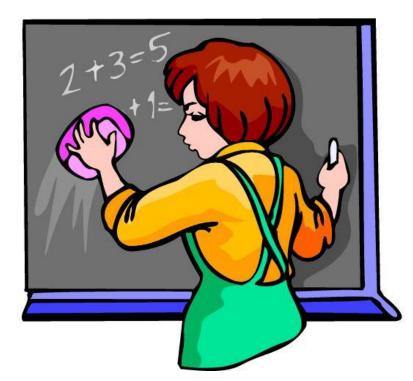


FileMaker Pro 9.0

Instructor: Donna Herbert x4357



Advanced Calculations and Reporting

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<u>Advanced Reporting</u>

The information you store in FileMaker Pro files will often provide the basis for reports that you choose to produce. These reports may contain a great deal of detail or they may present only a summary of the information that is in your file. The key to preparing these reports is a thorough understanding of the different layout parts.

<u>Layout Parts</u>

Parts give you control over what appears on your report and where it appears. The chart below summarizes FileMaker's parts and how they work.

Part	Location	How Part Works
Title Header	Top of page 1 only.	Any objects in this part will print only at the top of page 1.
Header	Top of every page. If there is a title header on the same layout, the header will not print on page 1.	Any objects in this part will print at the top of every page except page 1 if there is a title header.
Leading Grand Summary	One time at the beginning of the report.	Summary fields will summarize data from entire found set. Other objects will print one time at the beginning of the report.
Leading Subsummary	Prints one time, just before the detail of the records it is summarizing.	Acts as a subtotaling area. Records must be sorted on the field by which Subsummary groups them. (i.e. category) Summary fields will summarize just the records in each sub group. Other objects print one time per group.
Body	Prints one time for every record in the found set.	Prints/displays the detail in your report. May be divided by leading/trailing subsummaries.
Trailing Subsummary	Prints one time immediately after the detail of the records it is summarizing.	Acts as a subtotaling area. Records must be sorted on the field by which Subsummary groups them. (i.e. category) Summary fields will summarize just the records in each sub group. Other objects print one time per page.
Trailing Grand One time at the end of the report. Summary		Summary fields will summarize data from entire found set. Other objects will print one time at the beginning of the report.
Footer	Bottom of every page. If there is a title footer on the same layout, footer will not print on page 1.	Any objects in this part will print at the bottom of every page except page 1 if there is a title footer.
Title Footer	Bottom of page 1 only.	Any objects in this part will print only at the bottom of page 1.

More on Layout Parts

The following picture is a Blank layout with all of the parts available to FileMaker Pro. Each part spans the area from the line that extends from its label upward to the line that begins the next part. The line attached to the label is included in the labeled part.

Layout UPT Layout: Layout #	Title Header
.	Header
Layout:	Sub-summary by City (Leading)
Total: 4	The area above and including each dotted line
AN DOO ®	Body belongs to the part labeled at the left end of the line.
Field 🕹	Sub-summary by City (Trailing)
Part 💠	Trailing Grand Summary
🔬 🖻	Footer
<u>♀</u> , 88, ₹ ,	Title Footer

<u>Adding Parts to a Layout</u>

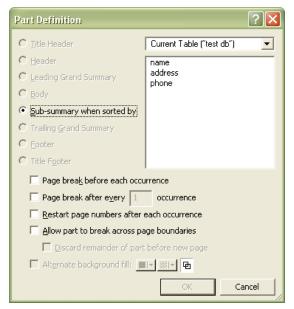
♦

1. Drag the Part Tool from the Status Panel to the position in the layout where you want to add the

part.	Part
	Falt

2. When you release the mouse button, the following dialog box will appear. The part options that are available depend on where in your layout you have indicated you are adding a part. For example, you can not add a Header after the Body.

Note: The part definition dialog box allows you to select various options regarding pagination. It is always available by double clicking on the label of the part you wish to modify.



<u>Removing Parts from a Layout</u>

- 1. Click one time on the label of the part you want to delete.
- 2. Press the Delete key on your keyboard.

3. If the part you are deleting is not empty, FileMaker will ask you for confirmation that you wish to delete the part. You may either delete or cancel at that point.

Changing the Size of Layout Parts

To change the size of a layout part, place your pointer on the line across the bottom of the part. Drag the line up or down the layout to make the part above it either smaller or larger. A part can not be made too small for the objects it contains.

Creating a Report Using the Report Wizard

- 1. Go to the Layout Mode
- 2. Select "New Layout/Report" from the Layouts menu.

lew Layout/Report		?		
Create a Layout/	Report			
Show records from:	Student Records			
Layout Name:	Hours by Classification			
	Include in layout menus			
Select a layout type				
Standard form Columnar list/repor Table view Labels Vertical labels Envelope Blank layout	t			
Sets up a simple columnar report or a complex report with grouped data and totals or subtotals. Shows records in rows and fields in columns.				
< Back Next > Cancel Help				

3. Give the layout a name and select "Columnar list/report" from the layout type list and click Next.

New Layout/Report	? 🛛
 Choose Report Layout Columnar List/Report Sets up a simple columnar report. The fields you specify appear left to right across the body of the layout, with field labels as column headings. If there are many fields, they will extend beyond the right page margin. Constrain to page width Report with grouped data Sets up a complex report in an extended columnar layout. Grouping records lets you summarize your data by any field, such as region or month. Select either or both of the checkboxes if you want to total group data. Include Subtotals Include Grand Totals 	
< Back Next > C	ancel Help

4. Select "Reports with grouped data" and check the "Include Subtotals" and "Include Grand Totals" checkboxes. Click Next.

	w Layout/Report Specify Fields Specify the fields you want on your k to appear on your layout. Available fields	ayou	ut. Make sure the	e fields are in the order you want them
	Current Table ("Student Records")	Y]	Layout fields
	Last Name Address 1 Address 2 City State Zip Local Phone Home Phone Date of Admission Number of hours completed Email address Tuition rate per hour Hours taken this semester		Clear Move All Clear All	 Classification Last Name First Name Hours taken this semester
_		< E	Back Ne	xt > Cancel Help

5. Select the fields you want to appear in your report. Click Next.

Ne	w Layout/Report	?
	Organize Records by Ca Grouping records lets you su selection order determines th	tegory mmarize your data by any field, such as region or month. Your e hierarchy of the categories in the report.
	Report fields Classification Last Name First Name Hours taken this semester	Move Clear All
-		< Back Next > Cancel Help

6. Select the field(s) you want to group your report by. Click Next.

New Layout/Report Sort Records Your report will be sorted first by any categories you may already have chosen. Specify any additional fields you wish to add to the sort order.				
Report fields Classification Last Name First Name Hours taken this semester	Sort order A Classification Move Clear All			
. I ● Ascending order I. ● Descending order I. ● Custom order based on value list Reorder based on summary field Specify				
	(Back Next > Cancel Help			

7. Choose your sort order. The first item sorted must be the field you chose to group by. Others can be added. Click Next.

New Layout/Report		? 🛛		
Specify Subtotals Select (or create) summary fields for each field you want to summarize. You can display subtotals above and/or below the groups of summarized records. After you make each set of choices, click Add Subtotal. You can add more than one subtotal.				
Summary field	Category to summarize by	Subtotal placement		
Specify "Total Hours"	Classification 🛛 🔽	Below record group 🛛 🔽		
Add Subtotal Remove Subtotal Subtotals Student Records::Total H Student Records::Classifi Below record group				
	< Back Next >	Cancel Help		

8. Choose the field you want for your subtotal by clicking the "Specify" button. Click the "Add Subtotal" button, then click Next.

New Layout/Report	?×
Specify Grand Totals Select (or create) summary fields to calculate grar totals at the beginning and/or end of your report.	
Grand Total. You can add more than one grand to	otal.
Summary field Specify "Total Hours"	Grand total placement End of report
Grand totals	Add Grand Total Remove Grand Total
Student Records::Total Hours	End of report
< Back	Next > Cancel Help

9. Choose the field you want for your Grand Total by clicking on the "Specify" button. Click the "Add Grand Total" button. Click Next.

New Layout/Report			?🛛
Select a Theme			
Themes affect the appearance of your onscreen or printed report. Select a theme to change background color, or text size, color, or style.			
Layout themes			
Default 🔨		Lineder	
Standard		Header	
Aqua screen			
Aqua print Blue and Gold Screen		Field Label Field Text	
Blue and Gold Print		riold fox	
Brick Screen			
Brick Print -			
Citrus Screen			
Citrus Print Fern Green Screen			
Fern Green Print		Footer	
High contrast black screen			
High contrast black print			
High contrast pumpkin screen 🛛 🗸 🗸			
< Back		Next > Cancel He	elp 🛛

10. Choose a theme. "Standard" will give you a blank white screen. Click Next.

New Layout/Report		? 🛛
Header and Footer Inform	ation	
You can show the page numbe header or footer areas of you	er, current date, a logo, the layou r report.	ut name, or custom text in the
Header		
Select the information you	would like to appear at the top o	f every page.
None 💊	None 🗸	None 🔽
Top left	Top center	Top right
Footer		
Select the information you	would like to appear at the botto	om of every page.
None	None 🗸	None
Bottom left	Bottom center	Bottom right
	<back next=""></back>	Cancel Help

11. Make any adjustments to the Header and Footer and click Next.

New Layout/Report	? 🛛
Rew Layour Heport Create a Script for this Report Image: Stript for this Report </th <th>Creating a script will make it easier to run your report in the future. The script includes the following script steps: go to the newly created layout, sort records (if specified), and pause in Preview mode. Do not create a script Create a script Script name: Layout #6 To run this report in the future, find the set of records you want to appear in your report, then select this script from the Scripts menu. To view or edit the script, select ScriptMaker from the Scripts menu.</th>	Creating a script will make it easier to run your report in the future. The script includes the following script steps: go to the newly created layout, sort records (if specified), and pause in Preview mode. Do not create a script Create a script Script name: Layout #6 To run this report in the future, find the set of records you want to appear in your report, then select this script from the Scripts menu. To view or edit the script, select ScriptMaker from the Scripts menu.
[< Back Next > Cancel Help

- 12. Decide whether or not you want a script created and click Next.
- 13. Click Finish.

<u>Understanding File Formats</u>

Every application saves files in a particular file format. If you are exchanging data with another application, check the documentation that came with that program to determine whether the file formats it supports work with FileMaker Pro.

Below is a sampling of some of the file formats that FileMaker understands:

Use this format:	То:
Comma-Separated Text (.csv or .txt extension)	Import from and export to applications such as Excel. This format is also called Comma-Separated Values (csv).
Excel (.xls extension)	Import data from Microsoft Excel.
FileMaker Pro (.fp3, .fp5, .fp7 extension)	Import from and export to FileMaker Pro 4.0 through 7.0
Tab-Separated Text (.tab or .txt extension)	Import from and export to most applications. If you aren't sure which format to use, try this one first.

Importing Data From Another File

You can import data into an existing FileMaker Pro file or into a new file. The file you are importing from must be in a format FileMaker Pro understands. FileMaker Pro imports data in the order it appears in the file you are importing from.

You can import data from any field type into any compatible field except calculation, summary, and global fields. You can import container fields if you are importing from another FileMaker Pro file.

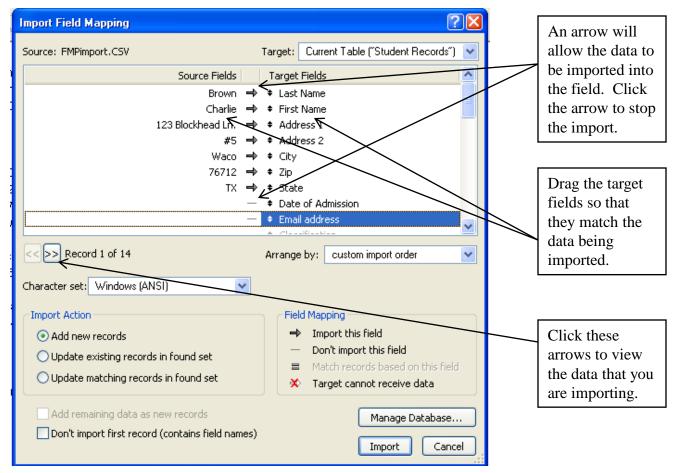
To import data into a new FileMaker file:

- 1. In the other application (the one you are bringing data into FileMaker Pro from), save the data you want to import in a format (file type) supported by FileMaker Pro.
- 2. In FileMaker, choose Open from the File menu.
- 3. In the dialog box, for **Files of type**, specify the type of file and then select the file you want to import.
- 4. Click **Open**.
- 5. In the dialog box, type a name for the new file, select a location, and then click **Save**.
- FileMaker creates a text field called fn for each field in the imported data (where n is 1, 2, 3, and so on, until all fields are named. If you are importing from a format that contains the field names, FileMaker uses those names instead of the f1, f2... placeholder field names.

To import data into an existing FileMaker file:

Tip: It is a good idea to make a backup copy of the file you are importing into before you start.

- 1. If you are importing records from a FileMaker Pro file, open that file and create a found set with the records you want to import. FileMaker imports only the records in the found set in the order they are sorted. You don't need to export the records or create a new FileMaker file with just those records.
- 2. Open the FileMaker file you want to import records into. If you are replacing records in the file, create a found set with the records you want to replace. Sort the records in the same order as records in the file you want to import
- 3. In the Browse mode, choose Import Records from the File menu, and then choose File from the sub-menu.
- 4. In the dialog box, for **Files of type**, choose a file type to narrow the choices, or choose **All Files** to see all the files you can import from the current folder.
- 5. Select the name of the file to import, and then click **Open**.
- 6. If you are importing a Microsoft Excel file and it contains more than one worksheet, FileMaker displays the Select Worksheet dialog box. Select the worksheet that you want to import and click **OK**.
- 7. In the Import Field Mapping dialog box, match the fields with the data you are importing. Other options available at this time are as follows:



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Carefully check each arrow and field name to be sure the correct data moves into the correct field.

8. Select an option to add or replace records:

•Click **Add new records** to add the imported data to the end of the file you are importing into.

•Click **Replace data in current found set** to replace the existing data in the file you are importing into. If there is more data to be imported that there are records in the found set, the additional data is not imported.

9. Click Import.

The records you import become the found set. After importing, check the data in the found set and update lookups if needed.

Import Field Mapping	? 🛛
Source: export.csv	Target: Current Table ("Wedding Info") 🛛 🗸
Source Fields	Target Fields
John	➡ + First Name
Adams	🔿 🕈 Last Name
58 Elm Court	⇒ + Address 1
	➡ ≠ Address 2
Silsby	
NC	➡ ≠ State
56987	⇒ ≠ Zip
219-985-6547	
Yes	-
<<>>> Record 1 of 30	Arrange by: last order
Character set: Windows (ANSI)	2
Import Action	Field Mapping
Add new records	➡ Import this field
Oupdate existing records in found set	 Don't import this field
	Match records based on this field
 Update matching records in found set 	🗙 🛛 Target cannot receive data
Add remaining data as new records	Manage Database Import Cancel

Example of the Import Field Mapping dialog box.

Exporting Data in FileMaker

To export data from FileMaker, click the File menu and select "Export Records...".

File	Edit	View	Insert	Format	Reco
Ľ	<u>N</u> ew D	atabas	e		
2	Open.			Ctrl+	-0
	Open l	Re <u>m</u> ote	с	trl+Shift+	-0
	Open Recen <u>t</u>				
	⊆lose			Ctrl+	W
	<u>D</u> efine				×
	Eile Op	tions			
	Change Pass <u>w</u> ord				
	Print <u>S</u>	etup			
8	<u>P</u> rint	•		Ctrl+	+P
	Import	Recor	ds		•
	Export	Recor	ds		
	Save/9	5ehซ์ <u>R</u> e	ecords A	s	•
	Send Mail				
	Save a Copy As				
	Reco <u>v</u>	er			
	E <u>x</u> it			Ctrl+	-Q

You will be asked to name this exported file. At this point, you can also select where the exported records will be stored, i.e. the desktop, My Documents, etc. Another item to consider is how the data will be stored. Recommended file formats are FileMaker (fp7), Comma-Separated (csv), Tab-Separated (tab), or Excel files (xls).

Export Records	to File	? 🛛	Г	
Save in:	📋 My Documents 🖌 🗧	▼ 		1. Where to store the file.
My Recent Documents Desktop My Documents My Computer My Network Places		My Webs norton PGP SnagIt Catalog Synafitec Opdater Updater5 Save Cancel	2.	Type the name of the file here. 3. Choose the file format 4. Click Save.
		Daga 12	2	

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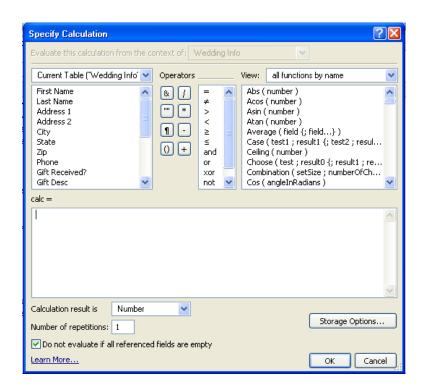
Your choice of file formats largely depends on your data. Comma-separated format would be fine as long as your data doesn't contain commas. If your data contains commas, you might want to consider using tab-separated. Once these selections are made, click the Save button.

Next, select the fields you wish to export by double-clicking the list on the left side of the window. You can select all or some of the fields. Once you have the desired fields selected, click the Export button.

Specify Field Order for Export				
Select and move the fields to be exported. If you want to group data, choose the 'Group by' fields before moving the other fields.				
Current Table ("Student Records")				
First Name Last Name Address 1 Address 2	^		(Unsorted)	
City State Zip			Field export order	
Local Phone Home Phone		Move		
Date of Admission Number of hours completed		Move All		
Email address Tuition rate per hour Hours taken this semester Member of Student Org Date of birth	~	Clear All		
Options				
Output file character set: Windows (ANSI)				
Apply current layout's data formatting to exported data Export Cancel				

Calculation Fields

- 1. To create a Calculation field, click on the File menu, select Manage and then select Database.
- 2. In the Manage Database dialog box, for Field Name, type a name for the field. Keep in mind the restrictions on using special characters.
- 3. For Type, select Calculation.
- 4. Click Create.
- 5. In the Specify Calculation Dialog box, use the pop-up menus, lists of fields and functions, and buttons to build a formula or type the formula directly into the formula box. In the lists at the top of the dialog box, you can double-click field names, operators, and functions, or click text operators from the palette to have FileMaker copy them into the formula box. To list field names from a related fie, choose the relationship from the pop-up menu. To list the functions by category, choose the category from the View pop-up menu.
- 6. Select from the following calculation options:
- 7. Click OK.
- 8. Continue defining fields or click **OK**.



FileMaker Pro – Advanced Reporting and Calculations

Exercises

- 1. Make sure you are in the Layout Mode.
- Create a New Layout select Blank. 2.
- Add Layout Parts to your new layout. 3.
- Resize your Layout Parts. 4.
- Delete some Layout Parts. 5.
- Add fields to your layout using the field Tool. 6.
- Check yourself in Preview Mode. 7.

Using the Report Wizard:

- Go to Layout Mode. 1.
- Select New Layout/Report from Layouts menu. 2.
- Give the layout a name and select Columnar list/report from the layout type menu and 3. click Next.
- 4. Select "Report with grouped data" and check the "Include Subtotals" and Include Grand Totals" checkboxes. Click Next.
- Select the fields you want to appear in your report. Click Next. 5.
- Select the field you want to group your report by. Click Next. 6.
- 7. Choose your sort order. The first item sorted must be the field you chose to group by. Others can be added. Click Next.
- Choose the field you want for your subtotal. Click the Add Subtotal button. Click Next. 8.
- Choose the field you want for your grand total. Click the Add Grand Total button. Click 9. Next.
- 10. Choose a theme. Standard will give you a blank white page.
- 11. Make any adjustments you want to the Header and Footer and click Next.
- Decide whether or not you want a script created and click Next. 12.
- 13. Click Finish.

The layout and/or totals may need "tweaking" to get the desired result.

Simple Calculations Field name	Field type	<u>Calculation</u>
Full Name	Text	FirstName & " " & LastName
Tuition Cost	Number	Hours taken this semester * Tuition rate per hour

FileMaker Pro – Advanced Reporting and Calculations More Practice...

Additional Calculations:

To format a phone number (entered in ten digits) -

If (Length(Local Phone) = 10, "("&Left(Local Phone,3)&") "&Middle(Local Phone,4,3) & "-" & Right(Local Phone,4), Local Phone)

To format a social security number (entered in nine digits) -

If (Length(ssn) = 9, Left(ssn,3)&"-"&Middle(ssn,4,2)&"-"&Right(ssn,4), ssn)

Classification Calculation –

Case (Number of hours completed < 30; "Freshman"; Number of hours completed ≥ 30 and Number of hours completed ≤ 59 ; "Sophomore"; Number of hours completed ≥ 60 and Number of hours completed ≤ 89 ; "Junior"; Number of hours completed ≥ 90 ; "Senior")

Age Calculation –

Year (Get(CurrentDate)) - Year (Date of birth) - If (Get(CurrentDate) \geq Date (Month (Date of birth); Day (Date of birth); Year (Get(CurrentDate))); 1; 0) *Note:* For calculations that work from the system (computer) date, make sure you set the field to recalculate when needed – do not store the value. This is set on the Calculation screen – click on the Storage Options button.

Restrictions Calculation –

Case (Age ≤ 17 ; "May not drive BU vehicle"; Age ≥ 18 and Age ≤ 20 ; "No more than 2 passengers"; Age ≥ 21 ; "No Restrictions")

Test age: 21 or older – no restrictions 18 – 20 – no more than 2 passengers 17 and under – may not drive BU vehicle

Add Conditional Formatting to the Restrictions field

From: GUIDELINES FOR DRIVING ON BEHALF OF BAYLOR UNIVERSITY

"Be at least twenty-one years old.

Exception: A driver who is at least eighteen years old and meets all other requirements of this section may operate a University vehicle in the course of their assigned duties on their home campus and in McLennan County but shall not carry more than (the driver plus) two passengers at any time. "