FileMaker Pro 9.0

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Advanced
Calculations
and
Reporting

Advanced Reporting

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.
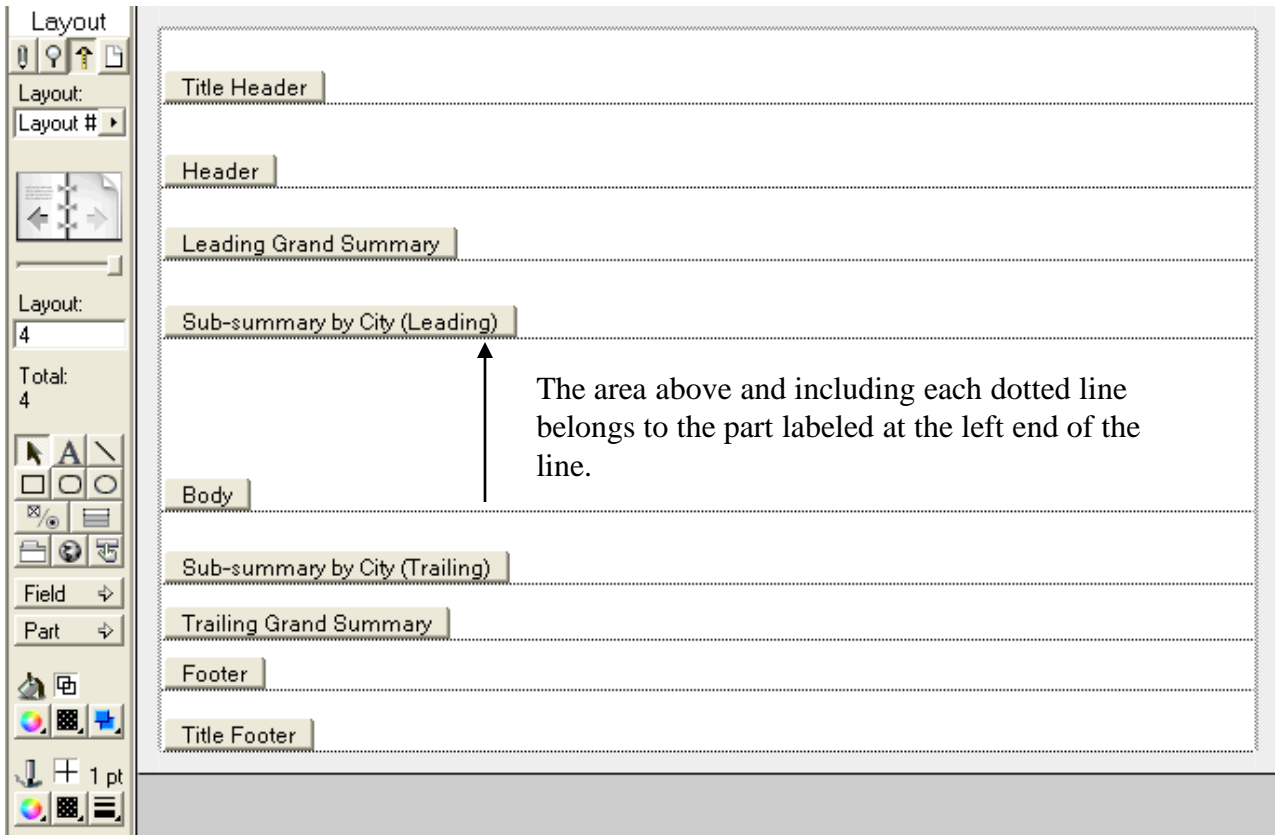
Layout Parts

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 Summary	One time at the end of the report.	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.
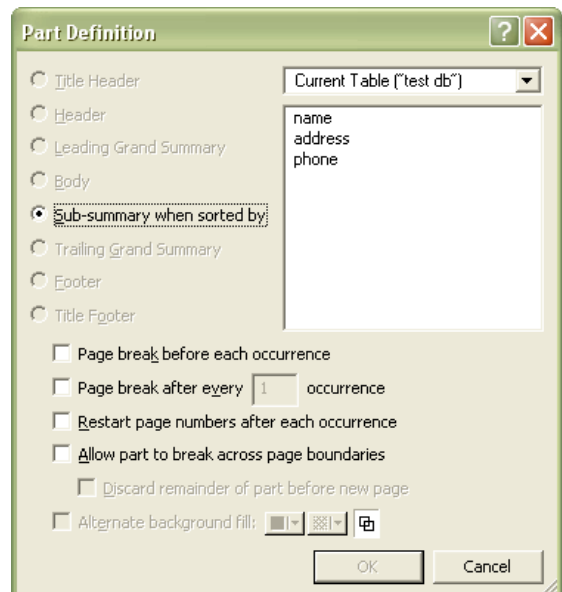

The area above and including each dotted line belongs to the part labeled at the left end of the line.

Adding Parts to a Layout

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

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.

Removing Parts from a Layout

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.
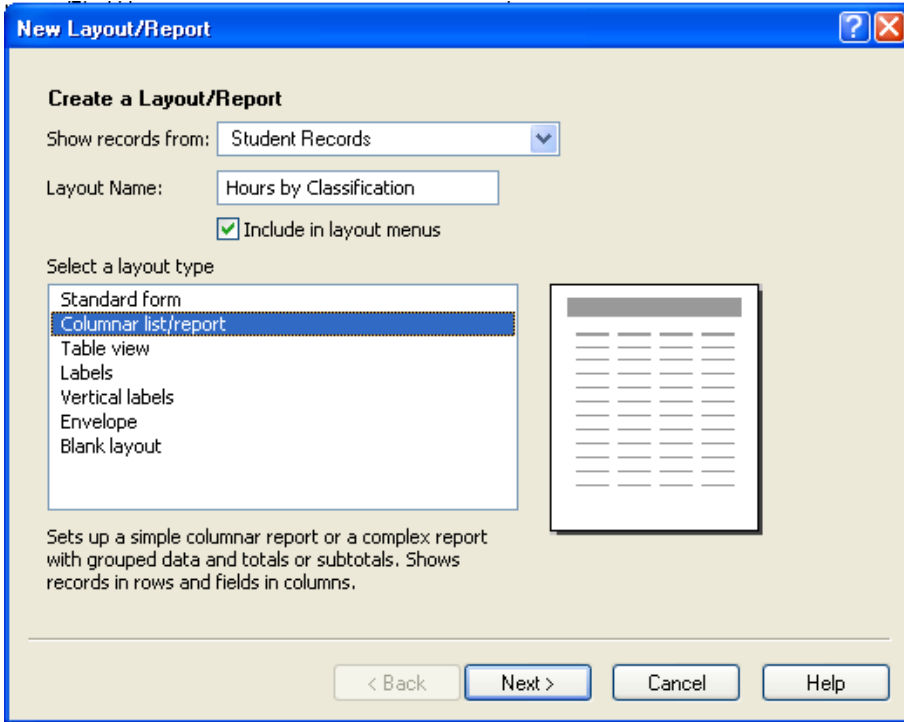
3. Give the layout a name and select "Columnar list/report" from the layout type list and click Next.
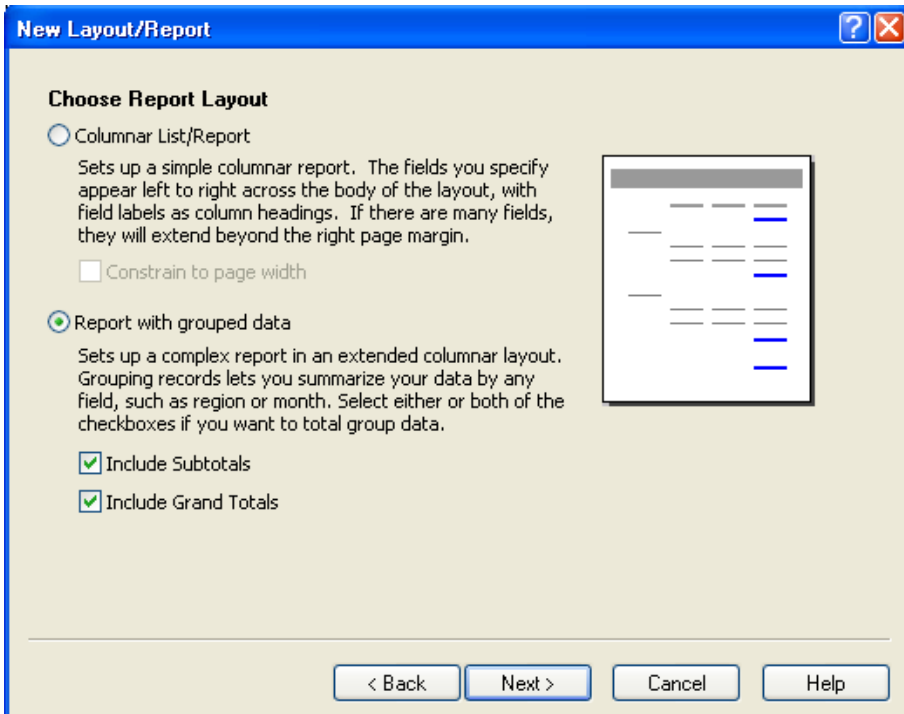
4. Select "Reports with grouped data" and check the "Include Subtotals" and "Include Grand Totals" checkboxes. Click Next.
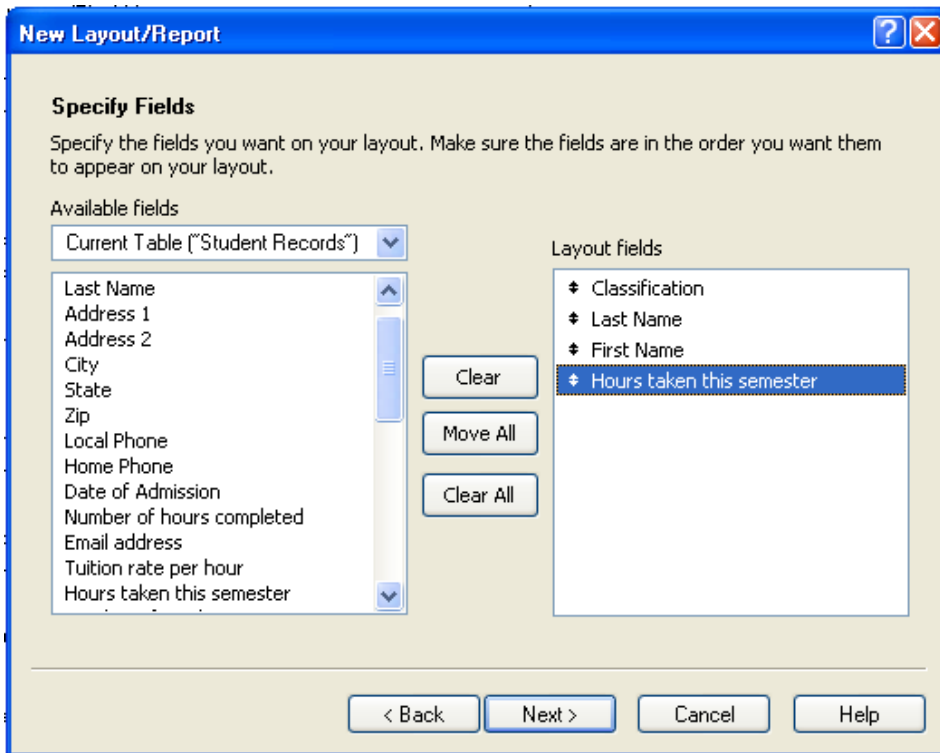
5. Select the fields you want to appear in your report. Click Next.
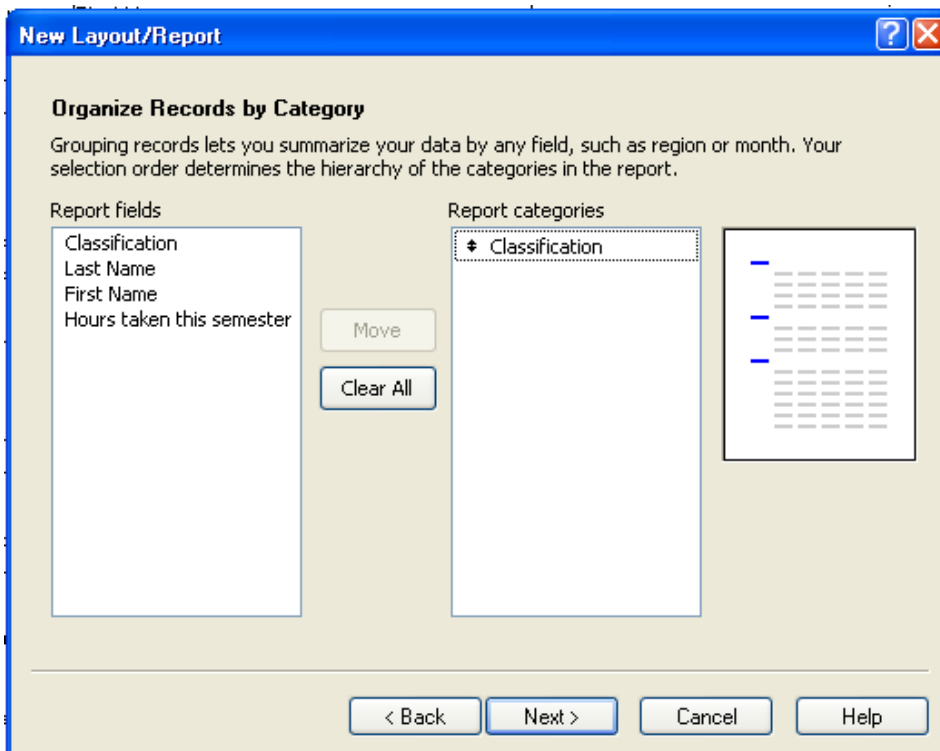
6. Select the field(s) you want to group your report by. Click Next.
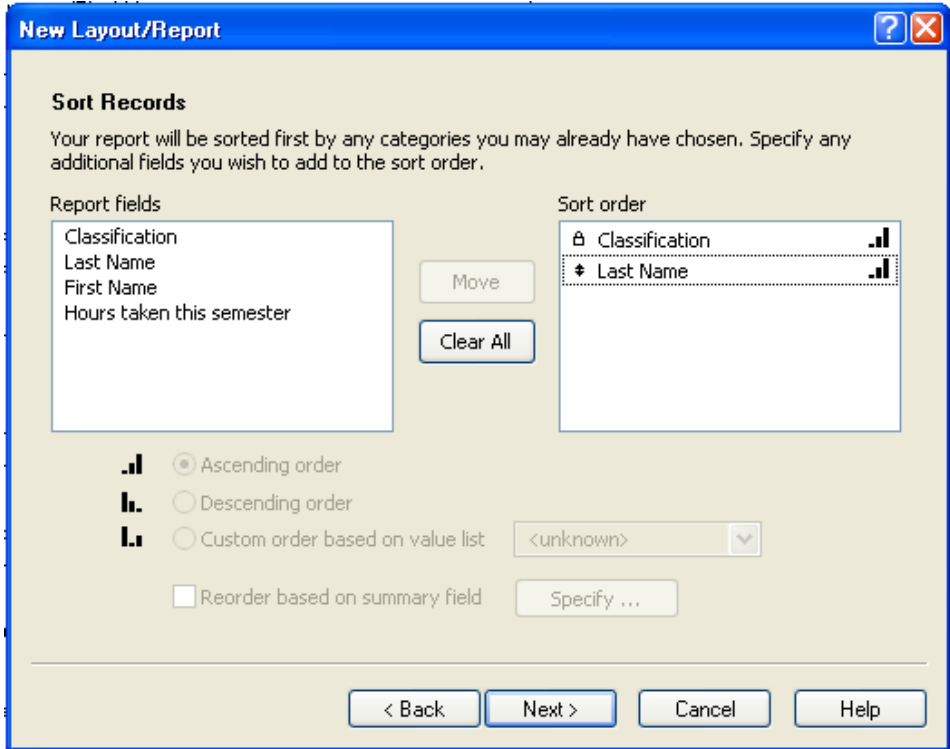
7. Choose your sort order. The first item sorted must be the field you chose to group by. Others can be added. Click Next.
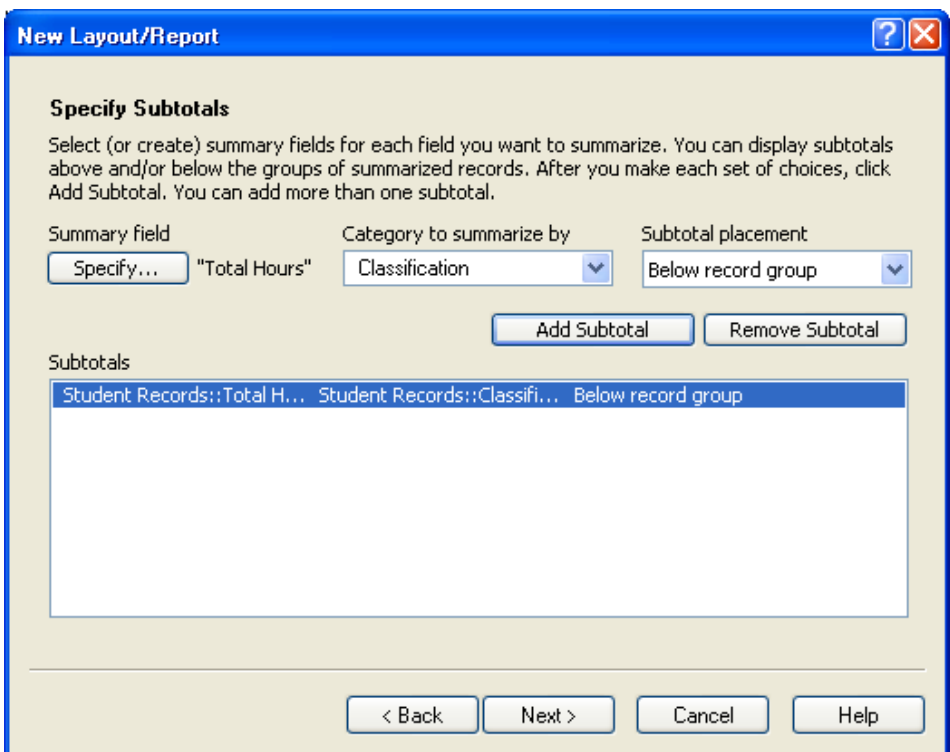
8. Choose the field you want for your subtotal by clicking the "Specify" button. Click the "Add Subtotal" button, then click Next.
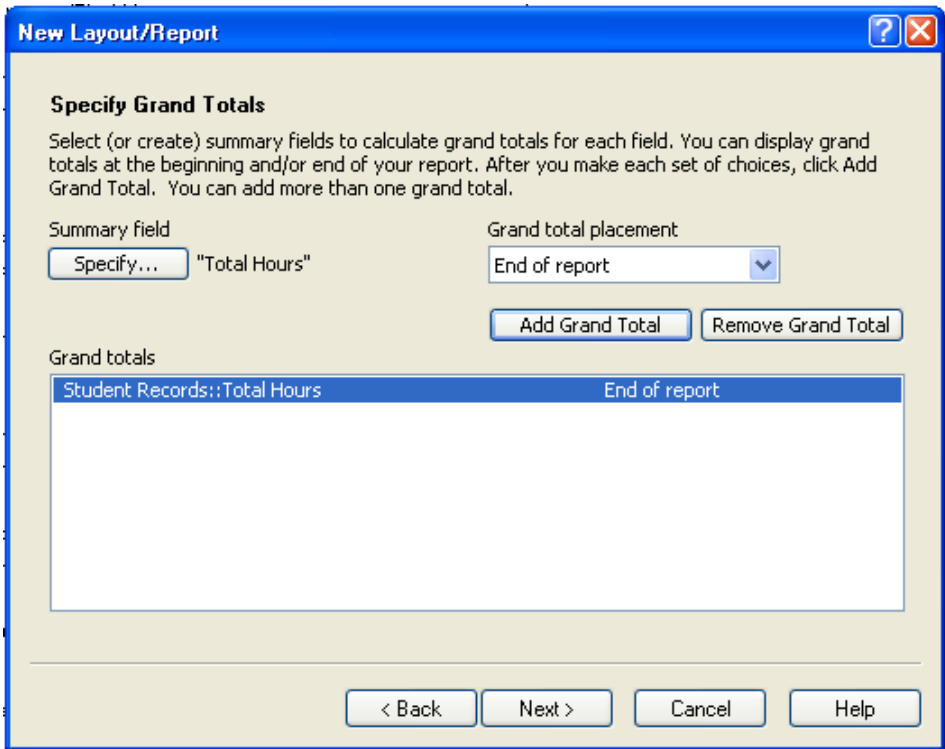
9. Choose the field you want for your Grand Total by clicking on the "Specify" button. Click the "Add Grand Total" button. Click Next.
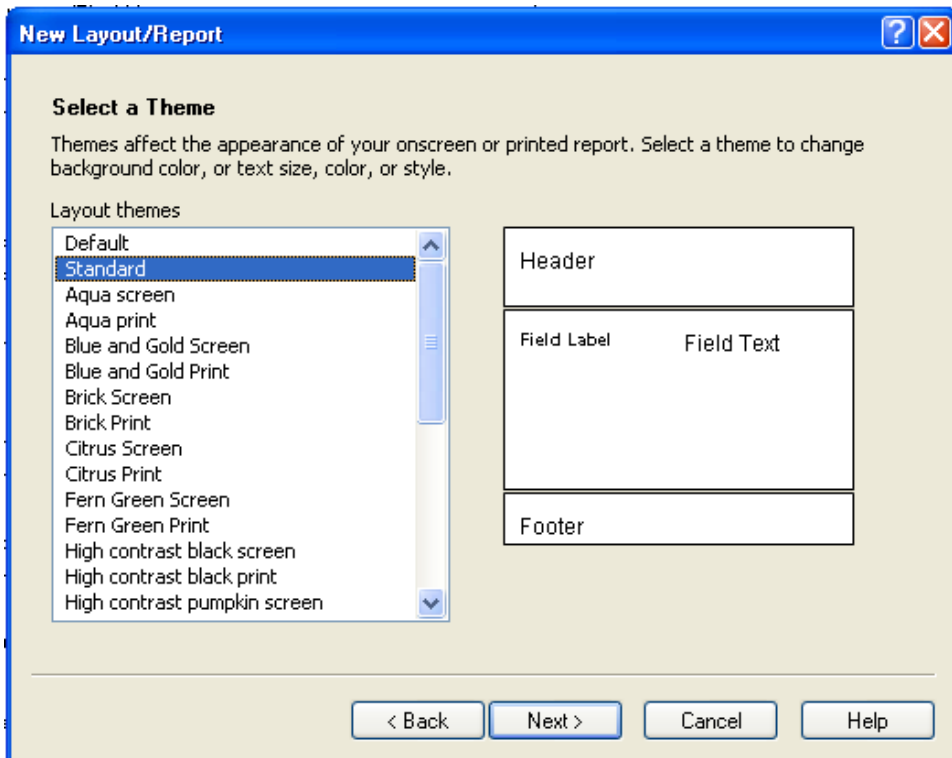
10. Choose a theme. "Standard" will give you a blank white screen. Click Next.

Header and Footer Information

You can show the page number, current date, a logo, the layout name, or custom text in the header or footer areas of your report.

Header

Select the information you would like to appear at the top of every page.

None	None	None
Top left	Top center	Top right

Footer

Select the information you would like to appear at the bottom of every page.

None	None	None
Bottom left	Bottom center	Bottom right

[< Back] [Next >] [Cancel] [Help]

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

Create a Script for this Report

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.
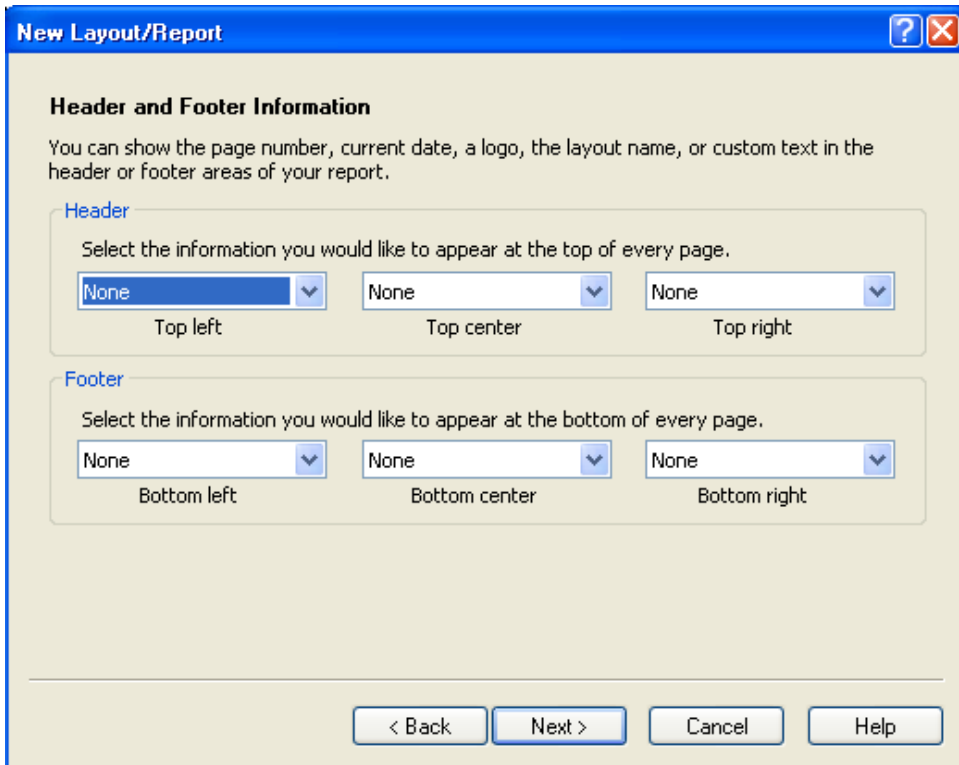
⦿ Do not create a script

◯ 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.

Understanding File Formats

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:	To:
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:
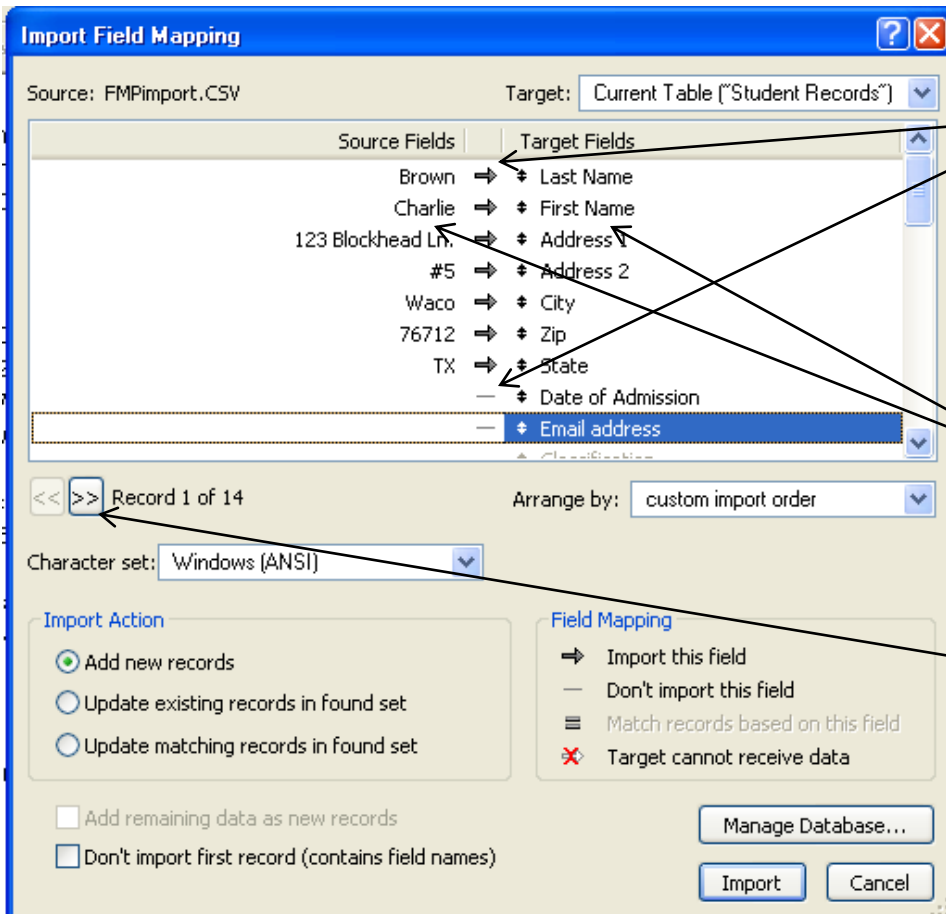
An arrow will allow the data to be imported into the field. Click the arrow to stop the import.

Drag the target fields so that they match the data being imported.

Click these arrows to view the data that you are importing.

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.
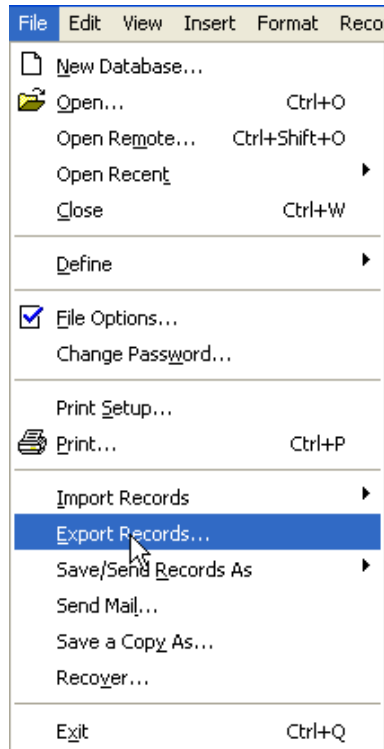9. Click Import.

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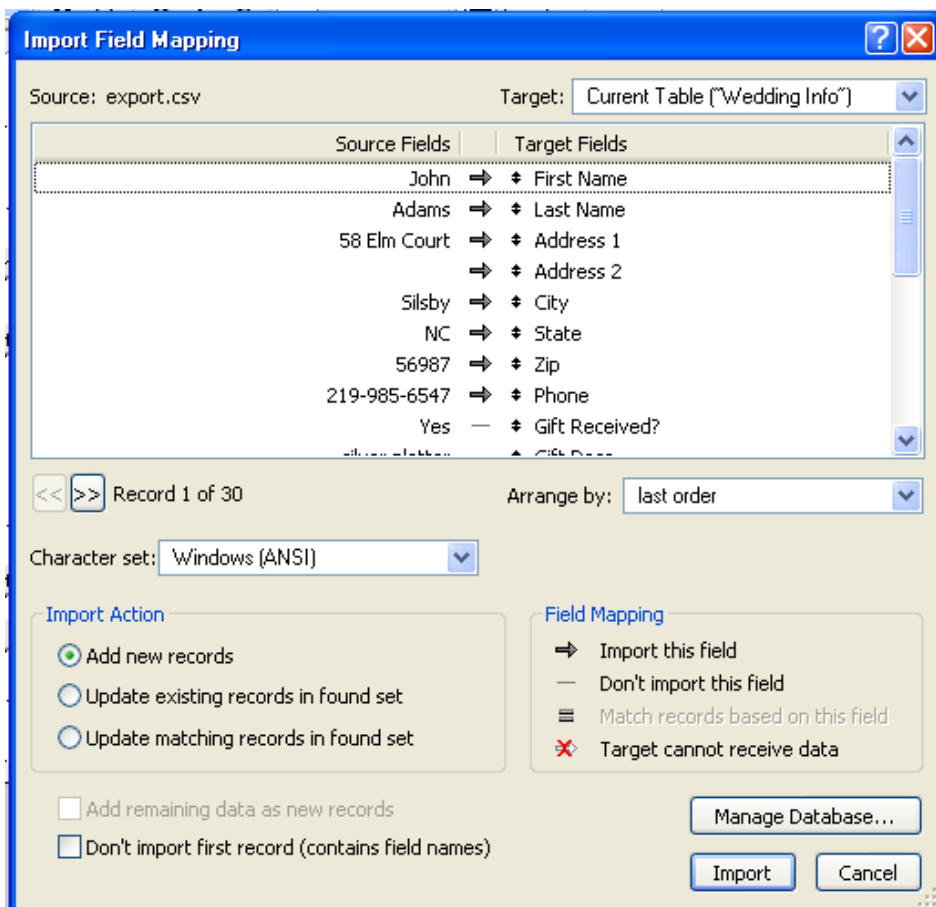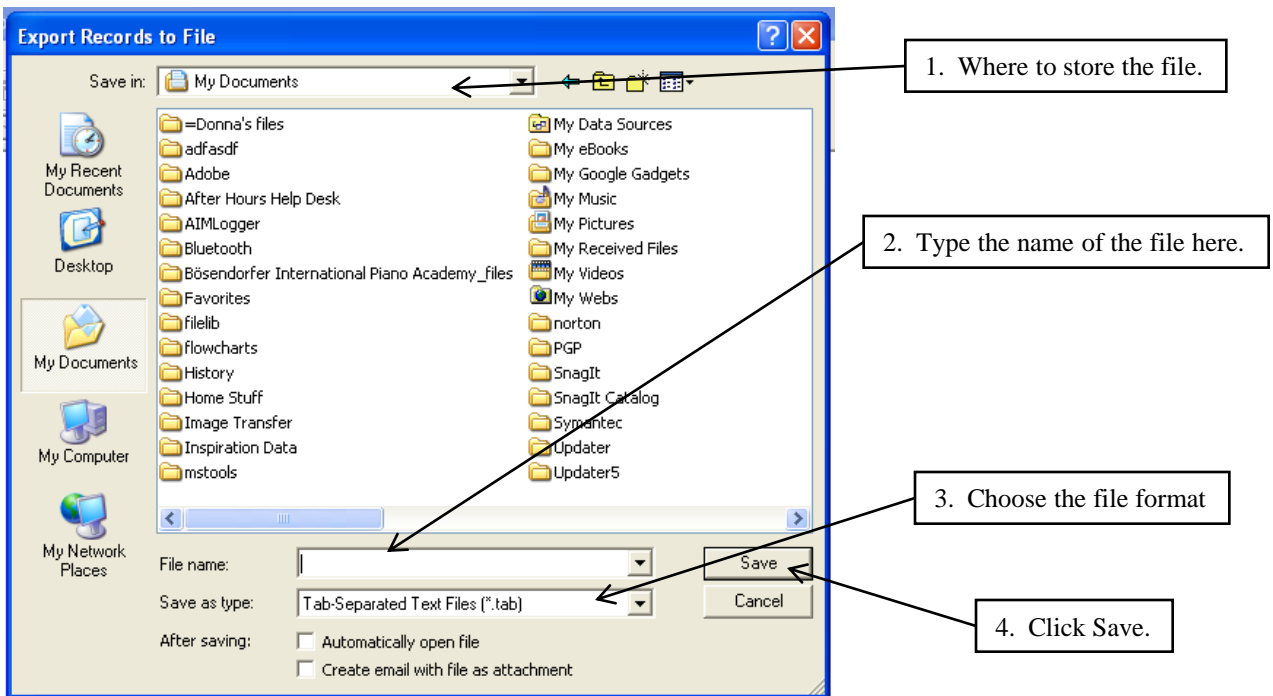

Example of the Import Field Mapping dialog box.

Exporting Data in FileMaker

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

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).

1. Where to store the file.

2. Type the name of the file here.

3. Choose the file format

4. Click Save.

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.
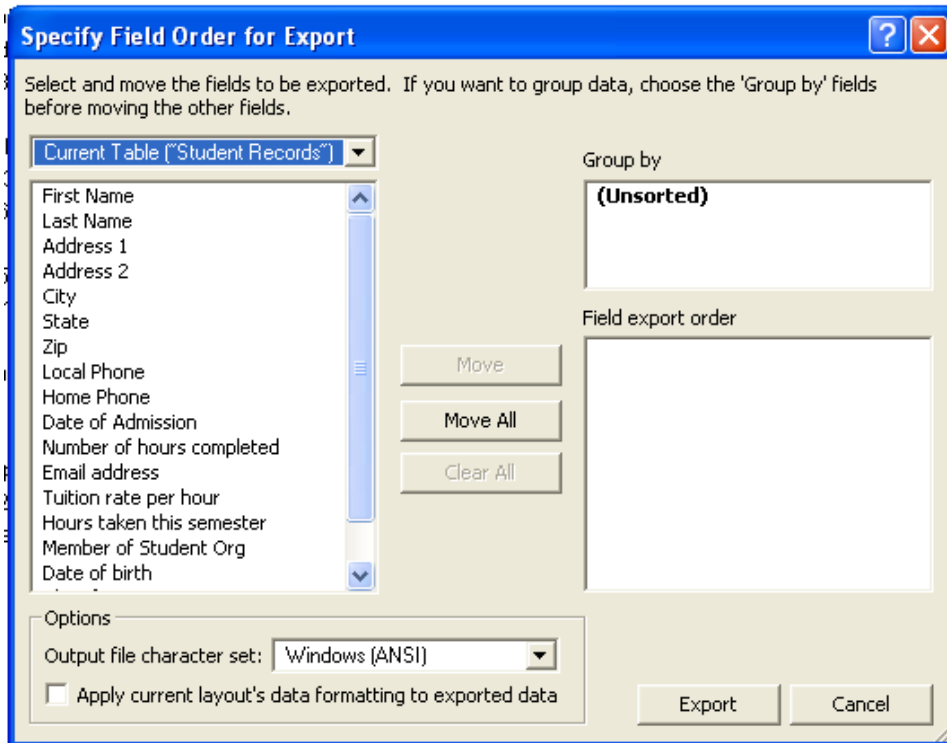
Calculation Fields

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**.

Exercises

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

Using the Report Wizard:

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

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

Simple Calculations

Field name	Field type	Calculation
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 $\geq$ 30
and Number of hours completed $\leq$ 59 ; "Sophomore"; Number of hours completed $\geq$ 60
and Number of hours completed $\leq$ 89; "Junior"; Number of hours completed $\geq$ 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 $\leq$ 17 ;"May not drive BU vehicle"; Age $\geq$ 18 and Age $\leq$ 20 ; "No more than 2
passengers"; Age $\geq$ 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.* "