

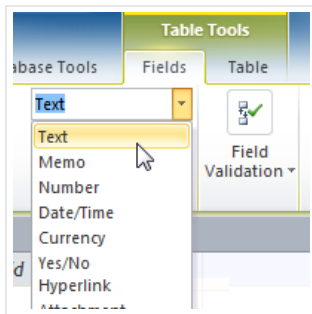
Access 2010

Modifying Tables



Page 1

Introduction



After working with your database, you might find that you need to make some changes to the tables that store your data. Access makes it easy to modify your tables to suit your database's needs.

In this lesson, you'll learn how to **create** and **rearrange** table fields. You'll also learn how to ensure that your table data is correctly and consistently formatted by setting **validation rules**, **character limits**, and **data types** in your fields. Finally, we will direct you to additional options for performing simple math functions within your tables.

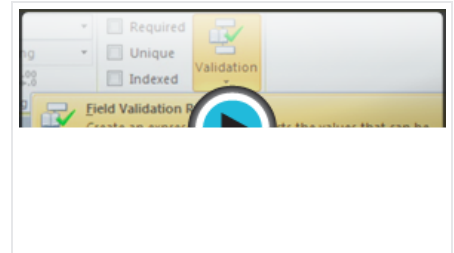
We will be showing you how to modify tables with examples from our sample bakery database. If you would like to follow along, [download our example](#) and use it to follow the procedures demonstrated in this lesson.

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Modifying tables

In addition to making basic modifications to your tables, like **adding** and **moving** fields, you can make more advanced modifications that let you set **rules** for your data. All of these changes can help make your tables even more useful.

Video: Modifying Tables in Access 2010



Adding and rearranging fields

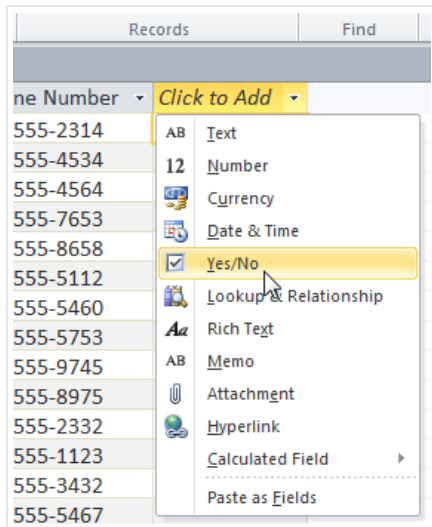
Access makes it easy to rearrange existing fields and add new ones. When you add a new field, you can even set the **data type**, which dictates which **type** of data can be entered into that field.

To add a new field to an existing table:

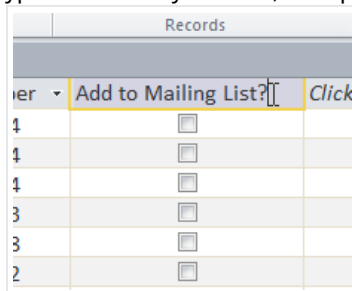
1. Open the table, then click the header with the text **Click to Add**. If you already have many fields, you may have to scroll all the way to the right to see this.

Sort & Filter		Records	Find
Customers			
Email	Phone Number	Click to Add	
beck@email.com	919-555-2314		
lugeo@email.com	919-555-4534		
texj@email.com	919-555-4564		
newkh@email.com	919-555-7653		

2. A drop-down menu will appear. Select the **data type** you'd like for the new field.
 - **Text:** This is the default option, and best for text. You should also choose it for numbers you don't plan to do math with, like postal codes and phone numbers.
 - **Number:** This is best for numbers you might want to do calculations with, like quantities of an item ordered or sold.
 - **Currency:** This automatically formats numbers in the currency used in your region.
 - **Date & Time:** This allows you to choose a date from a pop-out calendar.
 - **Yes/No:** This inserts a check box into your field.
 - **Memo:** This is ideal for large amounts of text, like product descriptions. You can format text entered in Memo fields.
 - **Attachment:** This allows you to attach files, like images.
 - **Hyperlink:** This creates a link out of web or email addresses.

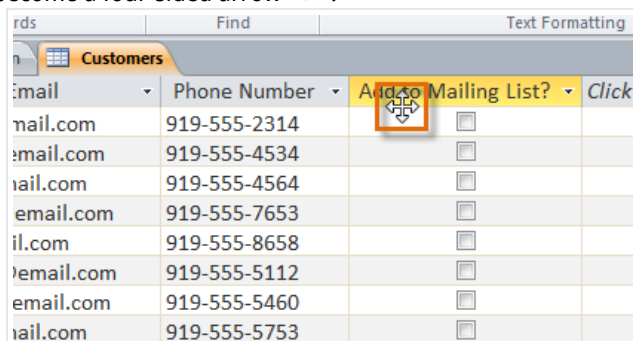


3. Type a name for your field, then press **Enter**.

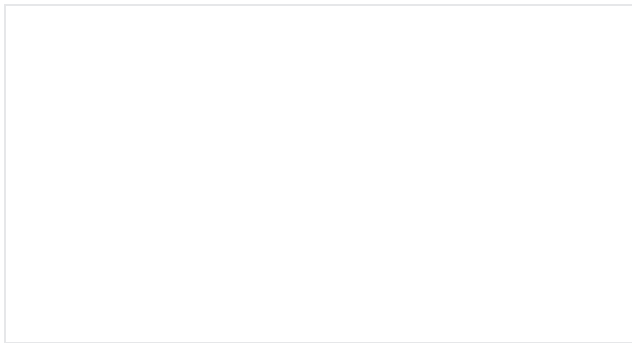


To move a field:

1. Locate the field you wish to move, then hover your mouse over the **bottom border** of the **field header**. Your cursor will become a four-sided arrow.



2. **Click** and **drag** the field to its new location.



3. **Release** your cursor. The field will appear in the new location.

ards	Find	Text Formatting	
Customers			
Email	Add to Mailing List?	Phone Number	Click
mail.com	<input type="checkbox"/>	919-555-2314	
email.com	<input type="checkbox"/>	919-555-4534	
ail.com	<input type="checkbox"/>	919-555-4564	
email.com	<input type="checkbox"/>	919-555-7653	
il.com	<input type="checkbox"/>	919-555-8658	
email.com	<input type="checkbox"/>	919-555-5112	
email.com	<input type="checkbox"/>	919-555-5460	
ail.com	<input type="checkbox"/>	919-555-5753	

Advanced field options

On the previous page, you learned about setting the **data type** for new fields. When you set field data type, you are really setting a **rule** for that field. Databases often include rules because they are a way of guaranteeing that users enter the correct type of data.

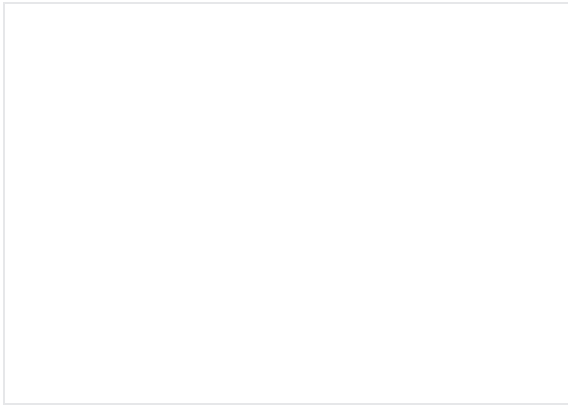
Why is this important? Computers aren't as smart as humans about certain things. While you might recognize that "two" and "2" or "NC" and "North Carolina" are the same thing, Access will not, and therefore won't group these things together. Making sure to enter your data in a standard format will help you better organize, count, and understand it.

Rules can also determine what options you have for working with that data. For example, you can only do math with data entered in **number** or **currency** fields, and you can only format text entered in **memo** fields.

There are three main types of rules you can set for a field: **data type**, **character limit**, and **validation rules**.

To change the data type for existing fields:

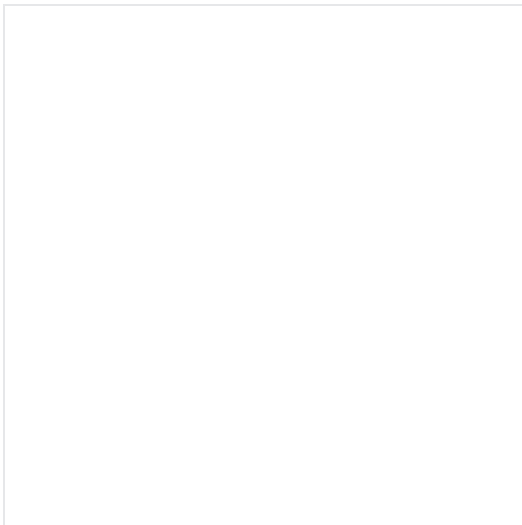
1. Select the field whose data type you wish to change.
2. On the Ribbon, select the **Fields** tab, then locate the **Formatting** group. Click the **Data Type** drop-down arrow.



3. Select the desired data type.



4. The field data type will be changed. Depending on the data type you chose, you may notice changes to your information. For instance, since we set the data type for the **Email** field to **Hyperlink**, all of the email addresses in the field are now clickable links.



You shouldn't change field data type unless you are certain your field data is in the correct format for the new data type. Changing a field containing only text to the **Number** type, for instance, will delete all of your field data. This process is often irreversible.

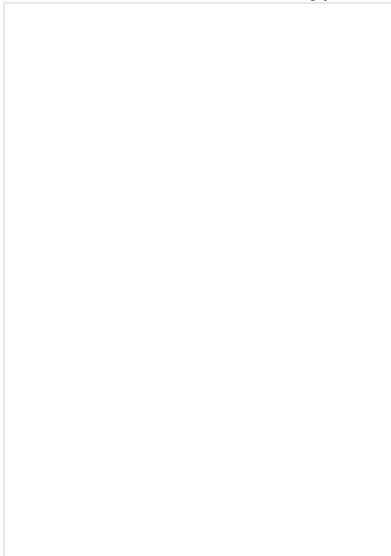
Field character limits

Setting the character limit for a field sets a rule about how many characters—letters, numbers, punctuation, and even spaces—can be entered in that field. This can be useful to keep the data in your records concise, or even to force a user to enter data a certain way.

For instance, in the example below, the user is entering records that include addresses. If you set the character limit in the "state" field as "2," the user can only enter 2 characters of information. This means he must enter postal abbreviations for the states instead of their full names—here, NC instead of North Carolina. Note that you can only set a character limit for fields defined as text.

To set a character limit for a field:

1. Select the desired field.
2. Click the **Fields** tab in the **Table Tools** tab group, then locate the **Properties** group.
3. In the box next to **Field Size**, type the maximum number of characters you would like to allow in your field.



4. **Save** your table.

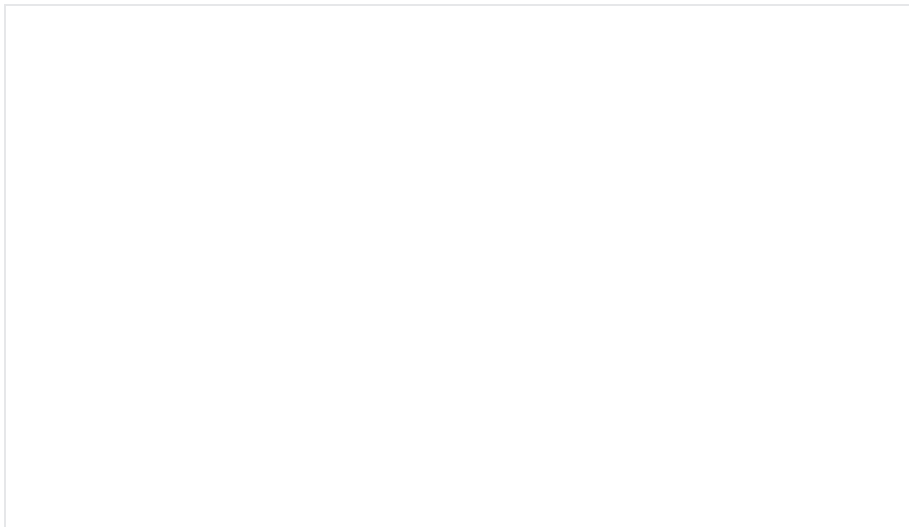
Validation rules

A **validation rule** is a rule that dictates what information can be entered into a field. When a validation rule is in place, it is impossible for a user to enter data that violates that rule. For example, if we were asking the user to input a state name into a table with contact information, we might create a rule that limits the valid responses to U.S. state postal codes. This would prevent users from typing something that wasn't actually a real state postal code.

In the example below, we will apply that rule to our **Customers** table. It's a fairly simple validation rule—we'll just name all of the valid responses a user could enter, which will mean the user can't type anything else into the record. However, it's possible to create validation rules that are much more complex. For detailed information on how to write validation rules, review this [official Microsoft office tutorial on creating validation rules](#).

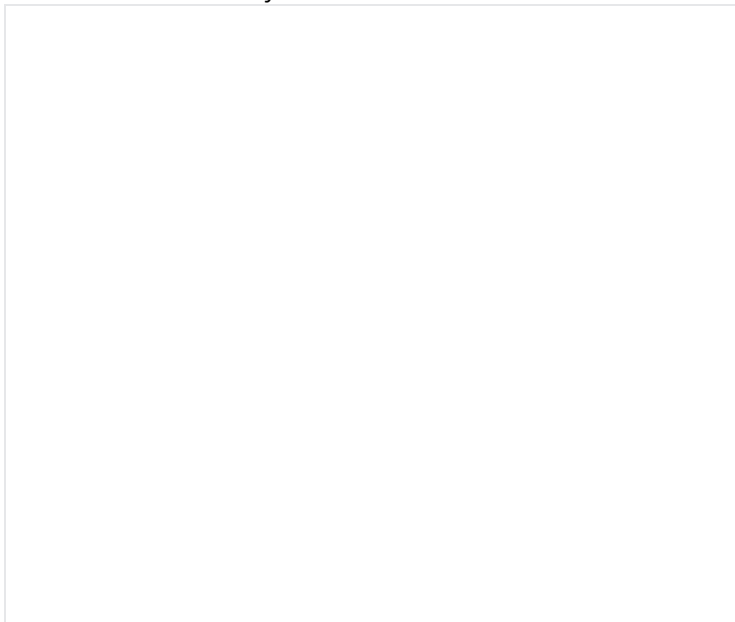
To create a validation rule:

1. Select the field where you wish to add a validation rule. For our example, we'll set a rule for the **State** field.
2. On the Ribbon, select the **Fields** tab, then locate the **Field Validation** group. Click the **Validation** drop-down command, then select **Field Validation Rule**.

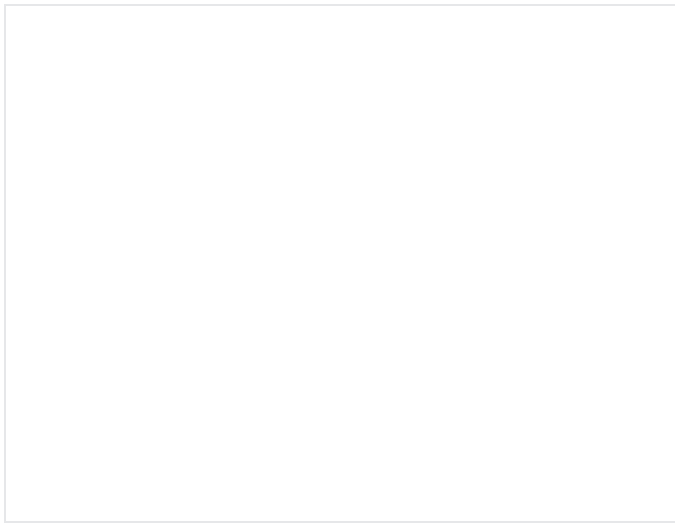


3. The **Expression Builder** dialog box will appear. Click the text box, and type in your validation rule.

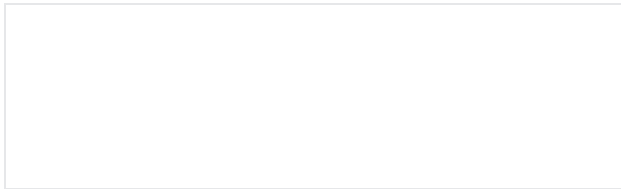
In our example, we want to limit data in the **State** field to actual state postal codes. We'll type each of the valid responses in quotation marks and separate them with the word **Or**, which lets Access know that this field can accept the response "AL" **or** "AK" **or** "AZ" or any of the other terms we've entered.



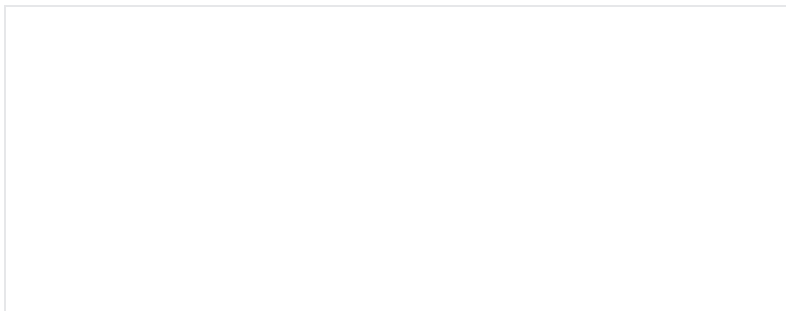
4. Once you're satisfied with the validation rule, click **OK**. The dialog box will close.
5. Click the **Validation** drop-down command again. This time, select **Field Validation Message**.



6. The **Enter Validation Message** dialog box will appear. Type the phrase you would like to appear in an **error message** when a user tries to enter data that **violates** the validation rule. Your message should let the user know what data is permitted.



7. When you're satisfied with the error message, click **OK**.
8. The validation rule is now included in the field. Users will be unable to enter data that violates the rule.

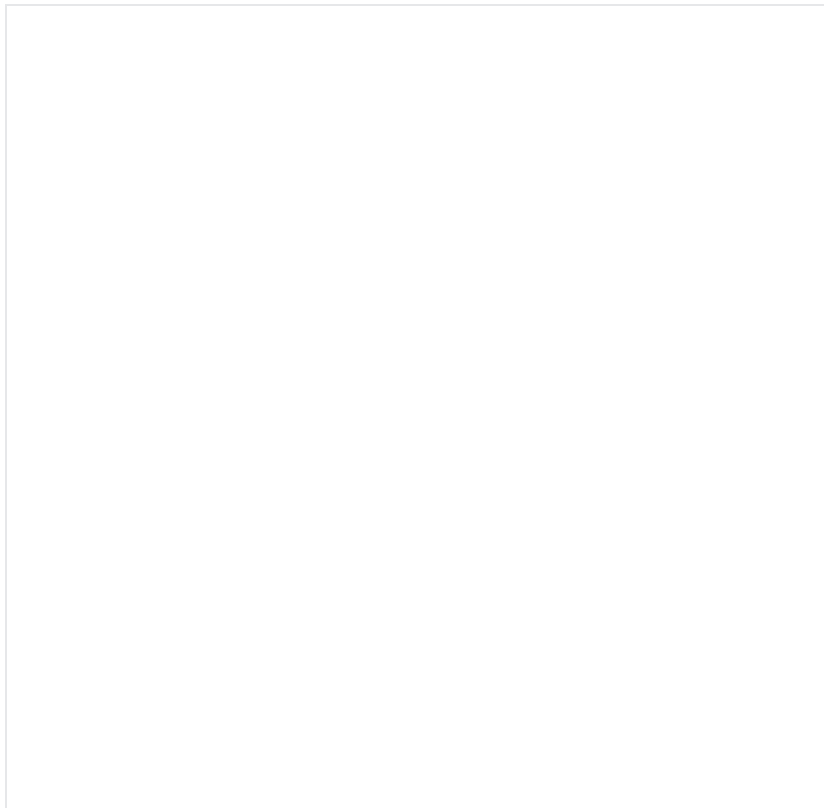


Simple validation rules can be written exactly like **query criteria**. The only difference is that query criteria search for data, while an identical validation rule either **permits** or **rejects** data. To see examples of query criteria, review our [Query Criteria Quick Reference Guide](#).

More table options

Calculated fields and totals rows

Adding **calculated fields** and **totals rows** to your table lets you perform **calculations** using your table data. A calculated field calculates data within one record, while a totals row performs a calculation on an entire field of data. Whenever you see a **subtotal** for one record, you are looking at a calculated field. Likewise, a **grand total** at the bottom of a table is really a totals row.



To learn how to create **calculated fields** and **totals rows**, review our mini-lesson located in our Extras section on [How to Create Calculated Fields and Totals Rows in Tables](#).

Challenge!

1. If you haven't already, download our [sample database](#) and **open** it.
2. **Open** the **Products Table**, and change the **data type** for the description field to **Memo**.
3. **Open** the **Customers Table**, and then add a new field that uses the **Memo** data type. Name the new field "Credit Card".
4. Add the following **Field Validation Rule** to the Credit Card field: **"VS" Or "MC" Or "AMX"**
5. Set a **field validation message** for the same field. It should say "Enter a valid Credit Card Type: Must be VS, MC, or AMX."
6. **Test** your **field validation rule** by typing **Visa** into a cell in the **Credit Card** field. If you've added the rule correctly, a dialog box should appear with the message you added above.