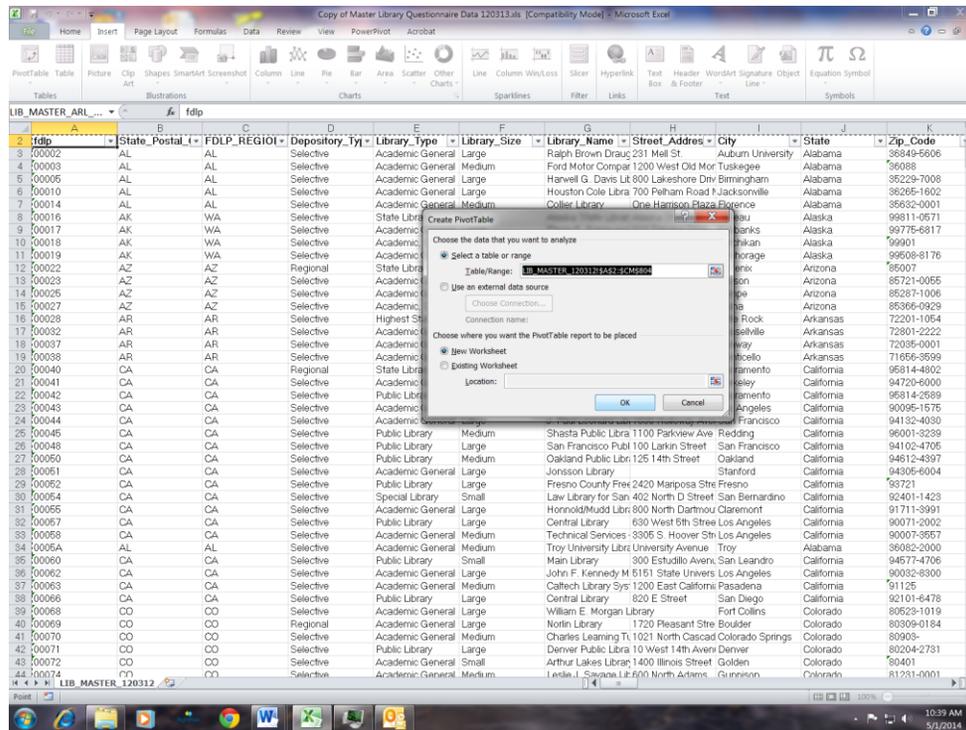


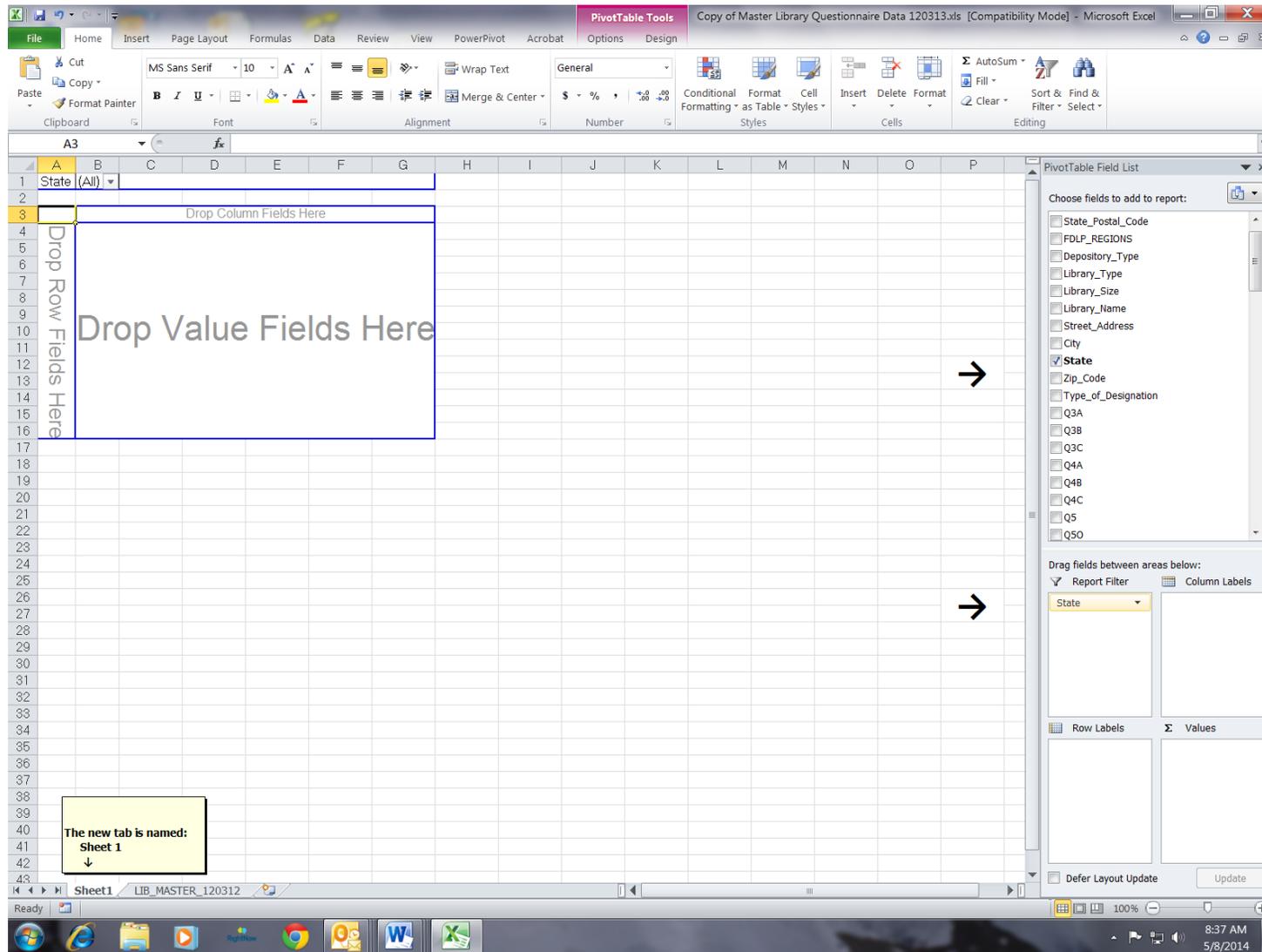
CREATING EXCEL PIVOT TABLES AND PIVOT CHARTS FOR LIBRARY QUESTIONNAIRE RESULTS

An Excel Pivot Table is an interactive table that summarizes large amounts of data. It allows the user to view and manipulate data in a variety of ways. A Pivot Chart is the graphical representation of a Pivot Table.

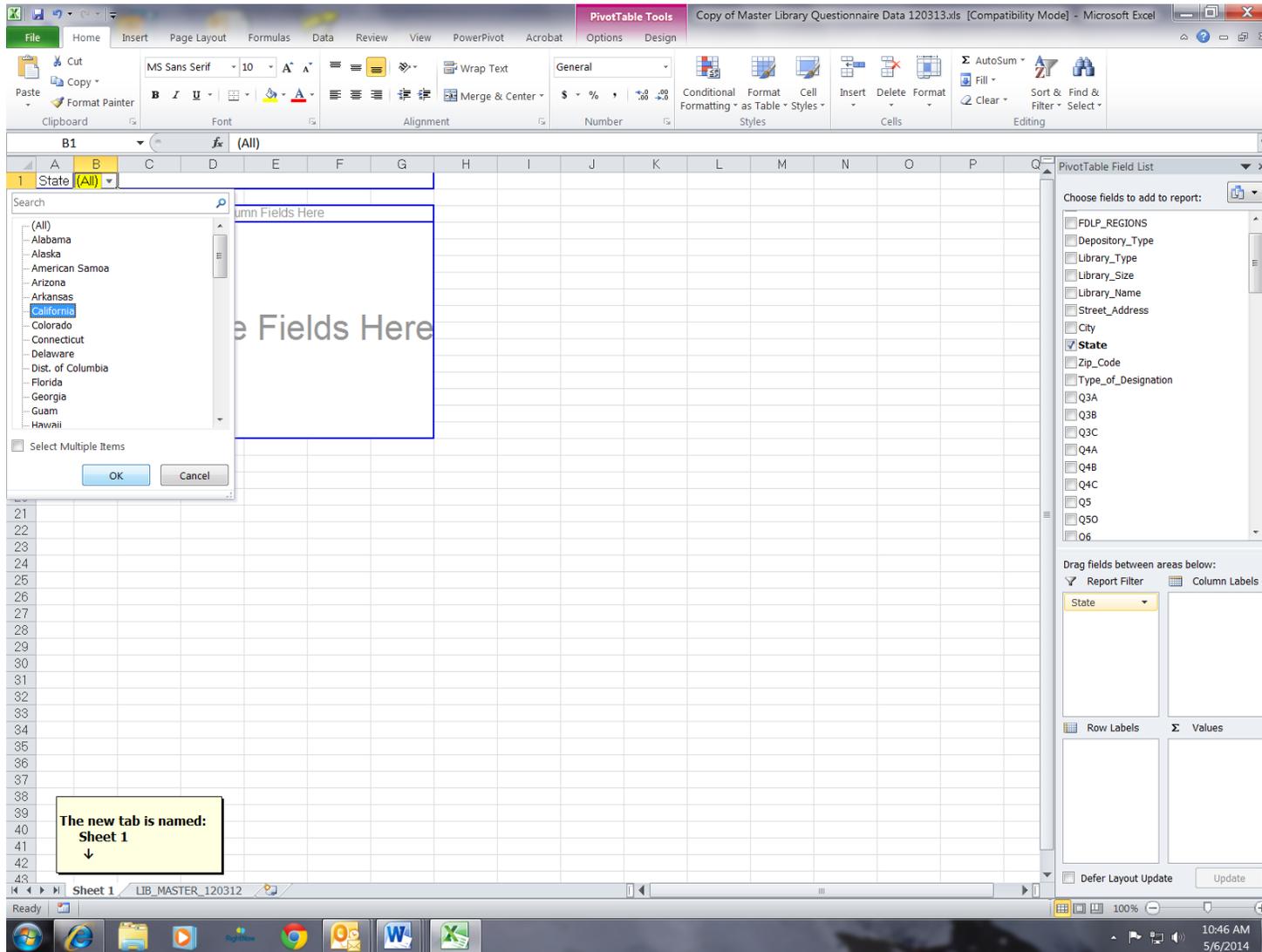
1. To create a Pivot Table for the Library Questionnaire results, begin by downloading and saving a copy of the Library Forecast Study Questionnaire Data Excel file to your computer. This file can be found on the FDLP Desktop at <http://www.fdlp.gov/file-repository/about-the-fdlp/gpo-projects/fdlp-state-forecast/2492-library-forecast-study-questionnaire-data/file>.
2. On the ribbon *Insert* tab, select Pivot Table. The “Create Pivot Table” box will open. To include all the data in the table, make sure the Table/Range selection is A2 through CM804. Do not include row 1 in the table, since it includes only the survey questions. To create a table based on a subset of the data, then adjust the Table/Range accordingly. *Choose where you want the Pivot Table report to be placed* by selecting the “New Worksheet” button. Click OK.



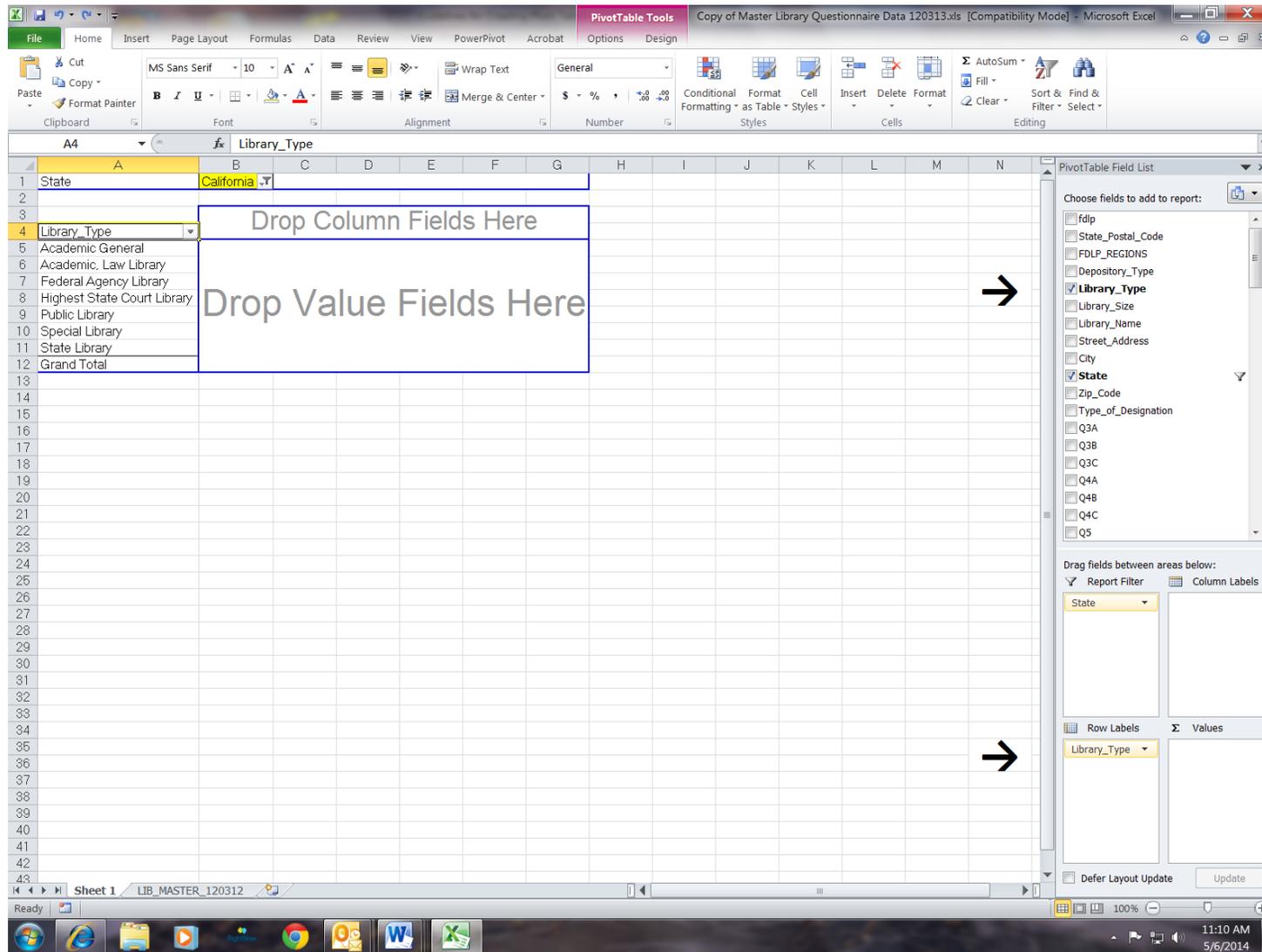
3. A new worksheet named Sheet 1 will open. This worksheet contains a Pivot Table template and the “Pivot Table Field List.” To view questionnaire results for a particular state:
- Select the field “State” from the “Pivot Table Field List” and drag it into the “Report Filter” box.



- b. The field “State” will appear in cell A1 along with a filter. Click the filter drop down arrow next to the word (All) in cell B2 (highlighted in yellow in the figure below) and select the state whose data you want to view in the table. In the figure below, California was selected. For viewing multiple states, check – “Select Multiple Items.” Click OK.



4. Determine the manner in which you want to group the data and select the appropriate fields. For instance, to view the data by Library Type, select the field “Library Type” from the “Pivot Table Field List” by checking the box adjacent to it or by clicking the name and dragging it into the “Row Labels” box. All the library types for the state selected will be listed in column A and the field, “Library Type,” will be listed in the “Row Labels” box.



- To view the results of a particular question, click and drag the question number from the “Pivot Table Field List” into the “Column Labels” box. In the figure below, “Q3A” was placed in the “Column Labels” box resulting in all the response *choices* to Question 3, part A, being listed as *column labels* in the table. {Question 3A on the Library Forecast Questionnaire asked libraries: *Have changes in funding affected “staffing” of your parent library or institution over the last five years (2007-2011)?*} The response choices were: “No Change,” “Yes, decreased,” “Yes, increased,” and “Yes, remained the same.”

The screenshot displays the Microsoft Excel interface with a PivotTable and the PivotTable Field List task pane. The PivotTable is structured as follows:

Library_Type	No change	Yes, decreased	Yes, increased	Yes, remained the same	Grand Total
Academic General					
Academic, Law Library					
Federal Agency Library					
Highest State Court Library					
Public Library					
Special Library					
State Library					
Grand Total					

The PivotTable Field List task pane on the right shows the following configuration:

- Choose fields to add to report:**
 - Depository_Type
 - Library_Type
 - Library_Size
 - Library_Name
 - Street_Address
 - City
 - State
 - Zip_Code
 - Type_of_Designation
 - Q3A
 - Q3B
 - Q3C
 - Q4A
 - Q4B
 - Q4C
 - Q5
 - Q50
 - Q6
 - Q60
- Drag fields between areas below:**
 - Report Filter:** State
 - Column Labels:** Q3A
 - Row Labels:** Library_Type
 - Σ Values:** (Empty)

A large text box with the text "Drop Value Fields Here" is overlaid on the PivotTable area. An arrow points from the "Q3A" field in the "Column Labels" area of the task pane towards the PivotTable.

- To view the frequency of responses to each response choice, click and drag the question number from the “Pivot Table Field List” into the “Values” box.

The screenshot shows an Excel spreadsheet with a PivotTable. The PivotTable is structured as follows:

Count of Q3A	Q3A				
Library_Type	No change	Yes, decreased	Yes, increased	Yes, remained the same	Grand Total
Academic General	3	23	1		27
Academic, Law Library	5	4	1	2	12
Federal Agency Library		1			1
Highest State Court Library			1		1
Public Library		14		1	15
Special Library	1		1		3
State Library		1			1
Grand Total	9	43	4	4	60

The PivotTable Field List on the right shows the following configuration:

- Report Filter:** State
- Column Labels:** Q3A
- Row Labels:** Library_Type
- Values:** Count of Q3A

An arrow points from the 'Q3A' field in the 'Values' area of the PivotTable Field List to the 'Count of Q3A' field in the 'Values' area, indicating the action of dragging the field to the values box.

- a. To change the name “Count of Q3A” (shown in cell A3 and the “Values” box), click on the drop down arrow in the “Values” box and select “Values Field Settings.”

The screenshot shows the Microsoft Excel interface with a PivotTable and the PivotTable Field List task pane. The PivotTable is titled "Count of Q3A" and is located in the range A3:F12. The PivotTable Field List task pane is open on the right side of the screen, and the "Value Field Settings..." option is highlighted in the context menu for the "Count of Q3A" field. A black arrow points to the "Value Field Settings..." option in the task pane.

Library_Type	No change	Yes, decreased	Yes, increased	Yes, remained the same	Grand Total
Academic General	3	23	1		27
Academic, Law Library	5	4	1	2	12
Federal Agency Library		1			1
Highest State Court Library			1		1
Public Library		14		1	15
Special Library	1		1		3
State Library		1			1
Grand Total	9	43	4	4	60

- b. When the “Value Field Settings” box opens, insert a “Custom Name” and click OK. In the figure below, the Custom Name of “Frequency” was entered.

The screenshot displays the Microsoft Excel interface with a PivotTable titled "Count of Q3A". The PivotTable is structured as follows:

Library_Type	No change	Yes, decreased	Yes, increased	Yes, remained the same	Grand Total
Academic General	3		23		
Academic, Law Library	5		4		
Federal Agency Library			1		
Highest State Court Library				14	
Public Library				1	
Special Library	1				
State Library				1	
Grand Total	9		43		27

The "Value Field Settings" dialog box is open, showing the following configuration:

- Source Name: Q3A
- Custom Name: Frequency
- Summarize Values By: Show Values As
- Summarize value field by: Count

The PivotTable Field List on the right shows the following setup:

- Report Filter: State
- Column Labels: Q3A
- Row Labels: Library_Type
- Values: Count of Q3A

c. The name, “Count of Q3A,” which was located in cell A3 and in the “Values” box has been changed to “Frequency.”

The screenshot displays the Microsoft Excel interface with a PivotTable and the PivotTable Field List task pane. The PivotTable is titled "Frequency" and is located in the range A3:F12. The data is summarized as follows:

Library_Type	No change	Yes, decreased	Yes, increased	Yes, remained the same	Grand Total
Academic General	3	23	1	1	27
Academic, Law Library	5	4	1	2	12
Federal Agency Library		1			1
Highest State Court Library			1		1
Public Library		14		1	15
Special Library	1		1		3
State Library		1			1
Grand Total	9	43	4	4	60

The PivotTable Field List task pane on the right shows the following configuration:

- Report Filter:** State
- Column Labels:** Q3A
- Row Labels:** Library_Type
- Values:** Frequency

An arrow points to the "Frequency" field in the Values area of the task pane.

7. A percentage can also be included in the table by clicking and dragging the question number into the “Values” box a second time.

The screenshot shows an Excel PivotTable with the following data:

Library_Type	Frequency	Count of Q3A	Yes, decreased	Count of Q3A	Yes, increased	Count of Q3A
Academic General	3	3	23	23	1	
Academic, Law Library	5	5	4	4	1	
Federal Agency Library			1	1		
Highest State Court Library					1	
Public Library			14	14		
Special Library	1	1			1	
State Library			1	1		
Grand Total	9	9	43	43	4	

The PivotTable Field List on the right shows:

- Report Filter:** State
- Column Labels:** Q3A
- Row Labels:** Library_Type
- Values:** Frequency, Count of Q3A

A black arrow points from the 'Q3A' field in the Values section to the 'Q3A' field in the Column Labels section, indicating the action of dragging the field to add a percentage.

- a. The Pivot Table will provide a *count* of responses as the default. To obtain percentages, click on the drop down arrow of the field just moved into the “Values” box and select “Value Field Settings.”

The screenshot displays the Microsoft Excel interface with a PivotTable and the PivotTable Field List task pane. The PivotTable is structured as follows:

Library_Type	Frequency	Count of Q3A	Total						
Academic General	3	3	23	23	1	1			
Academic, Law Library	5	5	4	4	1	1	2	2	2
Federal Agency Library			1	1					
Highest State Court Library					1	1			
Public Library			14	14			1	1	1
Special Library	1	1			1	1	1	1	1
State Library			1	1					
Grand Total	9	9	43	43	4	4	4	4	4

The PivotTable Field List task pane on the right shows the following configuration:

- Choose fields to add to report:
 - Library_type
 - Library_Size
 - Library_Name
 - Street_Address
 - City
 - State
 - Zip_Code
 - Type_of_Designation
 - Q3A
 - Q3B
 - Q3C
 - Q3A
 - Q4A
 - Q4B
 - Q4C
 - Q5
 - Q50
 - Q6
 - Q60
 - Q7
- Drag field: State
- Move to: Values
- Value Field Settings: Count of Q3A

A black arrow points to the dropdown arrow next to 'Count of Q3A' in the Values area of the task pane.

- b. When the “Value Field Settings” box opens, insert a “Custom Name,” such as “Percent.” Click on the “Show Values As” tab and then click on the drop down arrow. Select “% of Grand Total,” “% of Column Total,” or “% of Row Total,” whichever is appropriate.

The screenshot shows a Microsoft Excel spreadsheet with a PivotTable. The PivotTable is based on the 'Library_Type' field and summarizes the 'Q3A' field. The PivotTable has the following data:

Library_Type	Frequency	Count of Q3A						
Academic General	3	3	23					
Academic, Law Library	5	5	4					
Federal Agency Library			1					
Highest State Court Library								
Public Library			14					
Special Library	1	1						
State Library			1					
Grand Total	9	9	43					

The 'Value Field Settings' dialog box is open, showing the 'Show Values As' tab. The 'Source Name' is 'Q3A' and the 'Custom Name' is 'Percent'. The 'Show values as' dropdown menu is open, showing options: 'No Calculation', '% of Grand Total', '% of Column Total', '% of Row Total', '% of', '% of Parent Row Total', and 'Library_Size'. The '% of Grand Total' option is selected.

The PivotTable Field List on the right shows the following fields:

- Report Filter: State
- Column Labels: Q3A
- Row Labels: Library_Type
- Values: Frequency, Count of Q3A

- c. To format the value as a percentage, click on the “Number Format” in the lower left corner of the “Value Field Settings” box. Select “Percentage” and the number of decimal places in the “Format Cells” box. Click OK and then OK again.

The screenshot displays the Microsoft Excel interface with a PivotTable and the 'Format Cells' dialog box open. The PivotTable is based on the 'Library_Type' field, with 'Frequency' and 'Count of Q3A' as value fields. The 'Format Cells' dialog is set to 'Number' and 'Percentage' format, with 1 decimal place. The 'PivotTable Field List' on the right shows the current PivotTable configuration.

Library_Type	Frequency	Count of Q3A	Frequency
Academic General	3	3	23
Academic, Law Library	5	5	4
Federal Agency Library			1
Highest State Court Library			
Public Library			14
Special Library	1	1	
State Library			1
Grand Total	9	9	43

- d. The name, "Count of Q3A," which was located in cells C5, E5, G5, and I5, and the in "Values" box have been replaced with the name "Percent." In addition, the name, "Total Count of Q3A" in cell K5 has been replaced with the name "Total Percent."

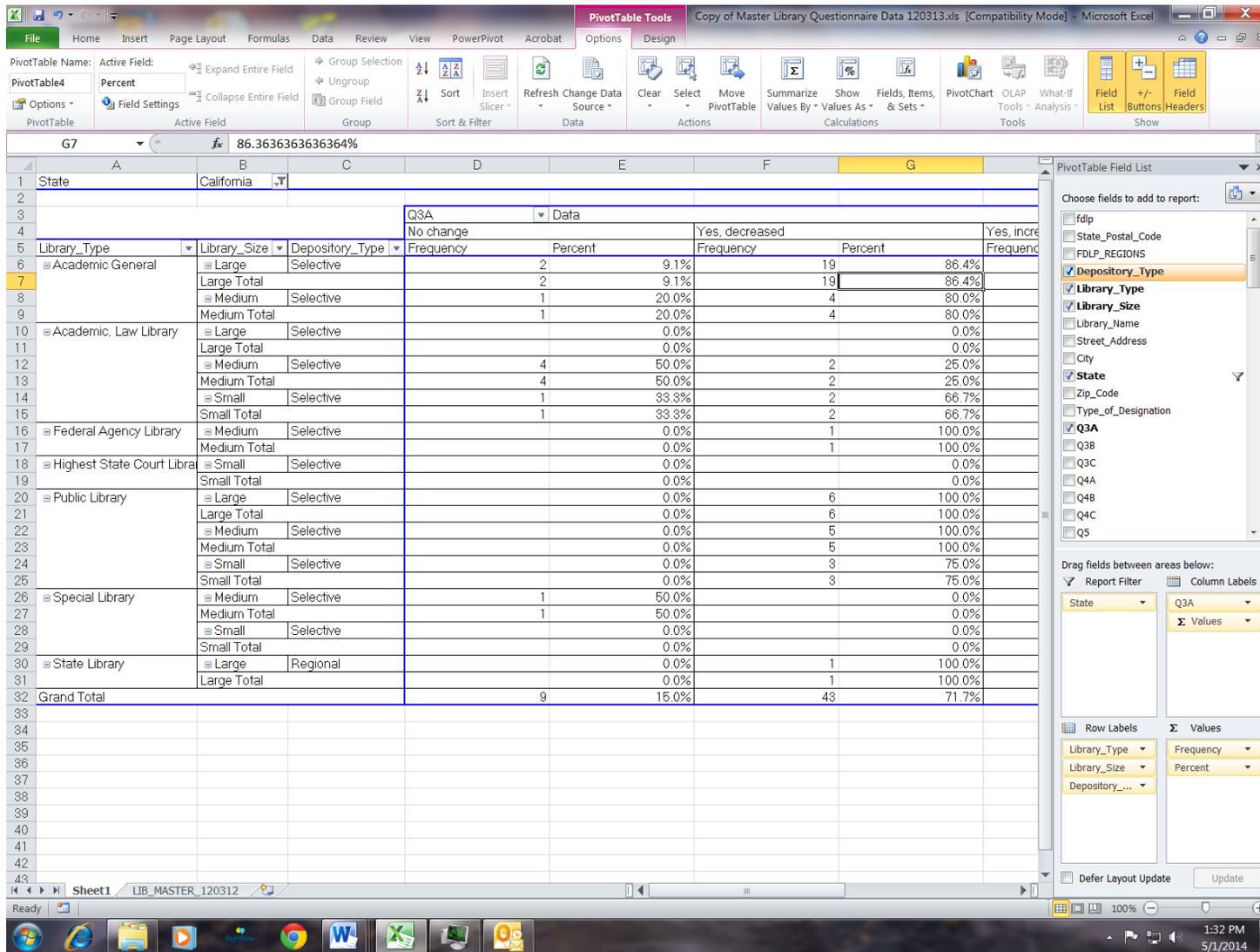
The screenshot shows an Excel PivotTable with the following data:

Library_Type	No change		Yes. decreased		Yes. increased		Yes. remained the same		Total Frequency	Total Percent
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent		
Academic General	3	11.1%	23	85.2%	1	3.7%		0.0%	27	100.0%
Academic, Law Library	5	41.7%	4	33.3%	1	8.3%	2	16.7%	12	100.0%
Federal Agency Library		0.0%	1	100.0%		0.0%		0.0%	1	100.0%
Highest State Court Library		0.0%		0.0%	1	100.0%		0.0%	1	100.0%
Public Library		0.0%	14	93.3%		0.0%	1	6.7%	15	100.0%
Special Library	1	33.3%		0.0%	1	33.3%	1	33.3%	3	100.0%
State Library		0.0%	1	100.0%		0.0%		0.0%	1	100.0%
Grand Total	9	15.0%	43	71.7%	4	6.7%	4	6.7%	60	100.0%

The PivotTable Field List on the right shows the following configuration:

- Report Filter: State
- Column Labels: Q3A
- Row Labels: Library_Type
- Values: Percent

8. Additional fields regarding the library’s description may be added by selecting the desired fields. The figure below displays the data by “Library Type,” “Library Size,” and “Depository Type.” The number of library descriptors may be changed simply by selecting and deselecting fields in the “Pivot Table Field List” resulting in the fields moving in or out of the “Row Labels” box.



a. To display “Totals” only in the Pivot Table, delete all fields in the “Row Labels” box by deselecting them in the “Pivot Table Field List.”

The screenshot shows an Excel spreadsheet with a PivotTable. The PivotTable is located in the range A4:K6. The data is as follows:

Q3A		Yes, decreased		Yes, increased		Yes, remained the same		Total Frequency	Total Percent
Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent		
9	15.0%	43	71.7%	4	6.7%	4	6.7%	60	100.0%

The PivotTable Field List on the right side of the screen shows the following configuration:

- Report Filter:** State
- Column Labels:** Q3A
- Values:** Frequency, Percent
- Row Labels:** (Empty)

A black arrow points to the Row Labels area in the PivotTable Field List.

9. To change the order of column fields, click the drop down arrow on the field to be moved in the “Row Labels” box and select “Move Up,” “Move Down,” “Move to Beginning,” or “Move to End.” Selecting “Move Up” or “Move Down” will move the field one place. To move the field multiple places, repeat this step until the desired column order is achieved. In the figure below, the field “Depository Type” is being moved to the beginning.

The screenshot displays a PivotTable in Microsoft Excel. The PivotTable is structured with 'State' as the Row Label and 'Q3A' as the Column Labels. The data is summarized by 'Library Type' and 'Library Size'. The 'Depository Type' field is currently in the Column Labels area. A context menu is open over the 'Depository Type' field in the PivotTable Field List, showing options to move it to different positions. The 'Move to Beginning' option is selected.

State	Library Type	Library Size	Depository Type	Frequency	Percent	Yes, decreased	Frequency	Percent	Yes, increased	Frequency	Percent
California	Academic General	Large	Selective	2	9.1%	2	19	86.4%	0	0.0%	0.0%
		Large Total		2	9.1%	2	19	86.4%	0	0.0%	0.0%
		Medium	Selective	1	20.0%	1	4	80.0%	0	0.0%	0.0%
		Medium Total		1	20.0%	1	4	80.0%	0	0.0%	0.0%
	Academic General Total			3	11.1%	3	23	85.2%	0	0.0%	0.0%
	Academic, Law Library	Large	Selective	0	0.0%	0	0	0.0%	0	0.0%	0.0%
		Large Total		0	0.0%	0	0	0.0%	0	0.0%	0.0%
		Medium	Selective	4	50.0%	4	2	25.0%	0	0.0%	0.0%
		Medium Total		4	50.0%	4	2	25.0%	0	0.0%	0.0%
		Small	Selective	1	33.3%	1	2	66.7%	0	0.0%	0.0%
		Small Total		1	33.3%	1	2	66.7%	0	0.0%	0.0%
	Academic, Law Library Total			5	41.7%	5	4	33.3%	0	0.0%	0.0%
	Federal Agency Library	Medium	Selective	0	0.0%	0	1	100.0%	0	0.0%	0.0%
		Medium Total		0	0.0%	0	1	100.0%	0	0.0%	0.0%
	Federal Agency Library Total			0	0.0%	0	1	100.0%	0	0.0%	0.0%
	Highest State Court Library	Small	Selective	0	0.0%	0	0	0.0%	0	0.0%	0.0%
		Small Total		0	0.0%	0	0	0.0%	0	0.0%	0.0%
	Highest State Court Library Total			0	0.0%	0	0	0.0%	0	0.0%	0.0%
	Public Library	Large	Selective	0	0.0%	0	6	100.0%	0	0.0%	0.0%
		Large Total		0	0.0%	0	6	100.0%	0	0.0%	0.0%
		Medium	Selective	0	0.0%	0	5	100.0%	0	0.0%	0.0%
		Medium Total		0	0.0%	0	5	100.0%	0	0.0%	0.0%
		Small	Selective	0	0.0%	0	3	75.0%	0	0.0%	0.0%
		Small Total		0	0.0%	0	3	75.0%	0	0.0%	0.0%
	Public Library Total			0	0.0%	0	14	93.3%	0	0.0%	0.0%
	Special Library	Medium	Selective	1	50.0%	1	0	0.0%	0	0.0%	0.0%
		Medium Total		1	50.0%	1	0	0.0%	0	0.0%	0.0%
		Small	Selective	0	0.0%	0	0	0.0%	0	0.0%	0.0%
		Small Total		0	0.0%	0	0	0.0%	0	0.0%	0.0%
	Special Library Total			1	33.3%	1	0	0.0%	0	0.0%	0.0%
	State Library	Large	Regional	0	0.0%	0	1	100.0%	0	0.0%	0.0%
		Large Total		0	0.0%	0	1	100.0%	0	0.0%	0.0%
	State Library Total			0	0.0%	0	1	100.0%	0	0.0%	0.0%
	Grand Total			9	15.0%	9	43	71.7%	0	0.0%	0.0%

- a. When moving columns, the order of columns changes in the Pivot Table and the order of fields listed in the “Row Labels” box also changes.

The screenshot shows an Excel PivotTable with the following data:

State	California	Q3A Data							
		No change		Yes, decreased		Yes, increased		Yes, rer	
Depository_Type	Library_Type	Library_Size	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency
Regional	State Library	Large		0.0%	1	100.0%		0.0%	
Regional Total				0.0%	1	100.0%		0.0%	
Selective	Academic General	Large	2	9.1%	19	86.4%	1	4.5%	
		Medium	1	20.0%	4	80.0%		0.0%	
	Academic General Total			3	11.1%	23	85.2%	1	3.7%
	Academic, Law Library	Large			0.0%		0.0%		0.0%
		Medium	4	50.0%		2	25.0%	1	12.5%
		Small	1	33.3%		2	66.7%		0.0%
	Academic, Law Library Total			5	41.7%	4	33.3%	1	8.3%
	Federal Agency Library		Medium		0.0%	1	100.0%		0.0%
	Federal Agency Library Total				0.0%	1	100.0%		0.0%
	Highest State Court Library		Small		0.0%		0.0%	1	100.0%
Highest State Court Library Total				0.0%		0.0%	1	100.0%	
Public Library	Large			0.0%	6	100.0%		0.0%	
	Medium			0.0%	5	100.0%		0.0%	
	Small			0.0%	3	75.0%		0.0%	
Public Library Total				0.0%	14	93.3%		0.0%	
Special Library		Medium	1	50.0%		0.0%		0.0%	
Special Library Total		Small		0.0%		0.0%	1	100.0%	
Selective Total			9	15.3%	42	71.2%	4	6.8%	
Grand Total			9	15.0%	43	71.7%	4	6.7%	

The PivotTable Field List on the right shows the following configuration:

- Report Filter: State
- Column Labels: Q3A
- Row Labels: Depository_Type, Library_Type, Library_Size
- Values: Σ Values

A black arrow points from the PivotTable to the Field List, indicating the relationship between the two.

10. Subtotals for specific fields within groupings can be controlled by clicking on the drop down arrow of the field in the “Row Labels” box and selecting “Field Settings.” In the figure below, the subtotal will be changed for the field “Library Type.”

The screenshot displays an Excel PivotTable with the following data:

State	Library_Type	Library_Size	Q3A				
			Frequency	Percent	Frequency	Percent	
California	Regional	State Library	1	0.0%	1	100.0%	
		State Library Total	1	0.0%	1	100.0%	
	Regional Total	Academic General	Large	2	9.1%	19	86.4%
			Medium	1	20.0%	4	80.0%
		Academic General Total	3	11.1%	23	85.2%	
		Academic, Law Library	Large		0.0%		0.0%
			Medium	4	50.0%	2	25.0%
			Small	1	33.3%	2	66.7%
		Academic, Law Library Total	5	41.7%	4	33.3%	
		Federal Agency Library	Medium		0.0%	1	100.0%
		Federal Agency Library Total		0.0%	1	100.0%	
		Highest State Court Library	Small		0.0%		0.0%
	Highest State Court Library Total		0.0%		1	100.0%	
	Public Library	Large		0.0%	6	100.0%	
		Medium		0.0%	5	100.0%	
		Small		0.0%	3	75.0%	
	Public Library Total		0.0%	14	93.3%		
	Special Library	Medium	1	50.0%		0.0%	
	Special Library	Small		0.0%		0.0%	
	Special Library Total		1	33.3%		33.3%	
	Selective Total			9	15.3%	42	71.2%
	Grand Total			9	15.0%	43	71.7%

- a. Click on the desired “Subtotals” button (“Automatic” – the default, “None,” or “Custom”) and click OK. In the figure below, the choice “None” was selected thereby “turning off” the subtotals for the field “Library Type.”

The screenshot shows the Microsoft Excel interface with a PivotTable. The PivotTable is based on the 'Library Size' field. The PivotTable structure is as follows:

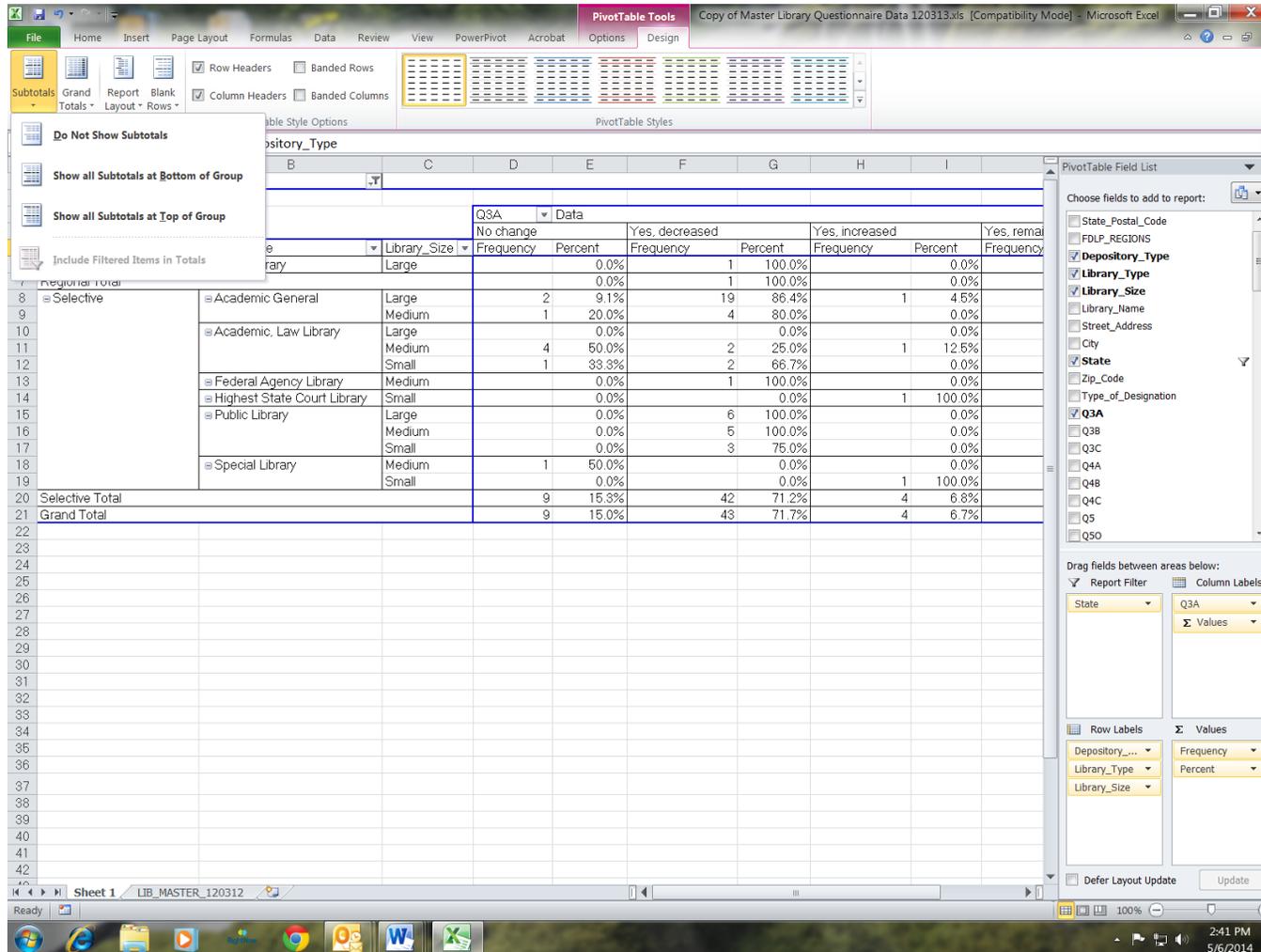
State	Library Type	Library Size	Frequency	Percent	Yes, refer
Regional					
Regional Total					
Academic General					
Academic General Total					
Academic, Law Library					
Academic, Law Library Total					
Federal Agency Library					
Federal Agency Library Total					
Highest State Court Library					
Highest State Court Library Total					
Public Library					
Public Library Total					
Special Library					
Special Library Total					
Selective					
Selective Total					
Grand Total					
Grand Total					

The Field Settings dialog box is open, showing the 'Subtotals & Filters' tab. The 'Subtotals' section has the following options:

- Automatic
- None
- Custom

The 'Custom' section is empty, indicating no functions are selected. The 'Filter' section has the checkbox 'Include new items in manual filter' checked.

11. The appearance of the Pivot Table can be modified by clicking on the *PivotTable Tools Design* tab and selecting the desired options available with each icon.
- a. On the *PivotTable Tools Design* tab, the placement of Subtotals within the table can be selected or Subtotals can be turned off. Click on the “Subtotals” drop down arrow and select the desired option. Changes to Subtotals on this tab will affect all fields within the table. To change Subtotals for specific fields only, refer to step 10 above.



- b. "Grand Totals" can be turned on or off for rows and/or columns. Click on the "Grand Totals" drop down arrow and select the desired option.

The screenshot shows the following data in the PivotTable:

Depository_Type	Library_Size	Q3A			
		Frequency	Percent	Frequency	Percent
Regional Total		9	15.3%	43	71.7%
Selective		9	15.3%	42	71.2%
Academic General	Large	2	9.1%	19	86.4%
Academic General	Medium	1	20.0%	4	80.0%
Academic, Law Library	Large	0	0.0%	0	0.0%
Academic, Law Library	Medium	4	50.0%	2	25.0%
Academic, Law Library	Small	1	33.3%	2	66.7%
Federal Agency Library	Medium	0	0.0%	1	100.0%
Highest State Court Library	Small	0	0.0%	0	0.0%
Public Library	Large	0	0.0%	6	100.0%
Public Library	Medium	0	0.0%	5	100.0%
Public Library	Small	0	0.0%	3	75.0%
Special Library	Medium	1	50.0%	0	0.0%
Special Library	Small	0	0.0%	0	0.0%
Grand Total		9	15.0%	43	71.7%

- c. The report format can be changed by clicking the “Report Layout” drop down arrow. The Pivot Table in the figure below is in *Tabular Form*.

The screenshot displays the Microsoft Excel interface with a PivotTable in Tabular Form. The PivotTable is filtered by State and shows data for Q3A, categorized by Library_Type and Library_Size. The 'Report Layout' dropdown menu is open, showing options like 'Show in Compact Form', 'Show in Outline Form', 'Show in Tabular Form', 'Repeat All Item Labels', and 'Do Not Repeat Item Labels'. The 'Show in Tabular Form' option is selected. The PivotTable Field List on the right shows the current configuration: State (Filter), Q3A (Column Labels), and Library_Type, Library_Size (Values).

State	Library_Type	Library_Size	Q3A	Frequency	Percent	Yes_decreased	Frequency	Percent
Regional	Academic, Law Library	Large	No change	1	0.0%	Yes_decreased	1	100.0%
		Medium	No change	1	0.0%	Yes_decreased	1	100.0%
		Small	No change	1	0.0%	Yes_decreased	1	100.0%
	Federal Agency Library	Large	No change	19	9.1%	Yes_decreased	19	86.4%
		Medium	No change	4	20.0%	Yes_decreased	4	80.0%
		Small	No change	2	33.3%	Yes_decreased	2	66.7%
	Highest State Court Library	Large	No change	1	0.0%	Yes_decreased	1	100.0%
		Medium	No change	4	50.0%	Yes_decreased	2	25.0%
		Small	No change	1	33.3%	Yes_decreased	2	66.7%
	Public Library	Large	No change	6	0.0%	Yes_decreased	6	100.0%
		Medium	No change	5	0.0%	Yes_decreased	5	100.0%
		Small	No change	3	0.0%	Yes_decreased	3	75.0%
	Special Library	Large	No change	1	50.0%	Yes_decreased	1	100.0%
		Medium	No change	1	0.0%	Yes_decreased	1	100.0%
		Small	No change	1	0.0%	Yes_decreased	1	100.0%
	Selective Total			9	15.3%		42	71.2%
	Grand Total			9	15.0%		43	71.7%

- d. In addition, visual style and color can be added to the Pivot Table by clicking on the drop down arrow in the “PivotTable Styles” section and selecting the desired style and color.

The screenshot shows the Microsoft Excel interface with a PivotTable and its associated task panes. The PivotTable is located in the range A5:B21 and is titled "Depository_Type". The PivotTable Fields task pane is open on the right, showing the following fields:

- State Postal Code
- FDP_REGIONS
- Depository_Type
- Library_Type
- Library_Size
- Library_Name
- Street_Address
- City
- State
- Zip_Code
- Type_of_Designation
- Q3A
- Q3B
- Q3C
- Q4A
- Q4B
- Q4C
- Q5
- Q50

The PivotTable Fields task pane is configured with the following settings:

- Report Filter: State
- Column Labels: Q3A
- Row Labels: Depository_Type, Library_Type, Library_Size
- Values: Frequency, Percent

The PivotTable Styles task pane is open, showing a grid of style options. The styles are categorized into Light, Medium, and Dark. The current style is "Light". The PivotTable data is as follows:

State	Library_Type	Library_Size	Frequency	Percent
California	State Library	Large	1	4.5%
California	State Library	Medium	1	4.5%
California	State Library	Small	1	4.5%
California	Academic General	Large	1	4.5%
California	Academic General	Medium	1	4.5%
California	Academic General	Small	1	4.5%
California	Academic Law Library	Large	1	4.5%
California	Academic Law Library	Medium	1	4.5%
California	Academic Law Library	Small	1	4.5%
California	Federal Agency Library	Large	1	4.5%
California	Federal Agency Library	Medium	1	4.5%
California	Federal Agency Library	Small	1	4.5%
California	Highest State Court Library	Large	1	4.5%
California	Highest State Court Library	Medium	1	4.5%
California	Highest State Court Library	Small	1	4.5%
California	Public Library	Large	1	4.5%
California	Public Library	Medium	1	4.5%
California	Public Library	Small	1	4.5%
California	Special Library	Large	1	4.5%
California	Special Library	Medium	1	4.5%
California	Special Library	Small	1	4.5%
California	Regional Total		4	18.2%
California	Selective		4	18.2%
California	Selective Total		4	18.2%
California	Grand Total		4	18.2%

12. Once the Pivot Table is completed, it is a good idea to rename the worksheet tab from “Sheet 1” to a more meaningful name. Renaming the tab allows easy identification of worksheets when additional worksheets are added. To rename the worksheet, double click on the tab, type the new name, and hit enter. In the figure below, the tab that contains the data for Q3A was renamed “Q3A.”

The screenshot displays the Microsoft Excel interface with a PivotTable titled "Q3A" showing data for "Data". The PivotTable is filtered by "State" and shows counts and percentages for various library types and sizes. The PivotTable Field List on the right shows the fields included in the report: State, Q3A, Q3B, Q3C, Q4A, Q4B, Q4C, and Q5. The PivotTable is structured as follows:

			No change		Yes, decreased		Yes, increased		Yes, remain
Depository_Type	Library_Type	Library_Size	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency
Regional	State Library	Large		0.0%	1	100.0%			0.0%
Regional Total				0.0%	1	100.0%			0.0%
Selective	Academic General	Large	2	9.1%	19	86.4%		1	4.5%
		Medium	1	20.0%	4	80.0%			0.0%
	Academic, Law Library	Large		0.0%		0.0%			0.0%
		Medium	4	50.0%	2	25.0%	1	12.5%	
		Small	1	33.3%	2	66.7%			0.0%
	Federal Agency Library	Medium		0.0%	1	100.0%			0.0%
	Highest State Court Library	Small		0.0%		0.0%	1	100.0%	
	Public Library	Large		0.0%	6	100.0%			0.0%
		Medium		0.0%	5	100.0%			0.0%
		Small		0.0%	3	75.0%			0.0%
Special Library	Medium	1	50.0%		0.0%			0.0%	
	Small		0.0%		0.0%	1	100.0%		
Selective Total		9	15.3%	42	71.2%	4	6.8%		
Grand Total		9	15.0%	43	71.7%	4	6.7%		

A yellow callout box in the bottom left corner of the worksheet area contains the text: "Worksheet tab was renamed to Q3A" with a downward arrow pointing to the "Q3A" worksheet tab at the bottom of the Excel window.

13. Pivot Tables include a *drill down* feature.

- a. To drill down to the specific data that comprise a specific number in the Pivot Table, double click its cell and all the data which comprise that number will download into a new worksheet. For instance, in the figure below, 19 Selective Large Academic General Libraries responded “Yes, decreased” to question 3A on the Library Forecast Questionnaire (*Have changes in funding affected “staffing” of your parent library or institution over the last five years (2007-2011)?*). To view the data regarding these libraries, double click on cell F8 which contains the value of 19.

The screenshot shows a PivotTable in Microsoft Excel. The PivotTable is structured as follows:

Depository_Type	Library_Type	Library_Size	Q3A					
			No change	Yes, decreased	Yes, increased	Yes, remain		
			Frequency	Percent	Frequency	Percent	Frequency	Percent
Regional Total	State Library	Large		0.0%	1	100.0%		0.0%
Regional Total	State Library	Medium	2	9.1%	1	100.0%		0.0%
Selective	Academic General	Large		0.0%	19	86.4%	1	4.5%
Selective	Academic General	Medium	1	20.0%				0.0%
Selective	Academic, Law Library	Large		0.0%				0.0%
Selective	Academic, Law Library	Medium	4	50.0%				12.5%
Selective	Academic, Law Library	Small	1	33.3%				0.0%
Selective	Federal Agency Library	Medium		0.0%	1	100.0%		0.0%
Selective	Highest State Court Library	Small		0.0%		0.0%	1	100.0%
Selective	Public Library	Large		0.0%	6	100.0%		0.0%
Selective	Public Library	Medium		0.0%	5	100.0%		0.0%
Selective	Public Library	Small		0.0%	3	75.0%		0.0%
Selective	Special Library	Medium	1	50.0%				0.0%
Selective	Special Library	Small		0.0%			1	100.0%
Selective Total			9	15.3%	42	71.2%	4	6.8%
Grand Total			9	15.0%	43	71.7%	4	6.7%

A tooltip is displayed over cell F8 (the value 19), showing the following details:

- Value: 19
- Row: Selective - Academic General - Large
- Column: Yes, decreased - Frequency

The PivotTable Field List on the right shows the following configuration:

- Report Filter: State
- Column Labels: Q3A, Values
- Row Labels: Depository_Type, Library_Type, Library_Size
- Values: Frequency, Percent

- b. The figure below shows that after double clicking on cell F8, the data that comprises the “19” respondents whose response was “Yes, decreased” to Library question 3A downloaded into a new worksheet. Scrolling to the right in the worksheet provides the responses to Q3A and all other questions for these 19 libraries.

	J	K	L	M	N	O	P	Q	R	S
1	State	Zip Code	Type of Designation	Q3A	Q3B	Q3C	Q4A	Q4B	Q4C	Q5
2	California	92093-0175	Senatorial	Yes, decreased	Yes, decreased	No change	Yes, decreasing	Yes, decreasing	Will not be affected	Yes (Please identify
3	California	92182-8050	Representative	Yes, decreased	Yes, decreased	Yes, increased	Yes, decreasing	Yes, decreasing	Yes, remaining the same	Yes (Please identify
4	California	92617-5900	Representative	Yes, decreased	Yes, decreased	Yes, decreased	Yes, decreasing	Yes, remaining the same	Will not be affected	Yes (Please identify
5	California	92834-4150	Representative	Yes, decreased	Yes, decreased	Yes, remained the same	Yes, decreasing	Yes, decreasing	Yes, remaining the same	Yes (Please identify
6	California	91330-8328	Representative	Yes, decreased	Yes, remained the same	Yes, decreased	Yes, decreasing	Yes, increasing	Yes, decreasing	Yes (Please identify
7	California	93407	Representative	Yes, decreased	Yes, decreased	Yes, decreased	Yes, decreasing	Yes, remaining the same	Will not be affected	Yes (Please identify
8	California	95064-1078	Representative	Yes, decreased	Yes, decreased	Yes, remained the same	Yes, decreasing	Yes, remaining the same	Yes, remaining the same	Yes (Please identify
9	California	95819-6039	Representative	Yes, decreased	Yes, decreased	No change	Yes, decreasing	Yes, decreasing	Will not be affected	Yes (Please identify
10	California	93106-9010	Representative	Yes, decreased	Yes, decreased	Yes, remained the same	Yes, remaining the same	Yes, remaining the same	Yes, remaining the same	Yes (Please identify
11	California	93740-8014	Representative	Yes, decreased	Yes, decreased	No change	Yes, decreasing	Yes, decreasing	Yes, remaining the same	Yes (Please identify
12	California	95192-0028	Representative	Yes, decreased	Yes, remained the same	Yes, remained the same	Yes, remaining the same	Yes, remaining the same	Yes, remaining the same	Yes (Please identify
13	California	92407-2393	Representative	Yes, decreased	Yes, increased	Yes, increased	Yes, increasing	Yes, increasing	Yes, increasing	Yes (Please identify
14	California	95929-0295	Representative	Yes, decreased	Yes, decreased	Yes, decreased	Yes, decreasing	Yes, decreasing	Yes, decreasing	Yes (Please identify
15	California	95616-5292	Representative	Yes, decreased	Yes, decreased	Yes, remained the same	Yes, remaining the same	Yes, remaining the same	Yes, remaining the same	Yes (Please identify
16	California	90032-8300	Representative	Yes, decreased	Yes, increased	Yes, increased	Yes, decreasing	Yes, remaining the same	Yes, remaining the same	No
17	California	91711-3991	Representative	Yes, decreased	Yes, remained the same	Yes, increased	Will not be affected	Yes, increasing	Yes, increasing	Yes (Please identify
18	California	94132-4030	Representative	Yes, decreased	Yes, remained the same	Yes, decreased	Yes, decreasing	Yes, increasing	Yes, increasing	Yes (Please identify
19	California	90095-1575	Senatorial	Yes, decreased	Yes, decreased	Yes, remained the same	Yes, remaining the same	Yes, remaining the same	Yes, remaining the same	Yes (Please identify
20	California	94720-6000	Land grant college	Yes, decreased	Yes, remained the same	Yes, remained the same	Yes, decreasing	Yes, increasing	Yes, increasing	Yes (Please identify
21										
22										
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42										

14. To view the responses to other questions, click on the tab containing the raw data (LIB_MASTER_120312) and repeat steps 2 through 13.
- a. On the *Insert* tab, select Pivot Table and then select the Table/Range and where to place the table.
 - b. Drag the “State” field from the “Pivot Table Field List” into the “Report Filter” box. Select the State whose data you want to view from the State (All) drop down filter in cell B1.
 - c. Determine the manner in which you want to group the data and select the appropriate fields by checking the box in the “Pivot Table Field List” or by dragging the fields from the “Pivot Table Field List” into the “Row Labels” box.
 - d. Drag the question number from the “Pivot Table Field List” into the “Values” box twice – once for the frequency and the other for the percentage. Format the number values and insert a “Custom Name.”
 - e. Format the Pivot Table by selecting the desired options for “Subtotals,” “Grand Totals,” “Report Layout,” and Pivot Table Styles.”
 - f. Rename the worksheet with the question number.
 - g. Use the *drill down* feature as desired.

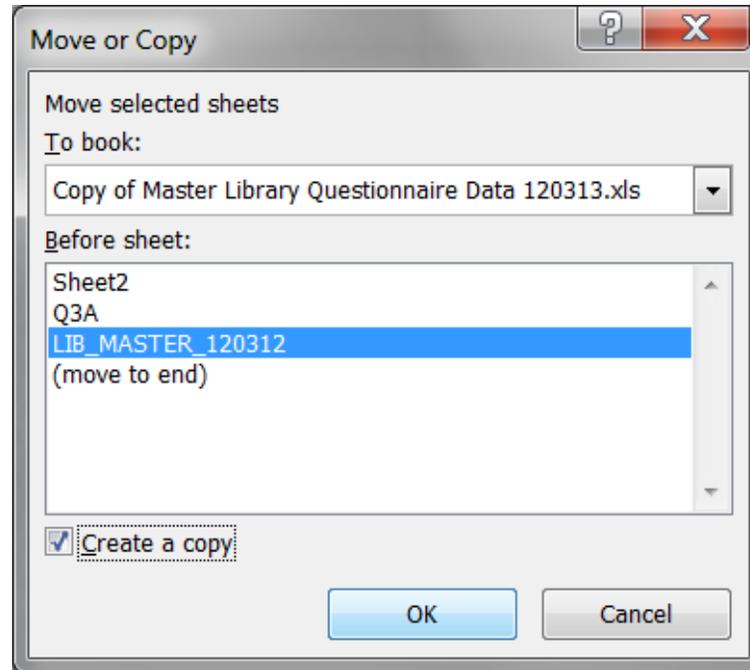
15. A Pivot Chart can be created to graphically display the values in the Pivot Table.

- a. To create a Pivot Chart with frequencies only while maintaining the Pivot Table with both frequencies and percentages, copy the Pivot Table into a new worksheet. To copy the worksheet, right click on the worksheet tab and select “Move or Copy.”

The screenshot displays the Microsoft Excel interface with a PivotTable and a context menu. The PivotTable is set to show data for Q3A, categorized by State, Depository_Type, Library_Type, and Library_Size. The context menu is open over the 'Q3A' worksheet tab, with 'Move or Copy...' selected.

		No change		Yes, decreased		Yes, increased		Yes, remain
Depository_Type	Library_Type	Library_Size	Frequency	Percent	Frequency	Percent	Frequency	Percent
Regional	State Library	Large		0.0%	1	100.0%		0.0%
Regional Total				0.0%	1	100.0%		0.0%
Selective	Academic General	Large	2	9.1%	19	86.4%	1	4.5%
		Medium	1	20.0%	4	80.0%		0.0%
	Academic, Law Library	Large		0.0%		0.0%		0.0%
		Medium	4	50.0%	2	25.0%	1	12.5%
		Small	1	33.3%	2	66.7%		0.0%
	Federal Agency Library	Medium		0.0%	1	100.0%		0.0%
	Highest State Court Library	Small		0.0%		0.0%	1	100.0%
	Public Library	Large		0.0%	6	100.0%		0.0%
		Medium		0.0%	5	100.0%		0.0%
	Special Library	Small		0.0%	3	75.0%		0.0%
Medium		1	50.0%		0.0%		0.0%	
Selective Total			9	15.3%	42	71.2%	4	6.8%
Grand Total			9	15.0%	43	71.7%	4	6.7%

b. The “Move or Copy” box will open. Choose where to place the new, copied worksheet; check the “Create a copy” box; and click OK.



c. The new worksheet will be created with a tab name of the tab that was copied followed by "(2)."

The screenshot shows an Excel PivotTable with the following data:

Depository_Type	Library_Type	Library_Size	Q3A Data					
			No change	Yes. decreased	Yes. increased	Yes. remain		
			Frequency	Percent	Frequency	Percent	Frequency	Percent
Regional	State Library	Large		0.0%	1	100.0%		0.0%
Regional Total				0.0%	1	100.0%		0.0%
Selective	Academic General	Large	2	9.1%	19	86.4%	1	4.5%
		Medium	1	20.0%	4	80.0%		0.0%
	Academic. Law Library	Large		0.0%		0.0%		0.0%
		Medium	4	50.0%	2	25.0%	1	12.5%
		Small	1	33.3%	2	66.7%		0.0%
	Federal Agency Library	Medium		0.0%	1	100.0%		0.0%
	Highest State Court Library	Small		0.0%		0.0%	1	100.0%
	Public Library	Large		0.0%	6	100.0%		0.0%
		Medium		0.0%	5	100.0%		0.0%
		Small		0.0%	3	75.0%		0.0%
Special Library	Medium	1	50.0%		0.0%		0.0%	
	Small		0.0%		0.0%	1	100.0%	
Selective Total			9	15.3%	42	71.2%	4	6.8%
Grand Total			9	15.0%	43	71.7%	4	6.7%

The PivotTable Field List on the right shows the following configuration:

- Report Filter: State
- Column Labels: Q3A, Values
- Row Labels: Depository_Type, Library_Type, Library_Size
- Values: Frequency, Percent

A callout box in the bottom left of the worksheet area states: "Copied tab was named Q3A (2)." with a downward arrow pointing to the new worksheet tab in the bottom ribbon.

- d. To rename the tab, double click on the tab, type the new name (such as, *Q3A Chart*), and hit enter (see step 12).
- e. On the copied worksheet, delete the percentages from the Pivot Table. Click on the drop down arrow on the field named “Percent” in the “Values” box and select “Remove Field”.

The screenshot shows an Excel spreadsheet with a PivotTable. The PivotTable is structured as follows:

State	California	Q3A	Data							
			No change	Yes, decreased	Yes, increased	Yes, remain				
Depository_Type	Library_Type	Library_Size	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	
Regional	State Library	Large		0.0%	1	100.0%		0.0%		
Regional Total				0.0%	1	100.0%		0.0%		
Selective	Academic General	Large	2	9.1%	19	86.4%	1	4.5%		
		Medium	1	20.0%	4	80.0%		0.0%		
		Small		0.0%		0.0%		0.0%		
	Academic, Law Library	Large			0.0%				0.0%	
		Medium	4	50.0%	2	25.0%	1	12.5%		
		Small	1	33.3%	2	66.7%		0.0%		
	Federal Agency Library	Medium			0.0%	1	100.0%		0.0%	
		Small			0.0%			1	100.0%	
	Highest State Court Library	Large			0.0%	6	100.0%		0.0%	
		Medium			0.0%	5	100.0%		0.0%	
	Public Library	Small			0.0%	3	75.0%		0.0%	
		Medium	1	50.0%		0.0%			0.0%	
Small			0.0%			1	100.0%			
Selective Total			9	15.3%	42	71.2%	4	6.8%		
Grand Total			9	15.0%	43	71.7%	4	6.7%		

The PivotTable Field List task pane on the right shows the following fields:

- fdlp
- State_Postal_Code
- FdLP_REGIONS
- Depository_Type
- Library_Type
- Library_Size
- Library_Name
- Street_Address
- City
- State
- Zip_Code
- Type_of_Designation
- Q3A
- Q3B
- Q3C
- Q4A
- Q4B
- Q4C
- Q5

The 'Values' section of the task pane shows:

- Row Labels: State
- Columns: (empty)
- Values: Library_Type (Percent), Library_Size (Percent)

A black arrow points to the 'Remove Field' option in the 'Values' section of the task pane.

- f. Delete any fields from the “Row Labels” box that will not be included in the Pivot Chart. To delete the field, click on the drop down arrow and select “Remove Field” or deselect it in the “Pivot Table Field List.” In the figure below, the field “Library Size” is being deleted from the Pivot Table.

The screenshot shows the Microsoft Excel interface with a PivotTable titled "Depository_Type". The PivotTable is located in the range A4:H19. The PivotTable Field List task pane is open on the right side of the screen, and the "Remove Field" option is selected for the "Library Size" field. A black arrow points to the "Remove Field" option in the task pane.

Depository_Type	Library_Type	Library_Size	No change	Yes, decreased	Yes, increased	Yes, remained the same	Grand Total	
Regional	State Library	Large			1		1	
Regional Total					1		1	
Selective	Academic General	Large	2	19	1		22	
		Medium	1	4			5	
	Academic, Law Library	Large				1	1	
		Medium	4	2		1	8	
		Small	1	2			3	
	Federal Agency Library	Medium			1		1	
		Small				1	1	
	Highest State Court Library	Public Library	Large			6		6
			Medium			5		5
			Small			3		4
	Special Library	Medium	Small	1			1	2
			Small			1		1
Selective Total			9	42	4	4	59	
Grand Total			9	43	4	4	60	

g. To create the Pivot Chart –

- i. Click inside the Pivot Table
- ii. On the *Insert* tab, click on the drop down arrow of the type of chart to be created
- iii. Click on the type of chart desired. The Pivot Chart will be created on the same worksheet as the Pivot Table.

The screenshot displays the Microsoft Excel interface with a PivotTable and a PivotChart menu. The PivotTable is located in the range D8:H14 and shows the following data:

	Yes, increased	Yes, remained the same	Grand Total
1	1	1	1
23	1	1	2
4	1	1	2
1	1	1	2
14	1	1	2
42	4	4	8
43	4	4	8

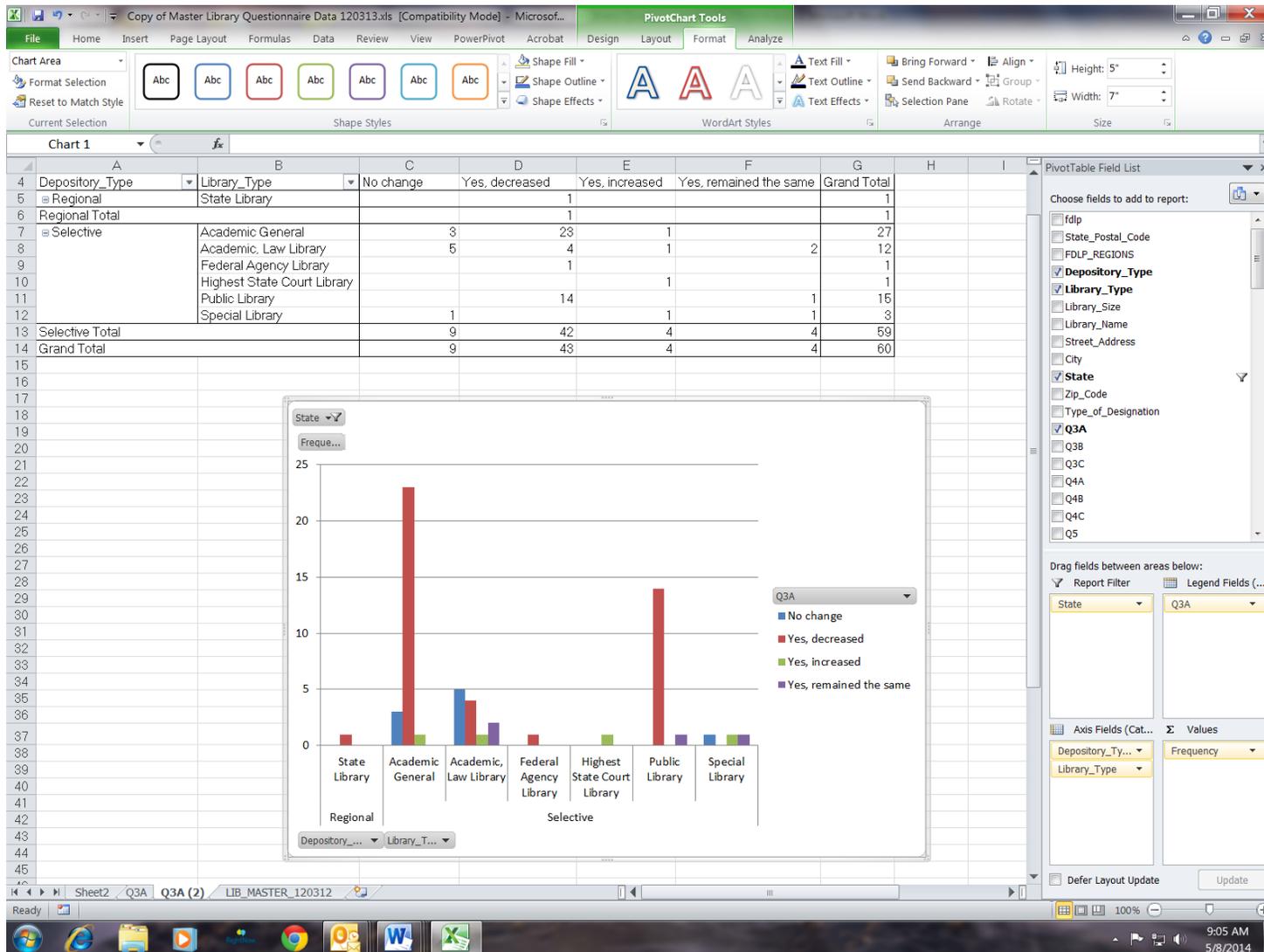
The PivotChart menu is open, showing the following options:

- 2-D Column
- Clustered Column
- Cone
- Pyramid

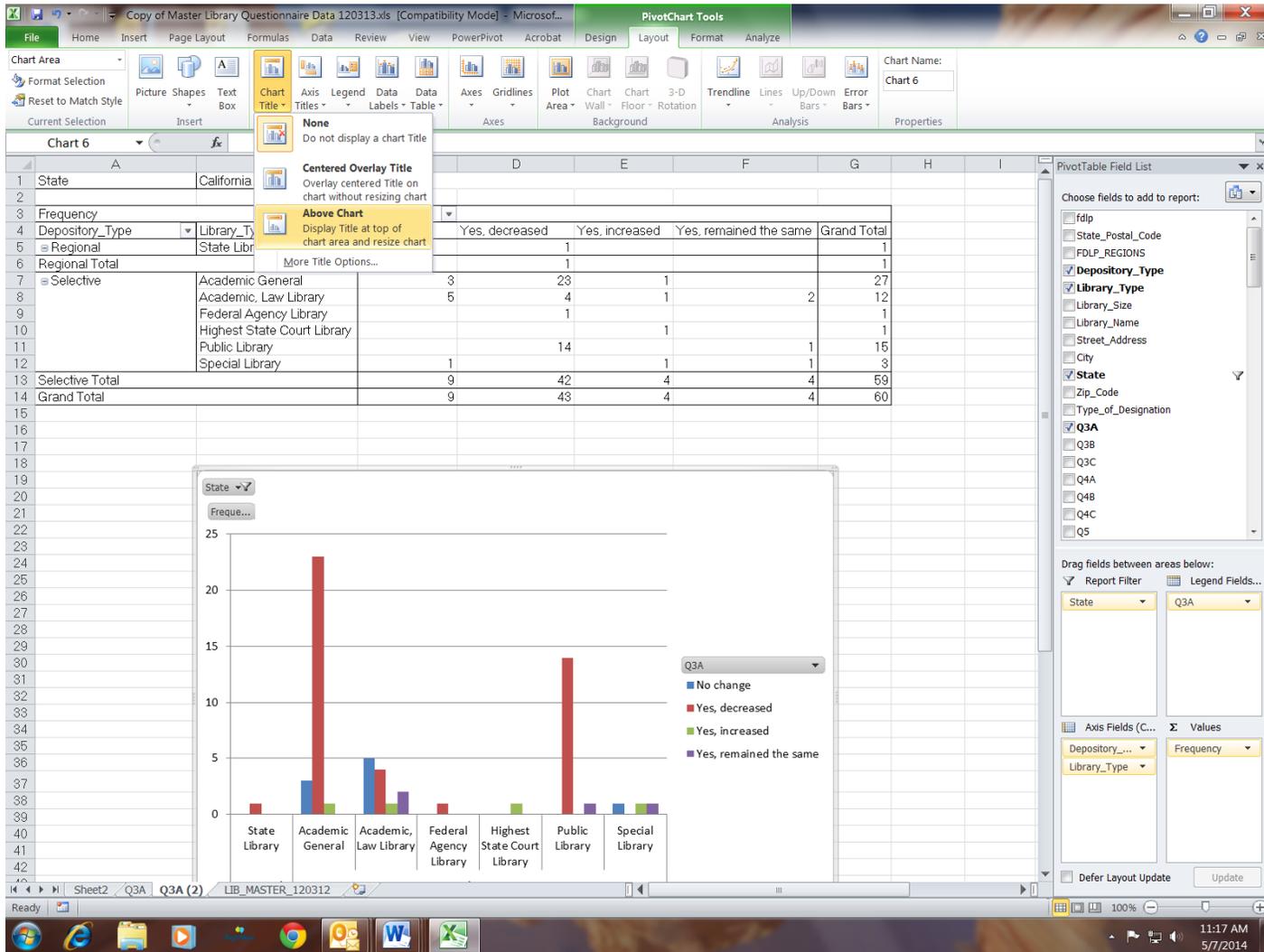
The PivotTable Field List on the right shows the following configuration:

- Report Filter: State
- Column Labels: Q3A
- Row Labels: Depository Type, Library Type
- Values: Frequency

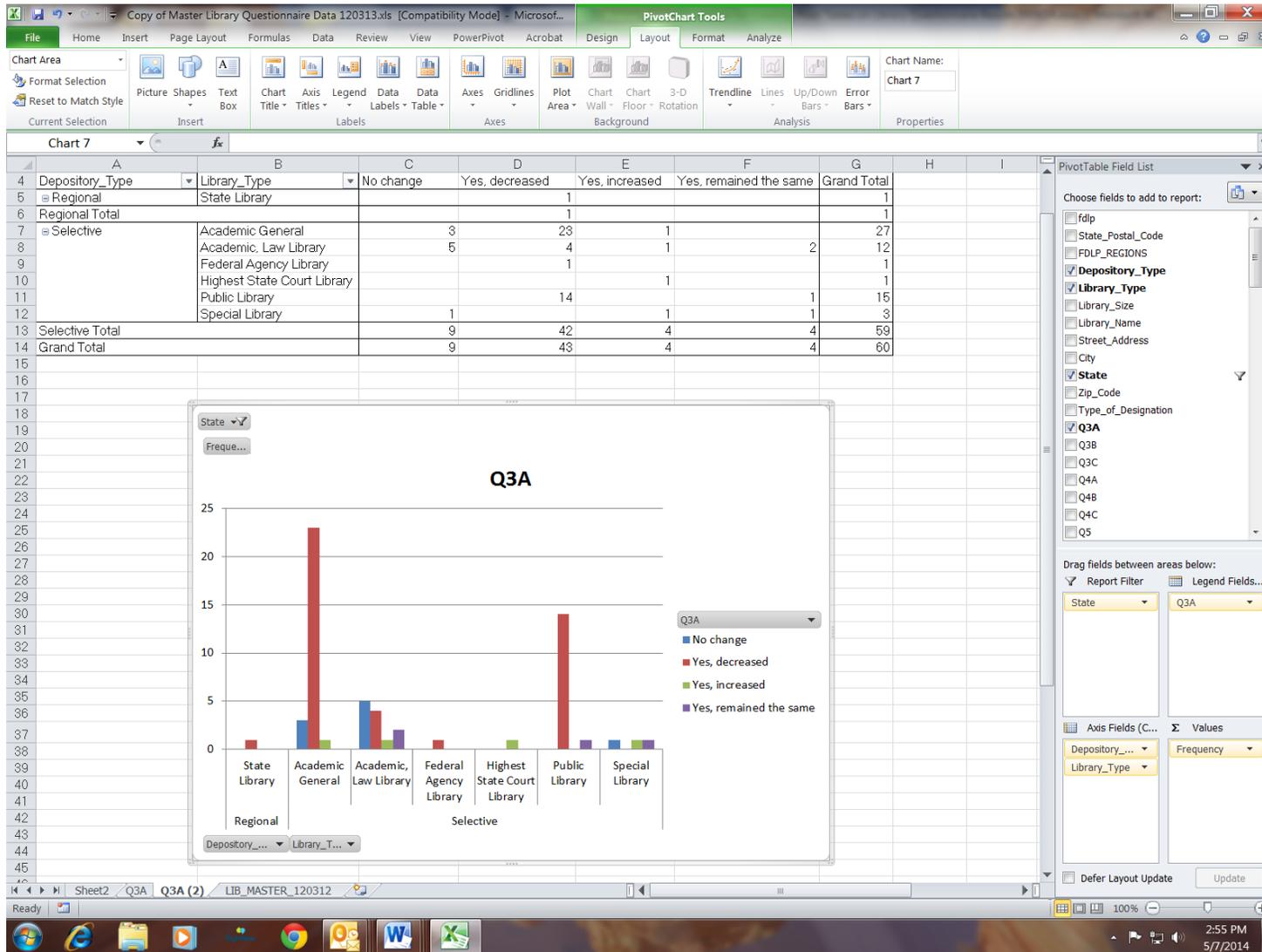
- h. The overall size of the Pivot Chart can be modified by adjusting the height and width in the “Size” category on the *PivotChart Tools Format* tab. In the figure below, the size was increased to 5”x7”.



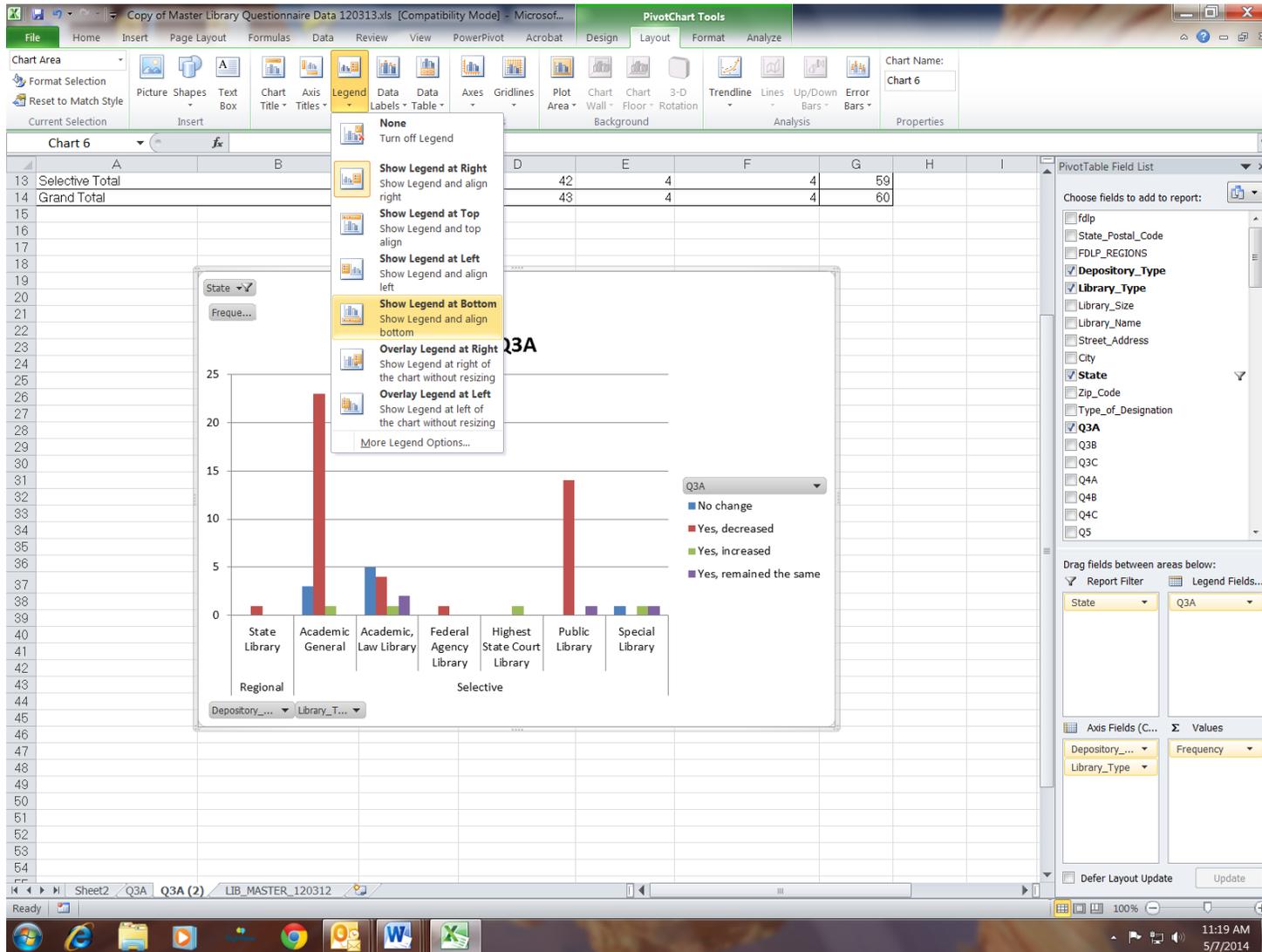
- i. The appearance of the Pivot Chart can be modified by using the features on the *PivotChart Tools Layout* tab. A few of them are described below.
- i. Click on the drop down arrow for the “Chart Title” icon and select the placement of the title within the chart. In the figure below, a title to be placed above the chart is being selected.



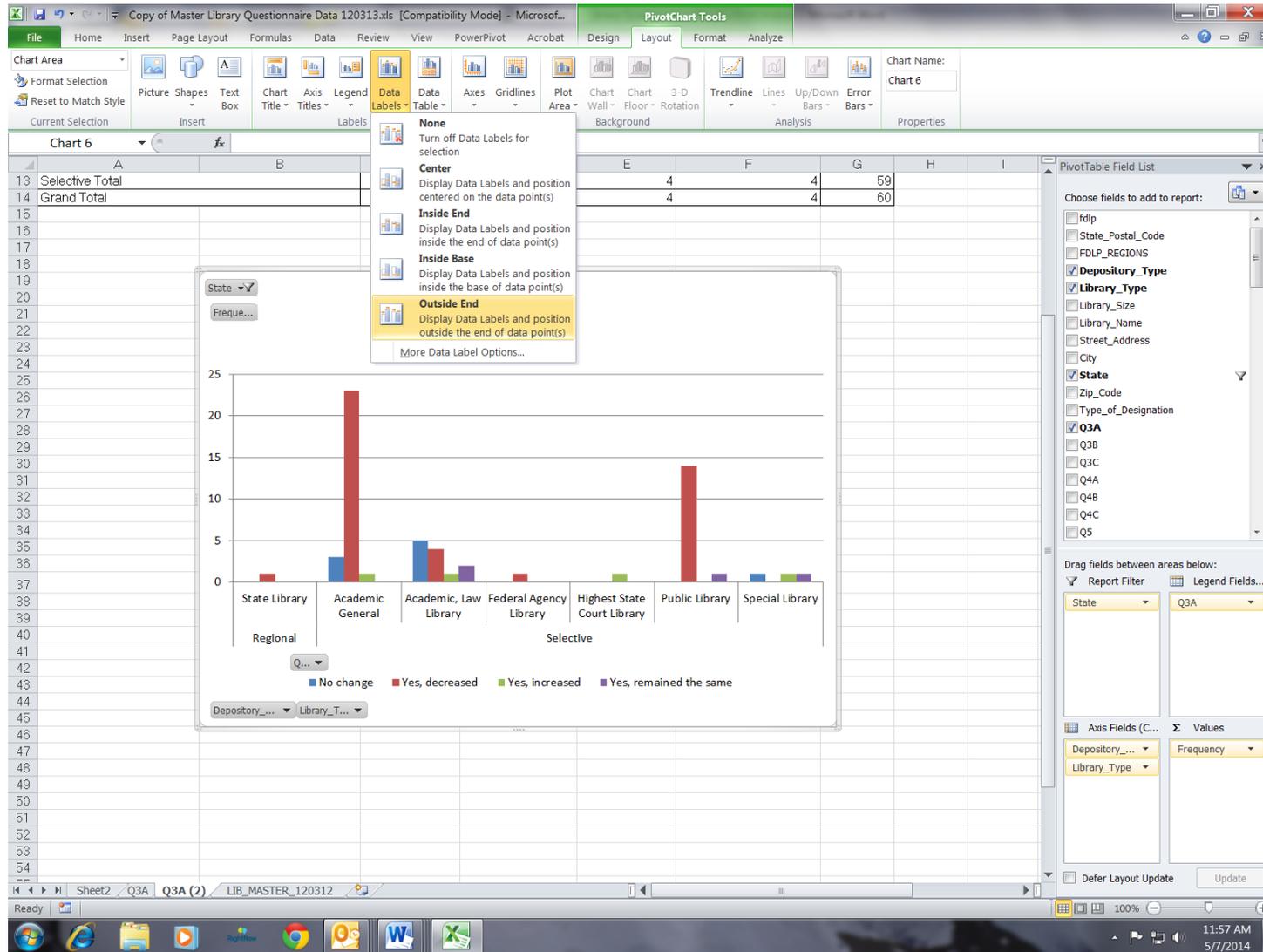
1. When a title is added to a chart, a “Chart Title” box is created. Click inside this box and type the title. When finished click outside the “Chart Title” box. In the figure below, the title “Q3A” was added above the chart. To delete a title, click on the “Chart Title” icon drop down arrow and select “None.”



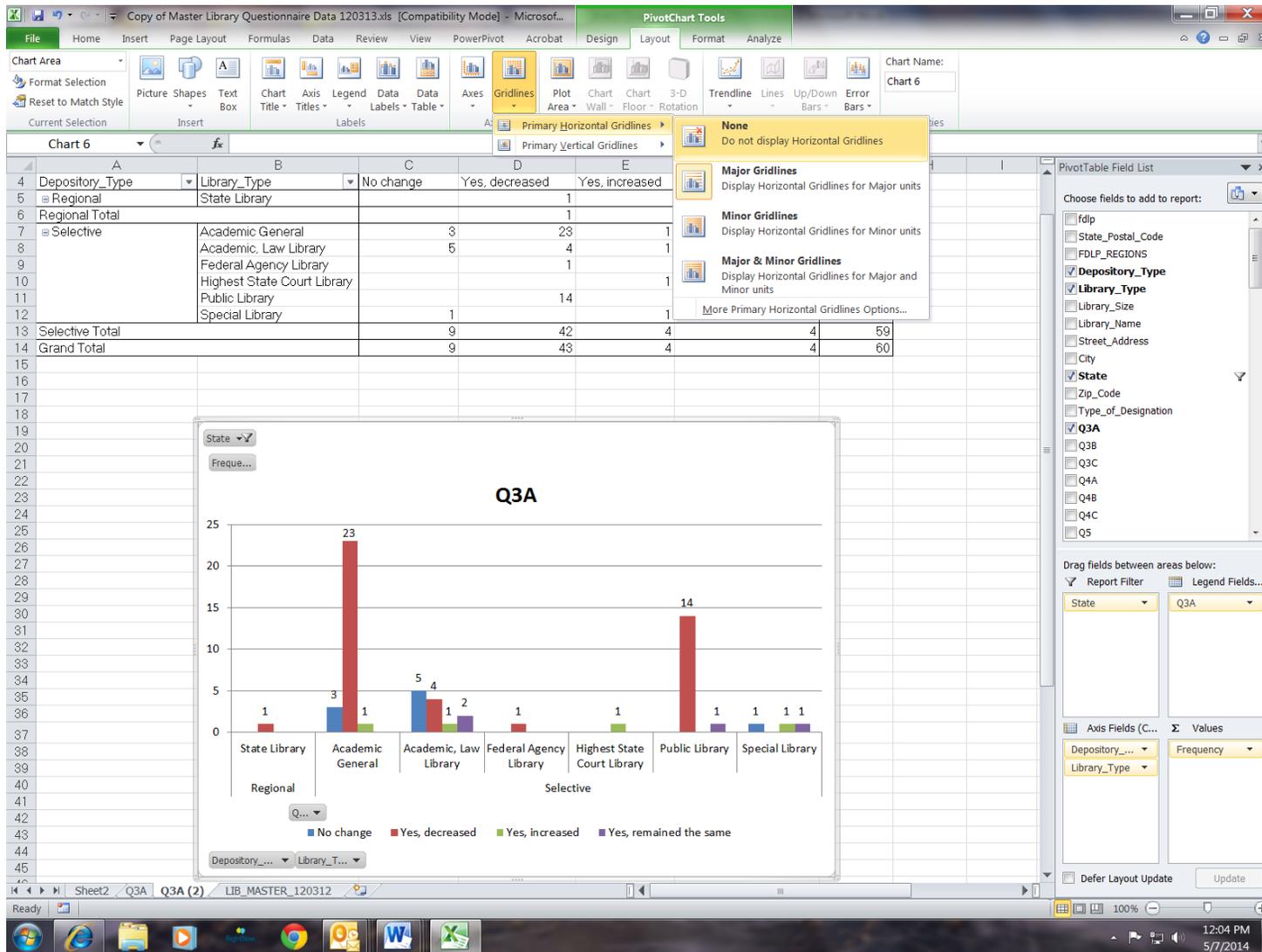
- ii. When a Pivot Chart is created, Excel places the chart legend on the right of the chart as the default. To change the placement of the legend within the chart, click on the drop down arrow for the “Legend” icon and select the placement of the legend within the chart. In the figure below, “Show Legend at Bottom” is being selected. To remove the legend, select “None.”



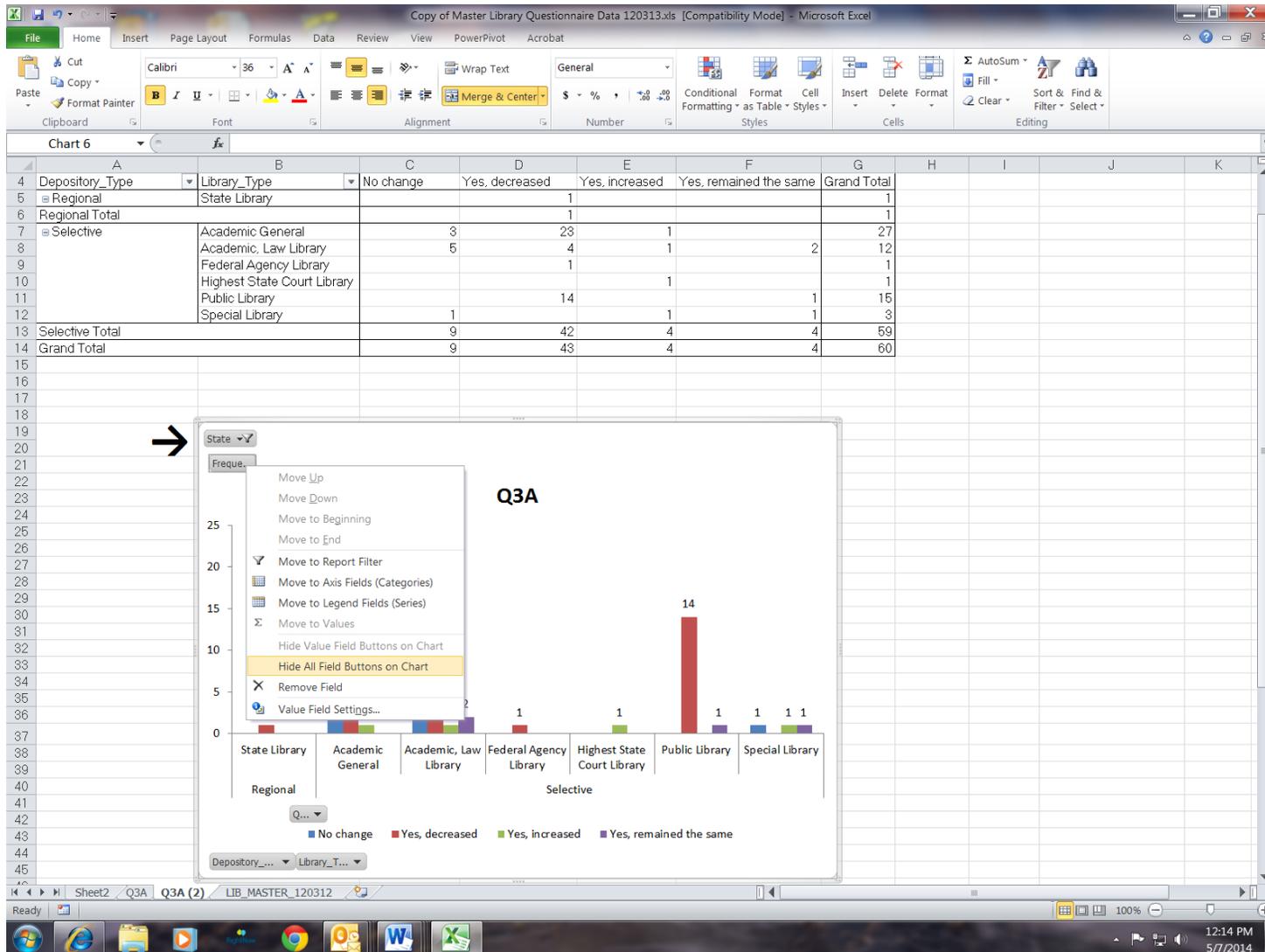
- iii. To add data labels, click on the drop down arrow for the “Data Labels” icon and select the desired location of the data labels. In the figure below, “Outside End” is being selected for the placement of data labels. To delete data labels that have been added, select “None.”



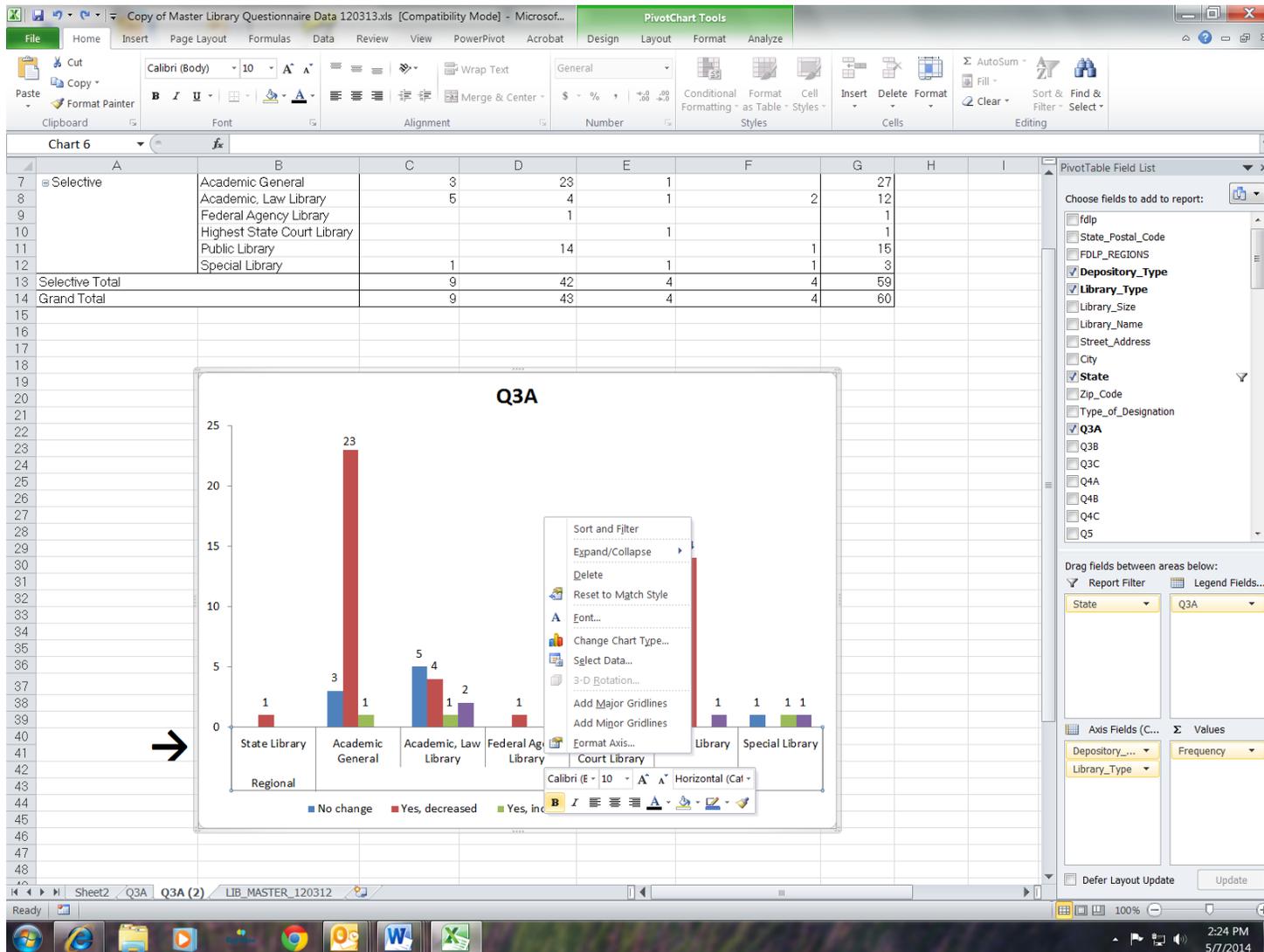
iv. To change the primary horizontal and vertical gridlines, click on the drop down arrow for the “Gridlines” icon and select the desired option. In the figure below, primary horizontal gridlines are being removed.



v. To hide the “PivotChart Field Buttons” (the small gray rectangles), click on one of them and select “Hide all Field Buttons on Chart.”



- vi. Items within a Pivot Chart can be formatted by right clicking on them and selecting “Bold,” “Italic,” “Font Type,” “Font Size,” etc. In the figure below, the horizontal axis labels were selected and bolded.



- vii. To format the data labels, right click on one of the labels. All labels for that response choice (same bar color) will be selected. Choose the desired formatting. In the figure below, the response “Yes, decreased” was selected and bolded. All the data labels for the red bars (response choice “Yes, decreased”) were formatted together. To format all data labels, repeat the process for each color bar.

