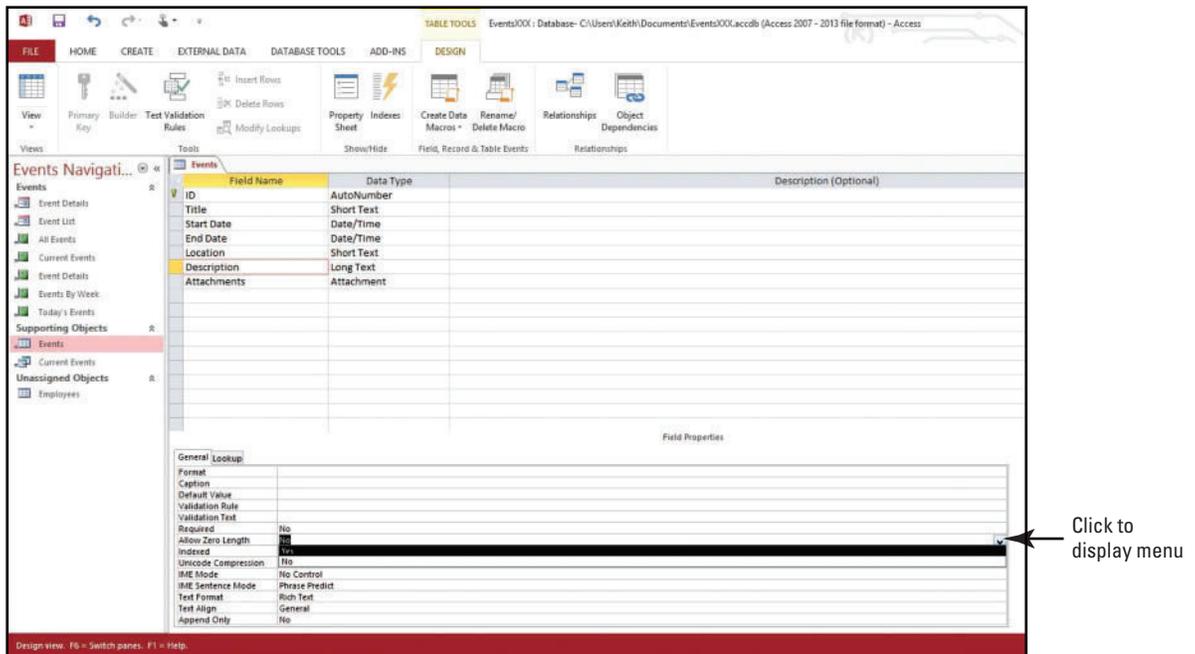
#### Allow Zero Length

**USE** the database that is open from the previous exercise.

1. In the Field Name column in the upper portion of the table design grid, click in the **Description** cell.
2. Click the **Allow Zero Length** property box in the lower portion of the table design grid to display the down arrow on the far right of the cell.
3. Click the **down arrow** to display the menu (see Figure 4-14).

Figure 4-14

Zero Length property menu



#### 4. Click **Yes**.

**PAUSE. LEAVE** the database open to use in the next exercise.

## Setting Data Validation Rules

Validation rules help to ensure that your database users enter the proper types or amounts of data. A **validation rule** is an expression that limits the values that can be entered in the field. The maximum length for the Validation Rule property is 2,048 characters. For example, if the field contains a date, you can require that the date entered in the field be later than June 4, 1977. **Validation text** specifies the text in the error message that appears when a user violates a validation rule. For example, the error message could say “Please enter a date that is later than June 4, 1977.” The maximum length for the Validation Text property is 255 characters. In this exercise, you modify the Validation Rule and Validation Text properties for the End Date field.

Data can be validated in several ways, and you will often use multiple methods to define a validation rule. Each of the following can be used to ensure that your users enter data properly:

- **Data types:** When you design a database table, you define a data type for each field in the table, and that data type restricts what users can enter. For example, a Date/Time field accepts only dates and times, a Currency field accepts only monetary values, and so on.
- **Field sizes:** Field sizes provide another way to validate text. For example, if you create a field that stores first names, you can set it to accept a maximum of 15 characters. This can prevent a malicious user from pasting large amounts of text into the field. It could also prevent an inexperienced user from mistakenly entering a first, middle, and last name in a field designed only to hold a first name.
- **Table properties:** Table properties provide very specific types of validation. For example, you can use the Order By property to select one or more fields to specify the default sort order of rows in Datasheet view.
- **Field properties:** You can also use field properties, such as the Validation Rule property to require specific values, and the Validation Text property to alert your users to any mistakes. For example, entering a rule such as  $>1$  and  $<100$  in the Validation Rule property forces users to enter values between 1 and 100. Entering text such as “Enter values between 1 and 100” in the Validation Text property tells users when they have made a mistake and how to fix the error.



### Another Way

As you already learned in this lesson, you can also use the Input Mask property to validate data by forcing users to enter values in a specific way.

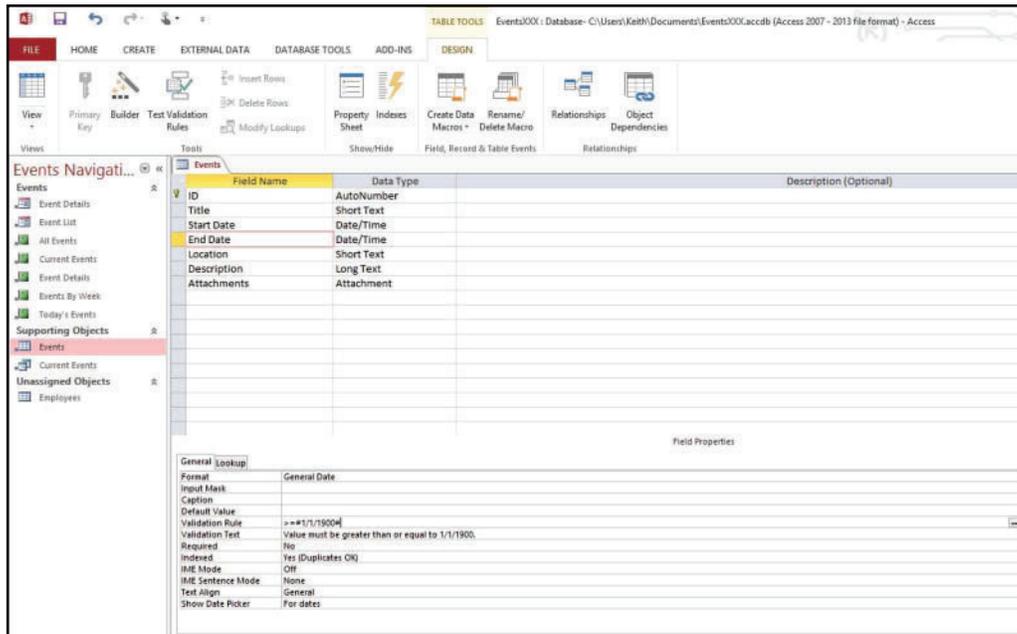
**STEP BY STEP** Set Data Validation Rules

USE the database that is open from the previous exercise.

1. In the Field Name column in the upper portion of the table design grid, click the **End Date** cell.
2. Click the **Validation Rule** property box in the lower portion of the table design grid to display the Expression Builder button (...) on the far right of the cell (see Figure 4-15).

**Figure 4-15**

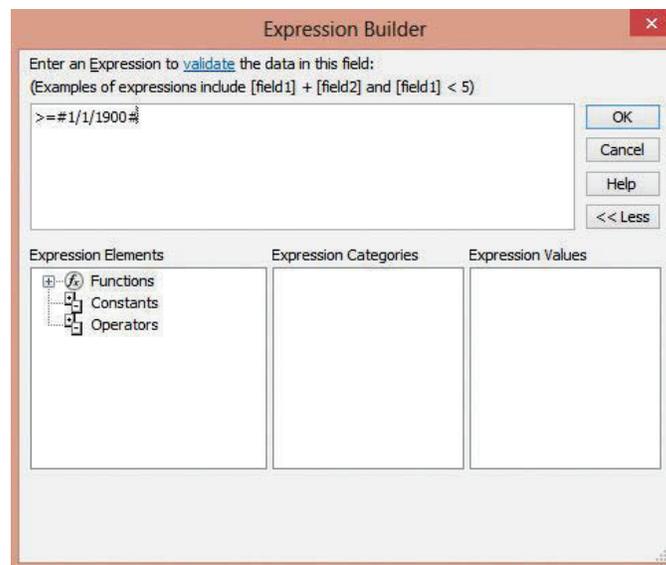
Expression Builder button



3. Click the **Expression Builder** button to display the Expression Builder dialog box (see Figure 4-16).

**Figure 4-16**

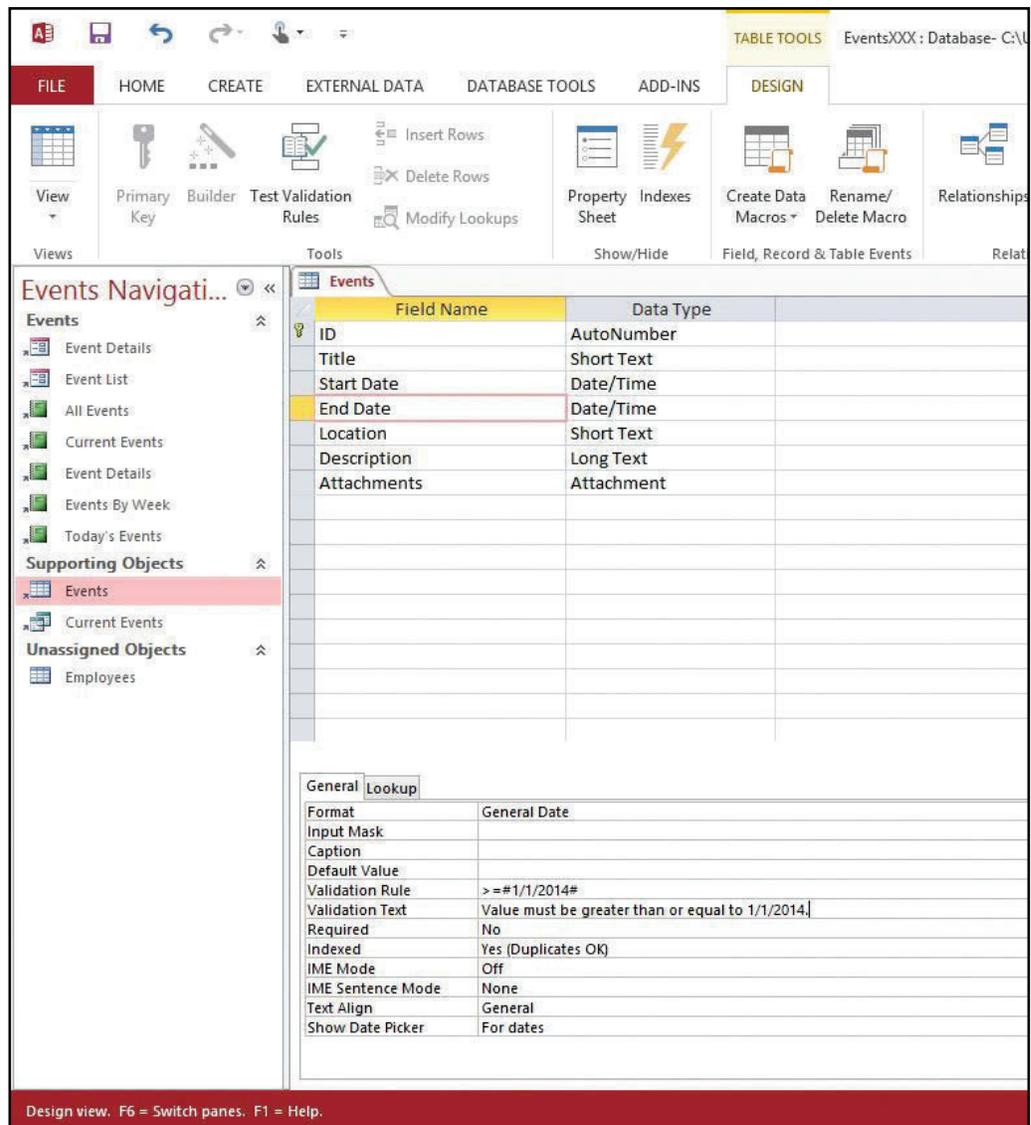
Expression Builder dialog box



4. Select the number **1900** and replace it by keying **2014**.
5. Click **OK**.
6. Click the **Validation Text** property box in the lower portion of the table design grid.
7. Select the number **1900** and replace it by keying **2014**. The property boxes should look like those shown in Figure 4-17.

Figure 4-17

Modified Validation field properties



**CERTIFICATION READY?** 2.4.2

How do you add validation rules to fields?

**PAUSE. LEAVE** the database open to use in the next exercise.

### Entering Captions

The Caption property field specifies the text displayed by default as column names in tables and in labels for forms, reports, and queries. The maximum length for the Caption property is 255 characters. If you do not specify a caption to be displayed, the field name is used as the label. In this exercise, you set the Caption property for the Location field.

#### STEP BY STEP

#### Enter Captions

**USE** the database that is open from the previous exercise.

1. In the Field Name column in the upper portion of the table design grid, click the **Location** cell.
2. Click the **Caption** property box in the lower portion of the table design grid.
3. Key **Venue**. The caption property has now been set to *Venue* and will display as a column name in table Datasheet view, as well as labels for forms, reports, and queries.

**CERTIFICATION READY?** 2.4.3

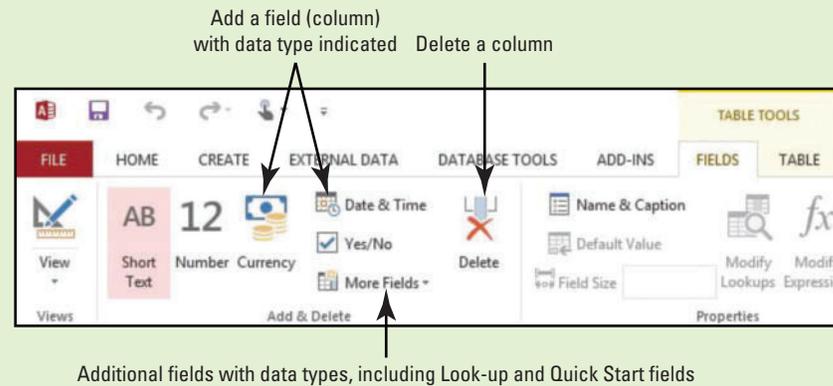
How do you change field captions?

**PAUSE. LEAVE** the database open to use in the next exercise.

## SOFTWARE ORIENTATION

### Add & Delete Group

When creating fields in table Datasheet view, you use the Add & Delete group on the TABLE TOOLS FIELDS contextual tab, which is shown in Figure 4-18. You can use these commands to add fields with associated data types, add Quick Start fields, insert lookup columns, and delete columns.



**Figure 4-18**

Add & Delete group

Use this figure as a reference throughout this lesson as well as the rest of this book.

### Creating Fields

Fields can be created in different ways. You can add fields to a table in Design view, or add fields in Datasheet view using the Click to Add column or Add & Delete group. Sometimes it is easier to choose from a predefined list of fields than to manually create a field. Access includes a quick and easy way for you to add fields to a table using the Add & Delete group on the TABLE TOOLS FIELDS contextual tab, which includes a collection of fields with associated data types and built-in Quick Start fields that can save you considerable time. In this exercise, you add fields to a table by using both the Click to Add column and the Add & Delete group.

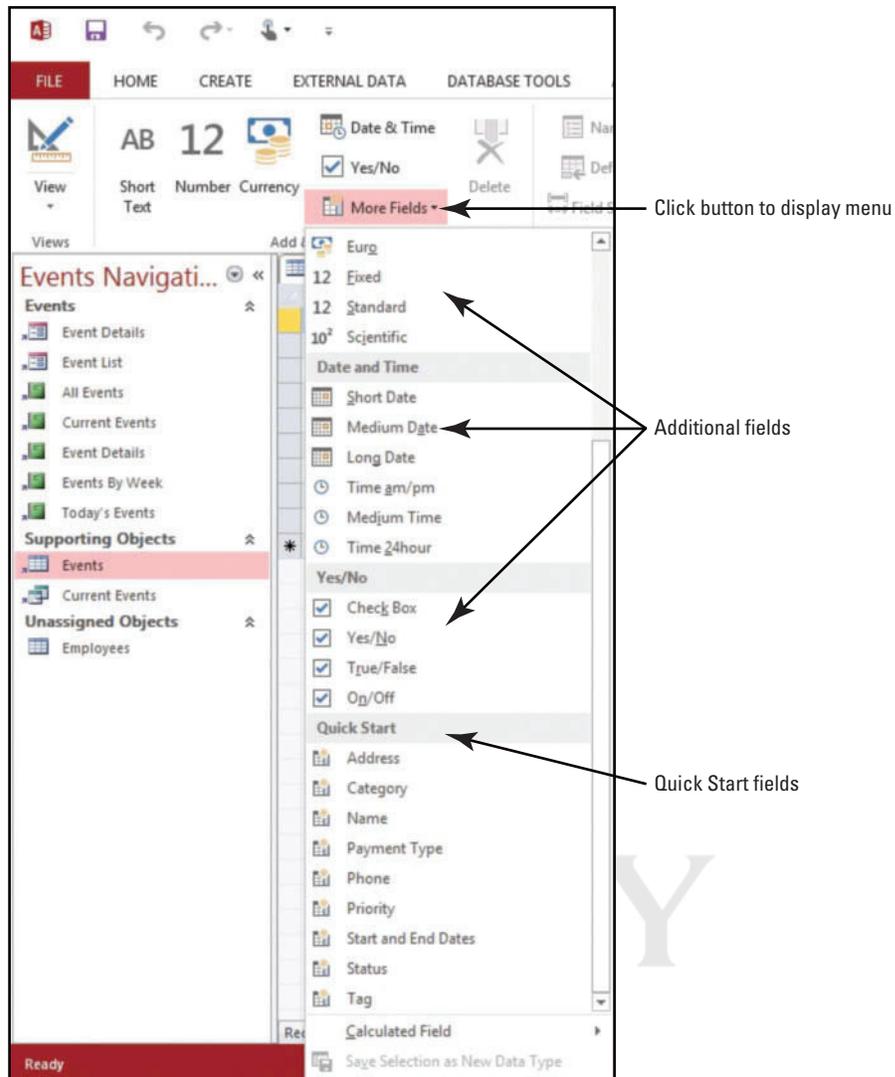
The last column in a table in Datasheet view has a Click to Add column, which you can use to add a field simply by clicking on the Click to Add column header and choosing a data type from the menu that appears. Rename the field by right-clicking the column header, choosing Rename Field from the menu, and keying a new name. You can also key information directly in a column. Access will try to automatically determine the field data type by the data entered.

A **Quick Start field** is a predefined set of characteristics and properties that describes a field, including a field name, a data type, and a number of other field properties. Quick Start fields allow you to quickly add commonly used single fields or several related ones. For example, using Quick Start fields, you can choose from a variety of fields including “Status” to quickly add a field named Status with built-in options like Not Started, In Progress, and so on, or you can choose the “Address” Quick Start to quickly include related fields like City, State, and Zip Code.

To create a new field in table Datasheet view, you can simply choose from commonly used fields in the Add & Delete group, or click the More Fields button to access a menu with a greater variety of field types. To create a new field using Quick Start, click the More Fields button and then choose a Quick Start from the menu (see Figure 4-19).

Figure 4-19

More Fields button menu



## STEP BY STEP

### Create Fields

USE the database that is open from the previous exercise.

1. On the HOME tab, in the Views group, click the bottom half of the **View** button and click **Datasheet View**. Save the table, if required. If you get a message about data integrity, click **Yes**.

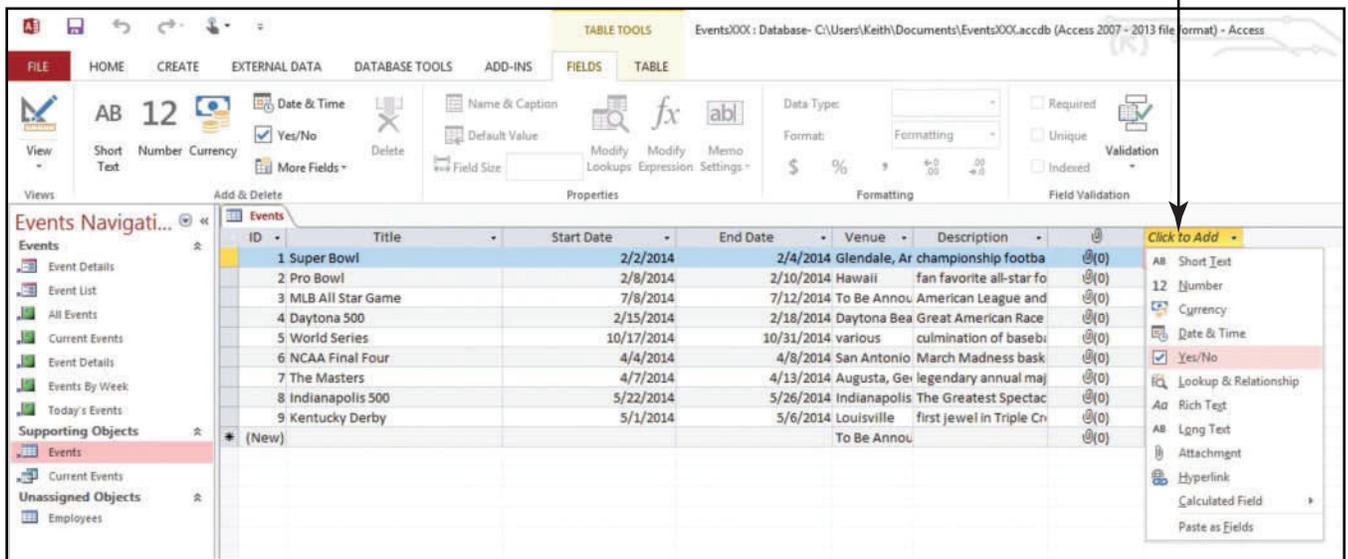
**Take Note** Whenever you add or modify field validation rules for fields that contain data, the data may violate these new rules. You can allow Access to test the data against the rules and inform you if there are any violations.

2. Scroll to the right of the Events table to display the last column and click the **Click to Add** header. Click **Yes/No** from the menu of available data types that appear (see Figure 4-20). You are going to add a new field with the Yes/No data type in which you can indicate whether or not events will have on-site staff.

Figure 4-20

Click to Add column

Click to Add header and menu

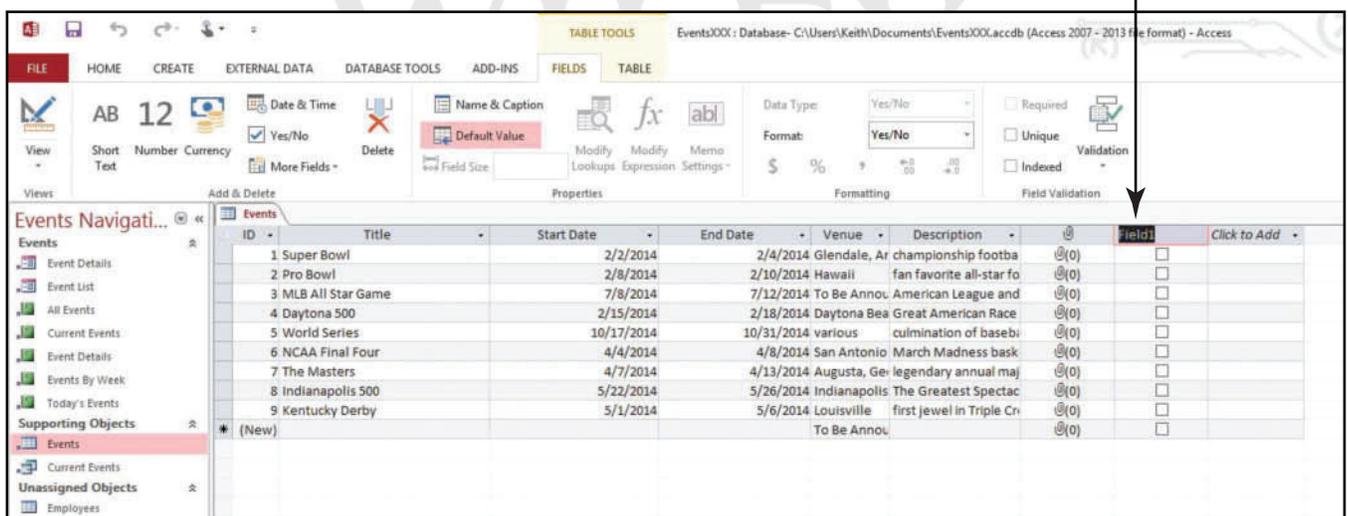


- A new field named Field1 is added, and the Click to Add column becomes the last column in the table (see Figure 4-21).

Figure 4-21

New field created

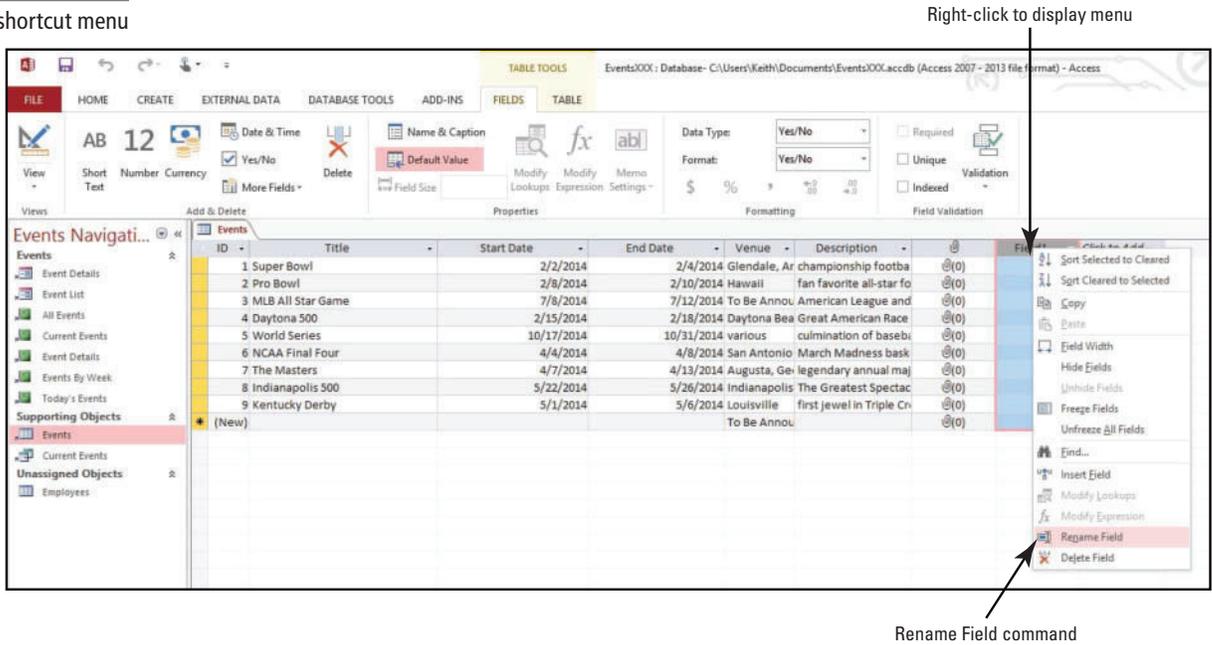
New field created



- Right-click the **Field1** column header to display the shortcut menu and click **Rename Field** (see Figure 4-22).

Figure 4-22

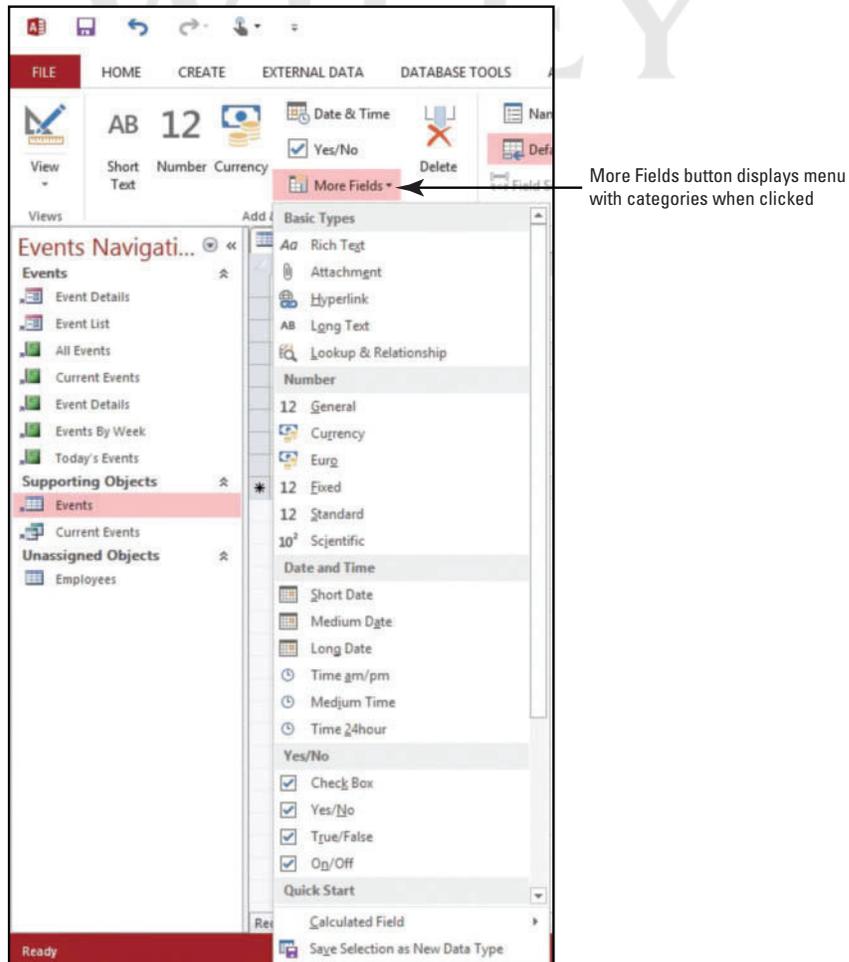
Column shortcut menu



5. Key **On-site staff?** as the column name.
6. Click the **More Fields** button in the Add & Delete group on the TABLE TOOLS FIELDS contextual tab. The More Fields menu appears (see Figure 4-23).

Figure 4-23

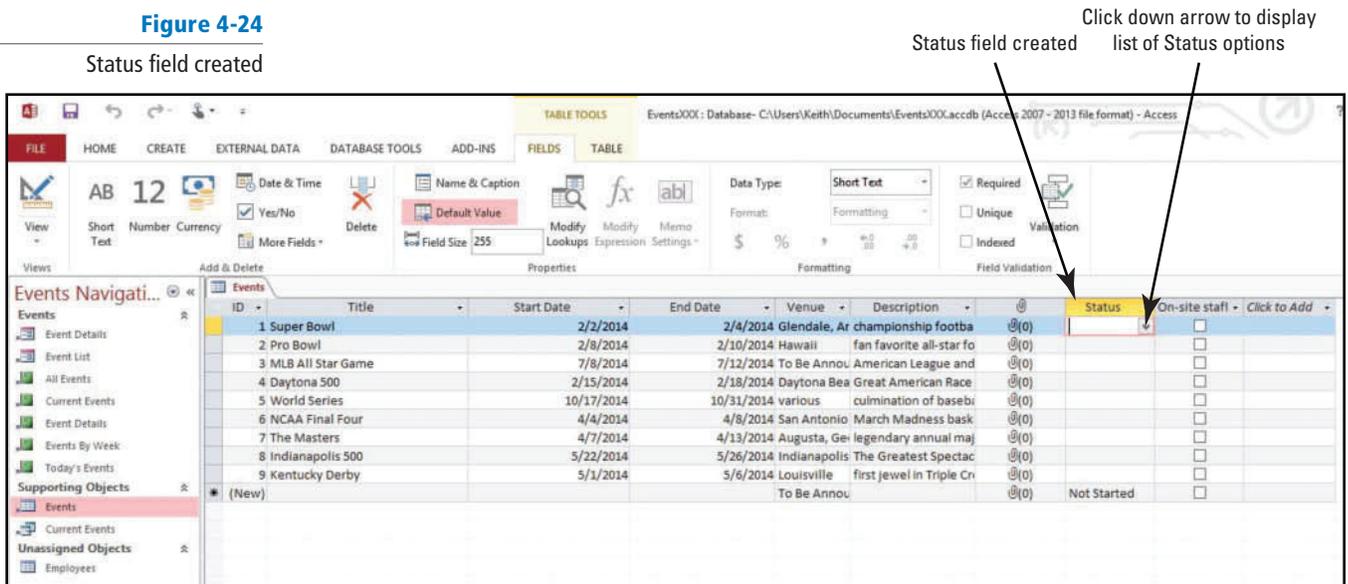
More Fields button and menu



- In the Quick Start category, click **Status**. A new Quick Start field named Status, in which you now have options to indicate the status of an event, appears to the left of the On-site staff? field (see Figure 4-24).

Figure 4-24

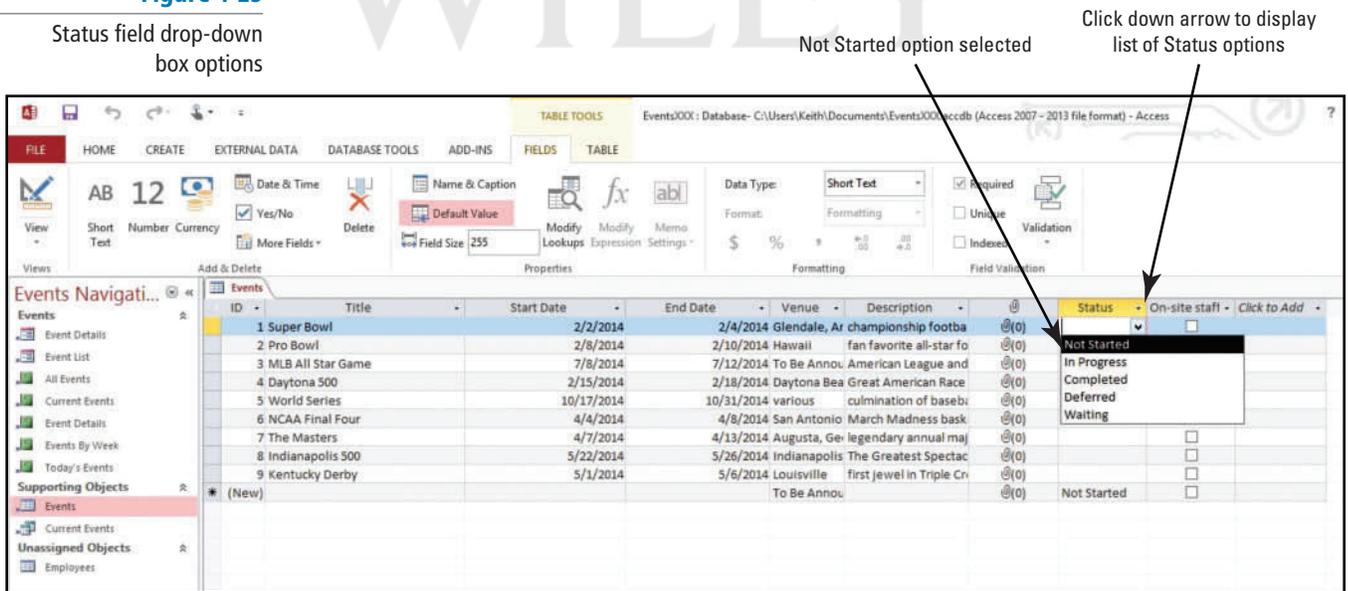
Status field created



- Click the **Status field drop-down box** button to view the available options, and click **Not Started** (see Figure 4-25).

Figure 4-25

Status field drop-down box options



**CERTIFICATION READY?** 2.4.1

How do you add fields to tables?

**PAUSE. LEAVE** the database open to use in the next exercise.

### Deleting a Field

Before you delete a column from a datasheet, remember that doing so deletes all the data in the column and that the action cannot be undone. For that reason, you should back up the table before you delete the column. Before you can delete a primary key or a lookup field, you must first delete the relationships for those fields. In this exercise, you learn how to use the shortcut commands to delete two fields from an Access 2013 table.

To delete a field in Datasheet view, select the column, right-click, and then click Delete Field from the shortcut menu. Or, on the TABLE TOOLS FIELDS contextual tab in the Add & Delete group, click the Delete button. You will see a confirmation message asking if you are sure you want to delete the column and all the data. Sometimes you may see an additional confirmation message warning you about potential issues when deleting fields. You should always be cautious when deleting fields from a table.

## STEP BY STEP

### Delete a Field



#### Another Way

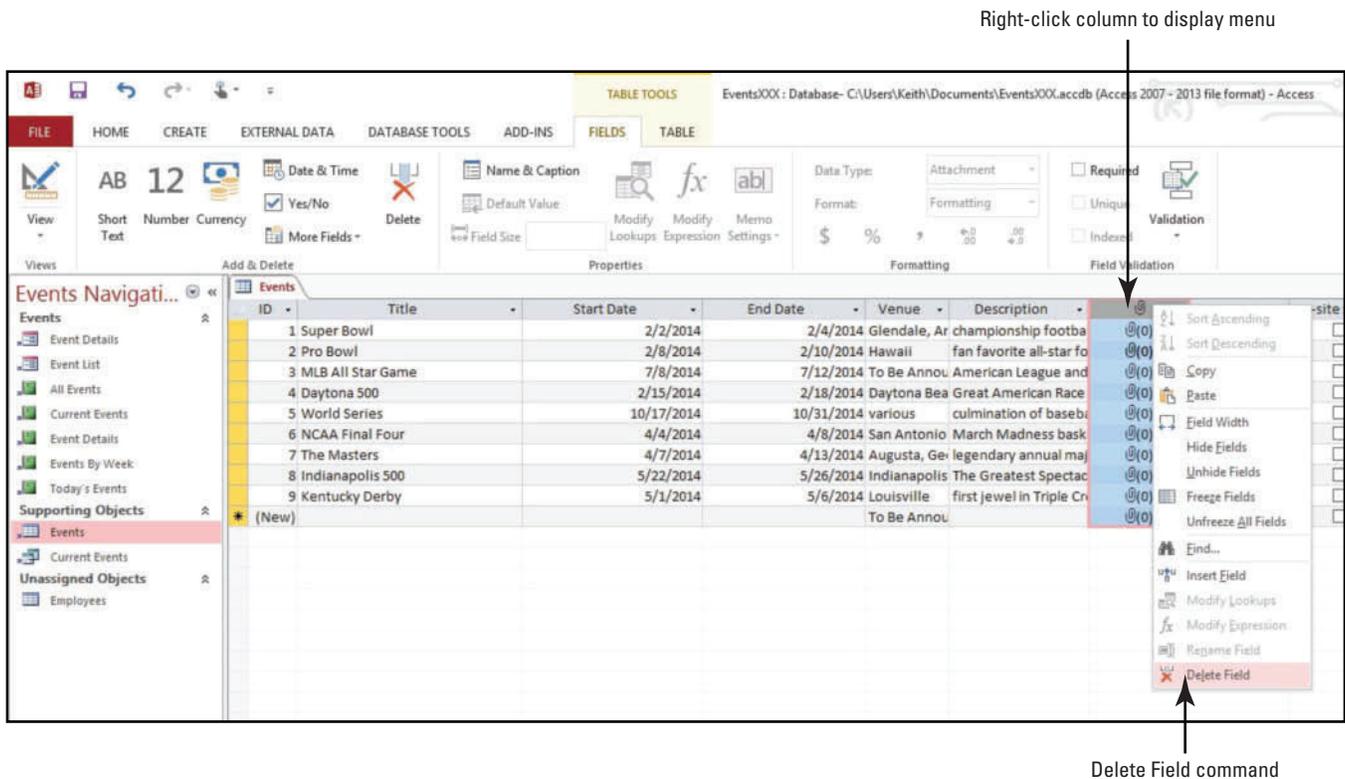
You can also delete a field by clicking the Delete button on the TABLE TOOLS FIELDS contextual tab in the Add & Delete group.

USE the database that is open from the previous exercise.

1. Click the **column header for the Attachment field**, located between the *Description* field and the *Status* field.
2. Right-click on the **column header** to display the shortcut menu and click **Delete Field** (see Figure 4-26).

Figure 4-26

Delete Field command on field shortcut menu



3. A message appears (see Figure 4-27). Click **Yes**.

Figure 4-27

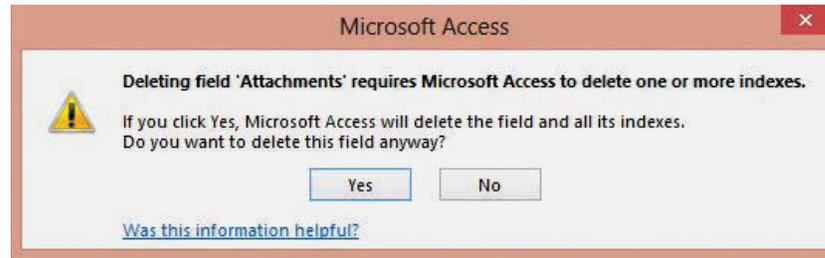
Delete field message



4. A confirmation message appears (see Figure 4-28). Click **Yes**. The field is deleted.

**Figure 4-28**

Delete field confirmation message



**CERTIFICATION  
READY?** 2.4.9

How do you delete fields?



### Another Way

You can also delete a field in Design view by selecting the field (row) that you want to delete and clicking Delete Rows on the TABLE TOOLS DESIGN contextual tab, in the Tools group.

5. Click the **column header** for the Status field.
6. Right-click in the **column** to display the shortcut menu then click **Delete Field**. In the message box that appears, click **Yes** to delete the Status field.

**PAUSE. LEAVE** the database open to use in the next exercise.

## Creating Multivalued Lookup Fields

In Office Access 2013, it is possible to create a **multivalued lookup field** that lets you select more than one choice from a list, without having to create a more advanced database design. You can create a field that holds multiple values, such as a list of employees that you have assigned to a particular event. Use the Lookup Wizard to create multivalued fields. The Lookup Wizard guides you through the process of creating a field or lookup column that can “look up” data that exists in one or more tables to automate the complexity of manually relating tables. In this exercise, you create a multivalued lookup field using the Lookup Wizard in Datasheet view.

Use a multivalued lookup field when you want to store multiple selections from a list of choices that are relatively small. This is useful if you want to limit the choices a user can select to store in a table field to prevent erroneous data from being entered. For example, you can create a multivalued lookup field to assign only those employees who work in your department to a specific task. Limiting the choices a user can make to enter into a field helps protect the validity of your data.

**Take Note** You can also create lookup columns that allow for a single selection of a value.

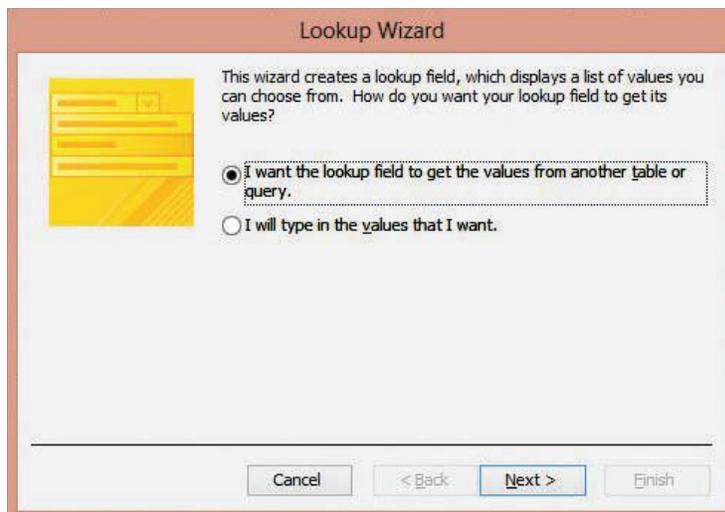
## STEP BY STEP

### Create a Multivalued Lookup Field

**USE** the database that is open from the previous exercise.

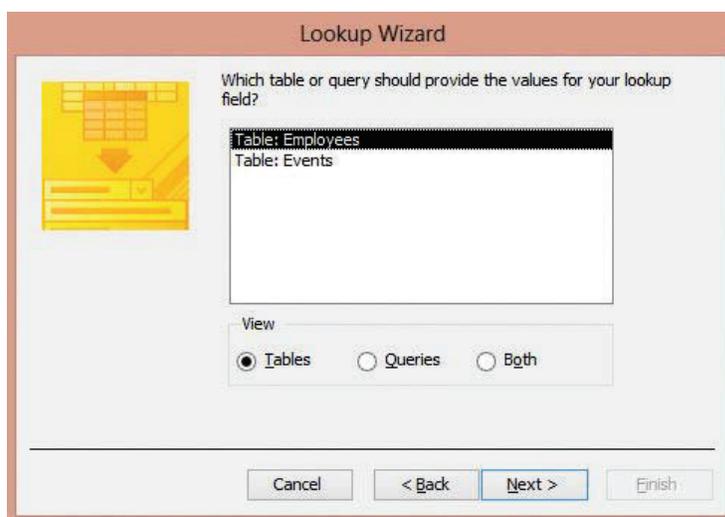
1. Place the insertion point in the first cell of the table. Click the **More Fields** button in the Add & Delete group on the TABLE TOOLS FIELDS contextual tab, then click the **Lookup & Relationship** button. The Lookup Wizard appears (see Figure 4-29).

**Figure 4-29**  
Lookup Wizard



2. Click **Next >** to accept the default setting (*I want the lookup field to get the values from another table or query*) and display the next screen in the Lookup Wizard (see Figure 4-30). Notice you have a choice of two tables to provide the values for the lookup field you are creating. The first table, Employees, should already be selected for you.

**Figure 4-30**  
Lookup Wizard, second screen



3. Click **Next >** to accept the default settings and display the next screen in the Lookup Wizard (see Figure 4-31). The Available Fields scroll box contains all the fields of the Employees table, two of which you will select since they contain the values you want to eventually look up.

Figure 4-31

Lookup Wizard, third screen

4. In the Available Fields list, select **Last Name**, then click the **>** button to move it to the Selected Fields box.
5. In the Available Fields list, select **First Name**, then click the **>** button to move it to the Selected Fields box.
6. Click **Next >** to accept your settings and display the next screen in the Lookup Wizard.
7. Click the **down arrow** in the first box and click **Last Name** (see Figure 4-32). This will sort the Lookup column in alphabetical order by Last Name.

Figure 4-32

Lookup Wizard, fourth screen

8. Click **Next >** to accept your selection and to display the next screen in the Lookup Wizard (see Figure 4-33).

Figure 4-33

Lookup Wizard, fifth screen

How wide would you like the columns in your lookup field?

To adjust the width of a column, drag its right edge to the width you want, or double-click the right edge of the column heading to get the best fit.

Hide key column (recommended)

Last Name	First Name
Jarr	Adam
Carroll	Matthew
Dellamore	Luca
Flood	Kathie
Gray	Chris
Hill	Annette
Mares	Gabe

Cancel < Back Next > Finish

- Click **Next >** to accept the default selection and to hide the primary key column to ensure only relevant and meaningful data displays in the lookup column later. The final screen of the Lookup Wizard displays (see Figure 4-34).

Figure 4-34

Lookup Wizard, final screen

What label would you like for your lookup field?

Field1

Do you want to enable data integrity between these tables?

Enable Data Integrity

Cascade Delete

Restrict Delete

Do you want to store multiple values for this lookup?

Allow Multiple Values

Those are all the answers the wizard needs to create your lookup field.

Cancel < Back Next > Finish

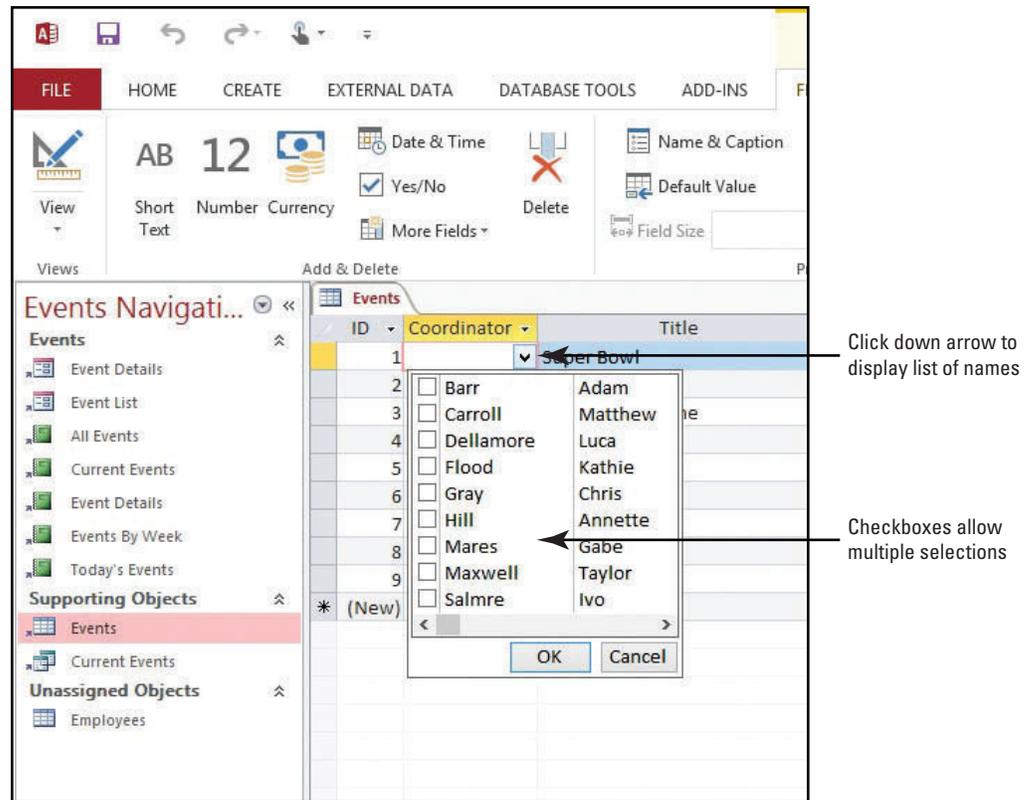


### Another Way

You can also modify the Allow Multiple Values property in the Lookup Field Properties sheet in table Design view.

- In the *What label would you like for your lookup field?* box, key **Coordinator**. This will create a new label named Coordinator for your column.
- Select the **Allow Multiple Values** check box to allow for the multiple selections of values.
- Click the **Finish** button. A new column named Coordinator appears after the ID field. Click the **down arrow** in the first cell to display the list of names (see Figure 4-35).

**Figure 4-35**  
Lookup column list



13. Click **Flood/Kathie** and **Mares/Gabe** on the list and then click **OK** to choose those multiple values for the field.

**STOP. CLOSE** the database.

## SKILL SUMMARY

In This Lesson You Learned How To:	Exam Objective	Objective Number
Modify a Database Table	Add table descriptions.	2.2.4
	Rename tables.	2.2.5
Create Fields and Modify Field Properties	Set default values.	2.4.7
	Change field sizes.	2.4.4
	Use input masks.	2.4.8
	Add validation rules to fields.	2.4.2
	Change field captions.	2.4.3
	Add fields to tables.	2.4.1
Delete fields.	2.4.9	

## Knowledge Assessment

### Fill in the Blank

Complete the following sentences by writing the correct word or words in the blanks provided.

1. \_\_\_\_\_ or \_\_\_\_\_ a table could possibly break the functionality of the database.
2. If you want more space to enter or edit a setting in the property box, press Shift+F2 to display the \_\_\_\_\_ dialog box.
3. A(n) \_\_\_\_\_ contains no characters, and you use it to indicate that you know no value exists for a field.
4. \_\_\_\_\_ specifies the text in the error message that appears when users violate a validation rule.
5. The \_\_\_\_\_ property field specifies the text displayed by default as column names in tables and in labels for forms, reports, and queries.
6. When creating fields, use the commands in the \_\_\_\_\_ group on the TABLE TOOLS FIELDS contextual tab.
7. A(n) \_\_\_\_\_ is a predefined set of characteristics and properties that describes a field.
8. Creating multivalued lookup fields can be accomplished by using the \_\_\_\_\_ Wizard.
9. The \_\_\_\_\_ Quick Start includes fields for City, State, and Zip.
10. You should always consider \_\_\_\_\_ a table before deleting a column.

### Multiple Choice

Select the best response for the following statements or questions.

1. To rename a table or other database object, first
  - a. save it.
  - b. close it.
  - c. edit it.
  - d. open it.
2. If you delete a database table,
  - a. you cannot undo the action.
  - b. click Undo to restore the table.
  - c. it is still available in the Navigation Pane.
  - d. the data is transferred to the Clipboard.
3. A complete list of field properties is available in
  - a. the Navigation Pane.
  - b. Datasheet view.
  - c. Design view.
  - d. all of the above.
4. Which of the following is *not* a field property?
  - a. Column Template
  - b. Field Size
  - c. Caption
  - d. Allow Zero Length
5. Which field property requires users to enter data in a specific format?
  - a. Validation Text
  - b. Default Value
  - c. Required
  - d. Input Mask
6. The Default Value property can be used for which field?
  - a. Short Text.
  - b. Number.
  - c. Currency.
  - d. All of the above.

7. Which of the following is *not* a way to validate data?
  - a. Data type
  - b. Field sizes
  - c. Filtering
  - d. Field properties
8. The Caption field property is used for which field type?
  - a. Short Text
  - b. Attachment
  - c. Date/Time
  - d. All of the above
9. Which type of field allows you to select more than one choice from a list?
  - a. Attachment
  - b. Multivalued
  - c. Caption
  - d. Validation
10. To delete a field in Datasheet view, select the column, right-click, and then click Delete Field from the
  - a. Quick Access toolbar.
  - b. Lookup Wizard.
  - c. Shortcut menu.
  - d. HOME tab.

## Competency Assessment

### Project 4-1: Home Inventory

You decide to use Access to create a home inventory database for insurance purposes. To include all the information you want, you need to add several fields to the existing table.

**GET READY. LAUNCH** Access if it is not already running.



1. **OPEN** the *Home inventory* database from the data files for this lesson.
2. **SAVE** the database as *Home inventoryXXX* (where XXX is your initials).
3. In the Navigation Pane, double-click the **Assets** table to open it.
4. Horizontally scroll to the end of the table and click in the **cell** below the Click to Add header.
5. On the TABLE TOOLS FIELDS contextual tab, in the Add & Delete group, click the **More Fields** button and click **Yes/No** in the Yes/No category. A column named Field1 is created.
6. On the TABLE TOOLS FIELDS contextual tab, in the Properties group, click the **Name & Caption** button.
7. Key **Insured** to rename the Field1 column. Click **OK** to close the dialog box.
8. Click in the **cell** below the Click to Add header.
9. On the TABLE TOOLS FIELDS contextual tab, in the Add & Delete group, click the **More Fields** button and click **Attachment** in the Basic Types category to create an attachment field.
10. **CLOSE** the database.

**LEAVE** Access open for the next project.

### Project 4-2: Customer Service

You are employed in the customer service department at City Power & Light. Each call that is received is recorded in an Access database. Because you know how to modify tables and fields,

your supervisor asks you to add a lookup column to the Calls table to record the customer service representative who receives the call.

**GET READY. LAUNCH** Access if it is not already running.



1. **OPEN** *Customer service* from the data files for this lesson.
2. **SAVE** the database as *Customer serviceXXX* (where XXX is your initials).
3. In the Navigation Pane, double-click the **Calls** table to open it. Place the insertion point in the first cell of the table, if necessary.
4. On the TABLE TOOLS FIELDS contextual tab, in the Add & Delete group, click the **More Fields** button, and then click the **Lookup & Relationship** button. The Lookup Wizard appears.
5. Click **Next >** to display the next screen in the Lookup Wizard.
6. Select **Table: Employees** and click **Next >**.
7. In the Available Fields list, select **First Name**, then click the **>** button to move it to the Selected Fields box.
8. In the Available Fields list, select **Last Name**, then click the **>** button to move it to the Selected Fields box.
9. Click **Next >** to display the next screen in the Lookup Wizard.
10. Click the **down arrow** in the first box and click **Last Name**.
11. Click **Next >** to display the next screen in the Lookup Wizard.
12. Click **Next >** again to display the final screen in the Lookup Wizard.
13. In the *What label would you like for your lookup field?* box, key **Service Rep.**
14. Click the **Finish** button. A new column named Service Rep appears as the second column of the table.
15. Click the **down arrow** and choose **Clair/Hector** from the list.

**LEAVE** the database open for the next project.

## Proficiency Assessment

### Project 4-3: Modify Field Properties

Your supervisor at City Power & Light asks you to make some modifications to the field properties in the Calls table of the customer service database.

**USE** the database that is open from the previous project.

1. Switch to Design View.
2. Display the Lookup field properties for the **Service Rep** field.
3. Change the Allow Multiple Values property to **Yes** and confirm the change.
4. Display the General field properties for the Call Time field.
5. Change the Validation Rule property so that the value must be **greater than 1/1/2000**.
6. Change the Validation Text property to say **Please enter a value that is later than 1/1/2000**.
7. Display the General field properties for the Caller field.
8. Change the Field Size property to **60**.
9. Display the General field properties for the Notes field.
10. Change the Allow Zero Length property to **Yes**.
11. Set the Default Value property by keying **Comments:**.

12. Save the table. If a data integrity message appears, click **No**.
13. **CLOSE** the database.

**LEAVE** Access open for the next project.

---

### Project 4-4: Modify Database Tables

You work as the operations manager at Alpine Ski House and decide to increase your efficiency by using Access to plan the annual race events. You have started to create a database to manage the events sponsored by the company but need to modify the tables.

**GET READY. LAUNCH** Access if it is not already running.



1. **OPEN** *Alpine* from the data files for this lesson.
2. **SAVE** the database as *AlpineXXX* (where XXX is your initials).
3. Delete the Nordic Events table and confirm the action.
4. Rename the World Cup table to **Championships**.
5. Open the **Events** table and switch to **Design view**.
6. Display the property sheet.
7. In the Description property box, key **Annual events**.
8. Save the table.
9. **CLOSE** the database.

**LEAVE** Access open for the next project.

---

## Mastery Assessment

### Project 4-5: Changing List Items

You are the owner of Fourth Coffee, a growing company that is converting all of its data from spreadsheets to Access. You directed an intern to create a database with tables to be used to track inventory. You want to make some modifications to these database tables before you enter information in the database.

**GET READY. LAUNCH** Access if it is not already running.



1. **OPEN** *Fourth Coffee* from the data files for this lesson.
2. **SAVE** the database as *Fourth CoffeeXXX* (where XXX is your initials).
3. Open the Coffee Beans table and create a **new Lookup field** as the last field in the table that uses the Country field in the Countries table. Specify an **ascending sort order** for the records in this field.
4. Rename the field **Origin**.
5. In Datasheet view, change the name and caption of the Current Value field to **Market Value**.
6. In Datasheet view, change the name and caption of the Acquired Date field to **Acquisition Date**.
7. Create a Yes/No field as the last field in the table named *Stocked* with a caption named **In Stock?**
8. In Design view, create an input mask for all fields that use the Date/Time data type. Choose **Medium Date** as the input mask and accept all default values.
9. **SAVE** the table.
10. **CLOSE** the database.

**LEAVE** Access open for the next project.

---

### Project 4-6: Lending Library

You have an extensive personal library that friends and family frequently ask to share. To keep track of all your books, you decide to use Access to create a lending library database.

**GET READY. LAUNCH** Access if it is not already running.



1. **OPEN** *Lending library* from the data files for this lesson.
2. **SAVE** the database as *Lending libraryXXX* (where XXX is your initials).
3. Delete the Manufacturer, Model, and Retired Date fields from the Assets table.
4. Create a new field in the Assets table with the Yes/No datatype and change its name and caption to Rare?
5. In the Assets table, change the Field Size property of the Item field to 100.
6. Rename the Assets table to Books.
7. Save and close the table.
8. In the Contacts table, create a new Lookup field named Borrower Status that looks up data from the Status field of the Borrower table.
9. Save and close the table.
10. **CLOSE** the database.

**CLOSE** Access.

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WILEY