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Week 8

Simple Formatted Report

- If you need to share information from your database with someone but don't want that person actually working with your database, consider creating a **report**.
- Reports allow you to organize and present your data in a reader-friendly, visually appealing format.
- Access makes it easy to create and customize a report using data from any query or table in your database.

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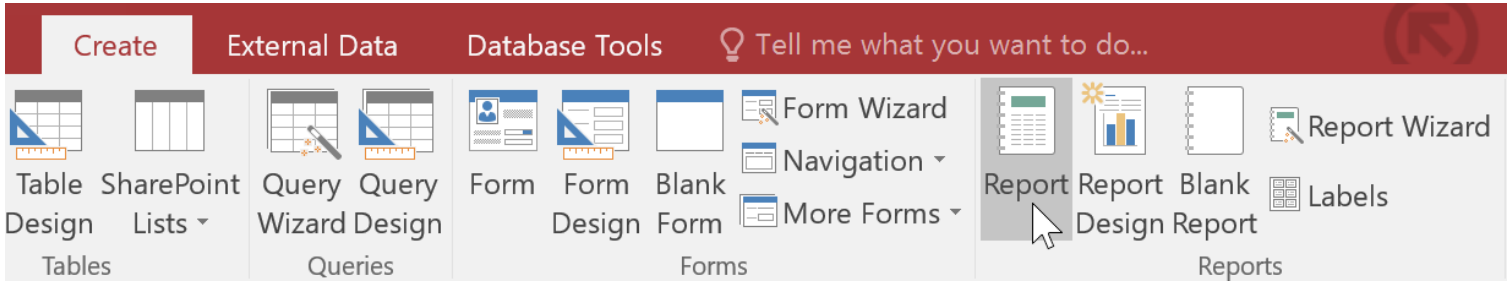
- **Reports** give you the ability to present components of your database in an easy-to-read, printable format. Access lets you create reports from both **tables** and **queries**.
- Open the table or query you want to use in your report. For this example, we want to print a list of cookies we've sold, so we'll open the **Cookies Sold** query.
- Select the **Create** tab on the Ribbon. Locate the **Reports** group, then click the **Report** command.



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- Access will create a new report based on your object.
- It's likely that some of your data will be located on the other side of the **page break**.
- To fix this, **resize** your fields.
- Simply select a field, then **click** and **drag** its edge until the field is the desired size.
- **Repeat** with additional fields until all of your fields fit.
- Just like tables and queries, reports can be **sorted** and **filtered**.
- Simply **right-click** the field you want to sort or filter, then select the desired option from the menu.

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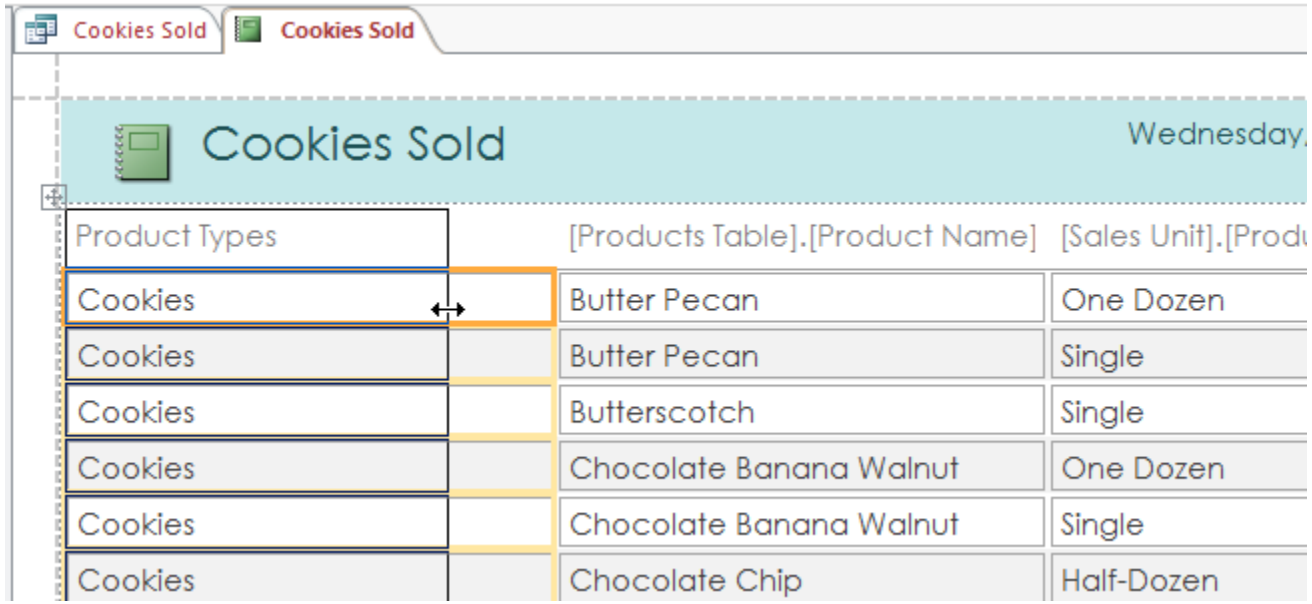

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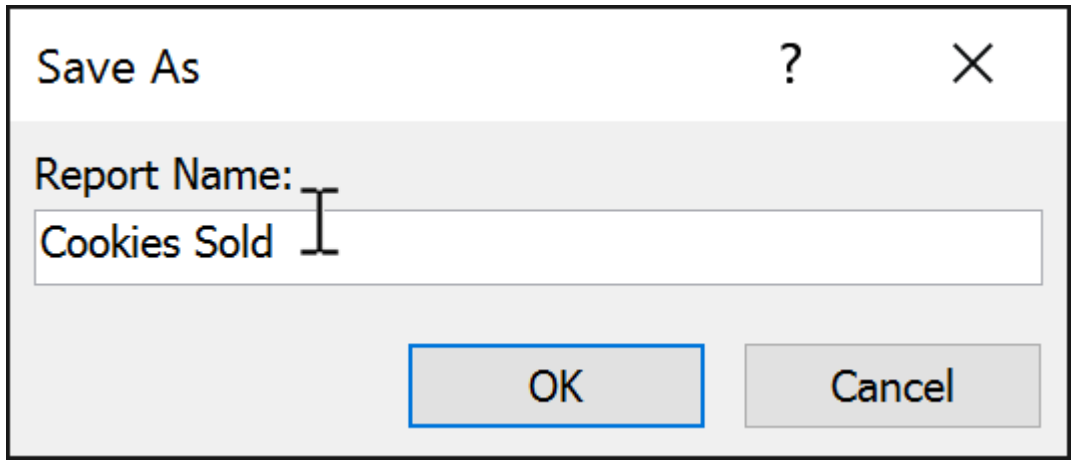
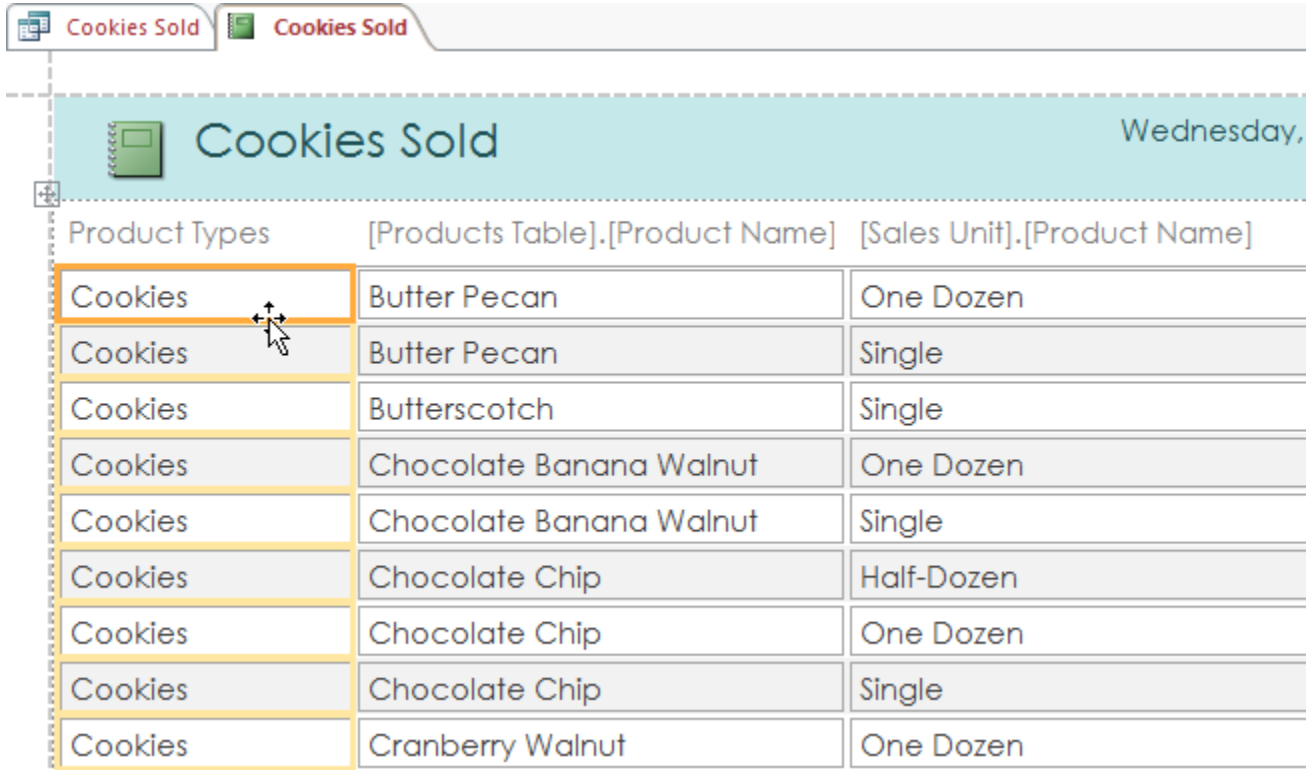
- To **save** your report, click the **Save** command on the **Quick Access Toolbar**. When prompted, type a **name** for your report, then click **OK**.



Deleting Fields

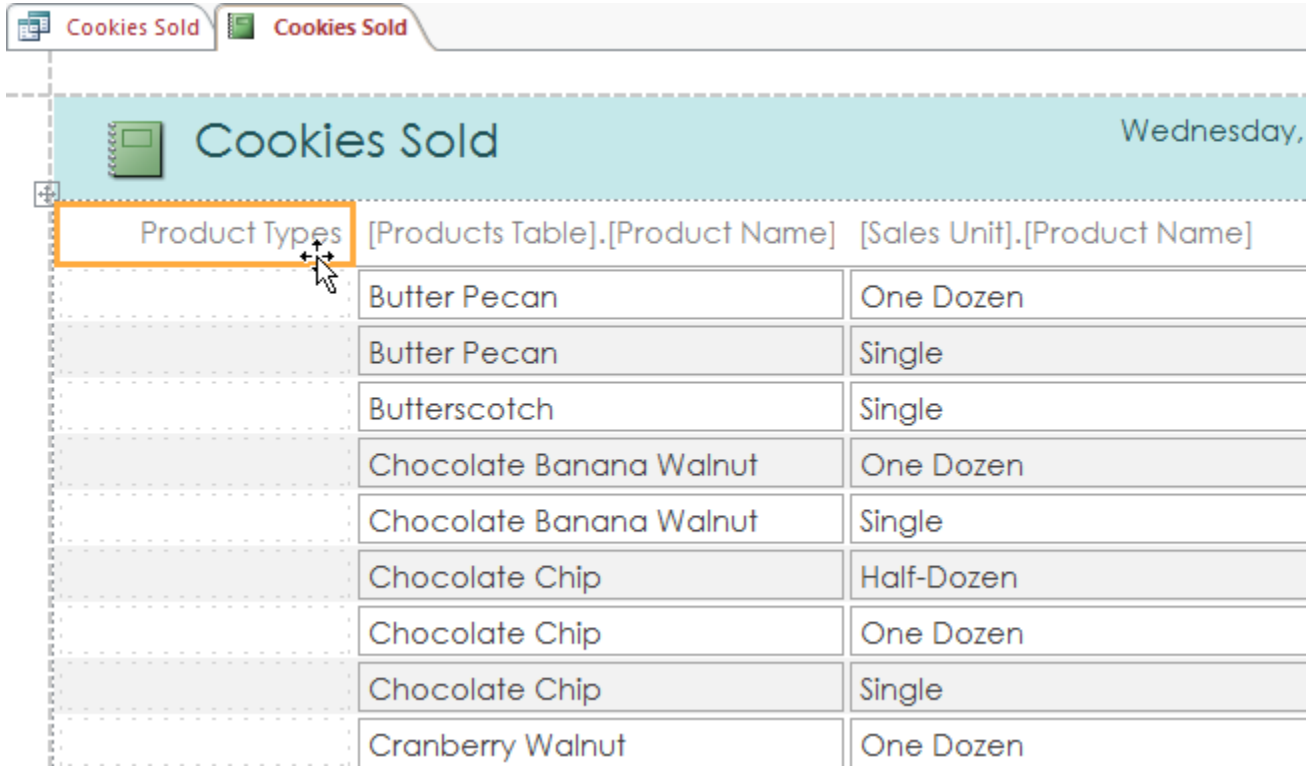
- You might find that your report contains some fields you don't really need to view.
- For instance, our report contains the **Zip Code** field, which isn't necessary in a list of orders.
- Fortunately, you can **delete** fields in reports without affecting the table or query where you grabbed your data.
- Click any cell in the field you want to delete, then press the **Delete** key on your keyboard.

Deleting Fields



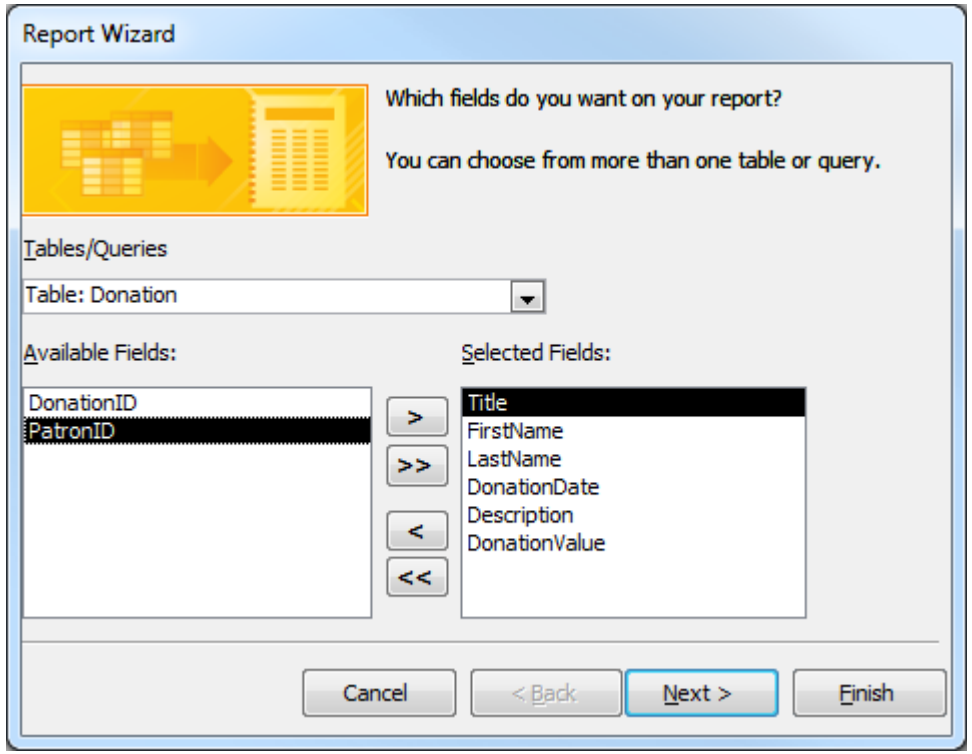
Deleting Fields

- When you delete a field, be sure to delete its header as well. Simply select the header and press the **Delete** key.



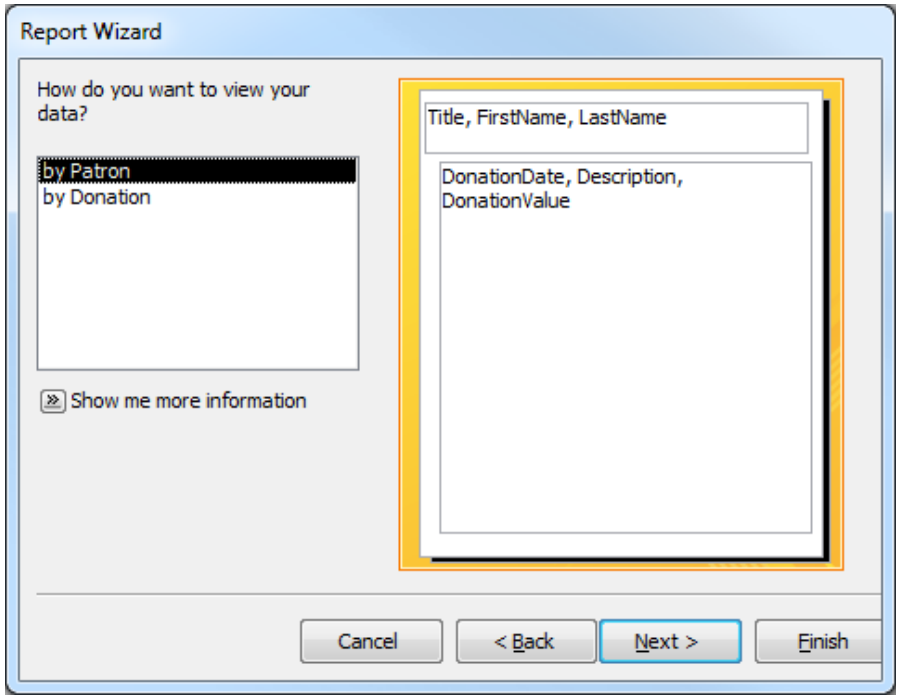
Report Wizard

- The Report Wizard gives you more control over which fields you would like to display.



Report Wizard

- When selecting columns from multiple tables that already have a proper relationship set, the one side (Parent/Primary Table) will be used like a group heading.
- Additional levels of grouping could be used if required



Report Wizard

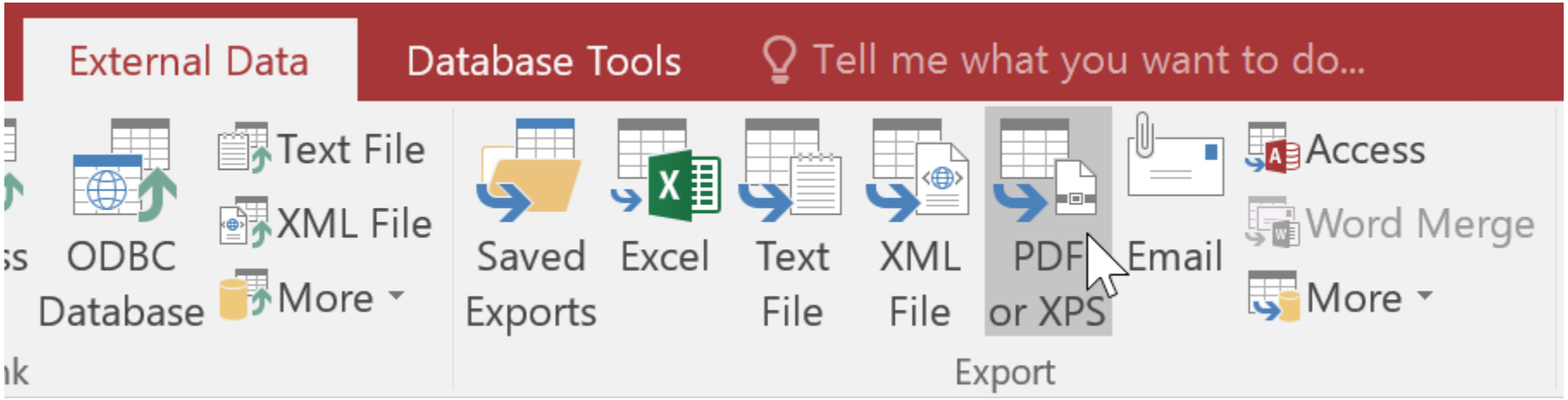
- The wizard also allows you to add one or many sorts
- Layout and orientation are the final steps. You could always manually change this later as you work in design view.
- Play around with which layout works best for the current project, and edit that one as required.

Exporting Reports

- You can save reports in other formats so they'll be viewable outside of Access.
- This is called **exporting** a file, and it allows you to view and even modify reports in other formats and programs.
- Access offers options to save your report as an **Excel file**, **text file**, **PDF**, **HTML documen**t, and more.
- Experiment with the different export options to find the one that best suits your needs.

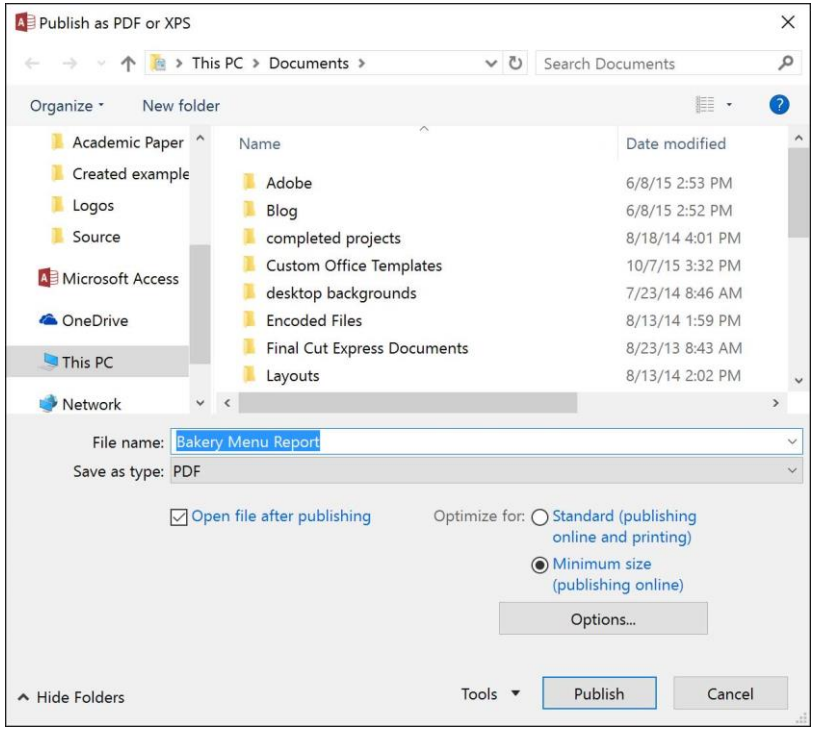
Exporting Reports

- From the **Home** tab, click the **View** command, then select **Print Preview** from the drop-down list.
- Locate the **Data** group on the Ribbon.
- Select one of the file type options, or click **More** to see options to save your report as a **Word** or **HTML** file.



Exporting Reports

- A dialog box will appear. Select the **location** where you want to save the report.
- Enter a **file name** for the report, then click **Publish**.



Validation Rules

- You can vet or validate data in Access desktop databases as you enter it by using validation rules.
- A validation rule is one way to restrict input in a table field or a control (such as a text box) on a form. Validation text lets you provide a message to help users who input data that is not valid.
- There is one trap to avoid.
- In some versions of Access, you will not be able to leave the field blank once you add the validation rule, i.e. you must enter something that satisfies the rule. If you need to be able to leave the field blank, add *OR Is Null* to your rule.

Validation Rules

- There are three types of validation rules in Access:
  - **Field Validation Rule** You can use a validation rule to specify a criterion that all valid field values must meet. For example, a date field might have a validation rule that disallows values in the past.
  - **Record Validation Rule** You can use a validation rule to specify a condition that all valid records must satisfy. For example, a record with two date fields might require that values of one field always precede values of the other field (e.g., StartDate is before EndDate).
  - **Validation on a form** You can use the **Validation Rule** property of a control on a form to specify a criterion that all values input to that control must meet. The **Validation Rule** control property works like a Field Validation Rule.

Validation Rules

- Access provides a number of ways to restrict input:
  - **Data types** Every table field has a data type that restricts what users can enter. For example, a Date/Time field accepts only dates and times, a Currency field accepts only monetary data, and so on.
  - **Field properties** Some field properties restrict data input. For example, the **Field Size** property of a field restricts input by limiting the amount of data.

Validation Rules

- You can also use 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 **>100 And <1000** in the **Validation Rule** property forces users to enter values between 100 and 1,000.
- A rule such as **[EndDate]>=[StartDate]** forces users to enter an ending date that occurs on or after a starting date.
- Entering text such as "Enter values between 100 and 1,000" or "Enter an ending date on or after the start date" in the **Validation Text** property tells users when they have made a mistake and how to fix the error.
- **Input masks** You can use an input mask to validate data by forcing users to enter values in a specific way. For example, an input mask can force users to enter dates in a European format, such as 2007.04.14.

Field Validation Rule

- A **validation rule** is a rule that dictates which 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 the rule. For example, if we were asking users 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 this 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 users 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 tutorial from Microsoft on **creating validation rules**.
- To create a validation rule:
- Select the field you want to add a validation rule to. In our example, we'll set a rule for the **State** field.
- Select the **Fields** tab, then locate the **Field Validation** group. Click the **Validation** drop-down command, then select **Field Validation Rule**.

Field Validation Rule

- The **Expression Builder** dialog box will appear. Click the text box and type 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.
- Once you're satisfied with the validation rule, click **OK**. The dialog box will close.
- Click the **Validation** drop-down command again. This time, select **Field Validation Message**.
- A dialog box will appear. Type the phrase you want to appear in an **error message** when users try to enter data that **violates** the validation rule. Your message should let them know what data is permitted.
- When you're satisfied with the error message, click **OK**.
- 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**.

Record Validation Rules

- **Record validation rules** Use a record validation rule to control when you can save a record (a row in a table).
- Unlike a field validation rule, a record validation rule refers to other fields in the same table.
- You create record validation rules when you need to check the values in one field against the values in another.
- For example, suppose your business requires you to ship products within 30 days and, if you don't ship within that time, you must refund part of the purchase price to your customer.
- You can define a record validation rule such as **[RequiredDate]<=[OrderDate]+30** to ensure that someone doesn't enter a ship date (the value in the RequiredDate field) too far into the future.

Record Validation Rules

- Open the table for which you want to validate records.
- On the **Fields** tab, in the **Field Validation** group, click **Validation**, and then click **Validation Rule**.
- Use the Expression Builder to create the rule. For more information about using the Expression Builder, see the article Use the Expression Builder.

Form Validation Rule

- You can use the **Validation Rule** property and the **Validation Text** property of a form control to validate data that is input to that control and to help users who input data that is not valid.
- A control can have a different validation rule from the table field to which the control is bound. This is useful if you want the form to be more restrictive than the table. The form rule is applied, and then the table rule is applied. If the table is more restrictive than the form, the rule defined for the table field takes precedence. If the rules are mutually exclusive, they prevent you from entering any data at all.

Form Validation Rule

- For example, suppose you apply the following rule to a date field in a table: <#01/01/2010#
- But you then apply this rule to the form control that is bound to the date field: >=#01/01/2010#
- The date field now requires values earlier than the year 2010, but the form control requires dates have that year or later, thus preventing you from entering any data at all.

Form Validation Rule

- Right-click the form that you want to change, and then click **Layout View**.
- Right-click the control that you want to change, and then click **Properties** to open the property sheet for the control.
- Click the **All** tab, and then enter your validation rule in the **Validation Rule** property box.

Advanced Validation Rules

To do this ...	Validation Rule for Fields	Explanation
Accept letters (a - z) only	Is Null OR Not Like "*[!a-z]*"	Any character outside the range A to Z is rejected. (Case insensitive.)
Accept digits (0 - 9) only	Is Null OR Not Like "*[!0-9]*"	Any character outside the range 0 to 9 is rejected. (Decimal point and negative sign rejected.)
Letters and spaces only	Is Null Or Not Like "*[!a-z OR "" ""]*"	Punctuation and digits rejected.
Digits and letters only	Is Null OR Not Like "*[!((a-z) or (0-9))]*"	Accepts A to Z and 0 to 9, but no punctuation or other characters.
Exactly 8 characters	Is Null OR Like "????????"	The question mark stands for one character.
Exactly 4 digits	Is Null OR Between 1000 And 9999	For Number fields.
	Is Null OR Like "####"	For Text fields.
Positive numbers only	Is Null OR >= 0	Remove the "=" if zero is not allowed either.
No more than 100%	Is Null OR Between -1 And 1	100% is 1. Use 0 instead of -1 if negative percentages are not allowed.
Not a future date	Is Null OR <= Date()	
Email address	Is Null OR ((Like "*?@?*.?*") AND (Not Like "*[,;]*"))	Requires at least one character, @, at least one character, dot, at least one character. Space, comma, and semicolon are not permitted.
You must fill in *Field1*	Not Null	Same as setting the field's *Required* property, but lets you create a custom message (in the *Validation Text* property.)
Limit to specific choices	Is Null OR "M" Or "F"	It is better to use a lookup table for the list, but this may be useful for simple choices such as Male/Female.
	Is Null OR IN (1, 2, 4, 8)	The IN operator may be simpler than several ORs.
Yes/No/Null field	Is Null OR 0 or -1	The Yes/No field in Access does not support Null as other databases do. To simulate a real Yes/No/Null data type, use a Number field (size Integer) with this rule. (Access uses 0 for False, and -1 for True.)

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- Information from http://www.gcflearnfree.org/access2016 and other web resources