

Making Excel Work for You: Transform Your Data Quickly using Excel for Report Generation

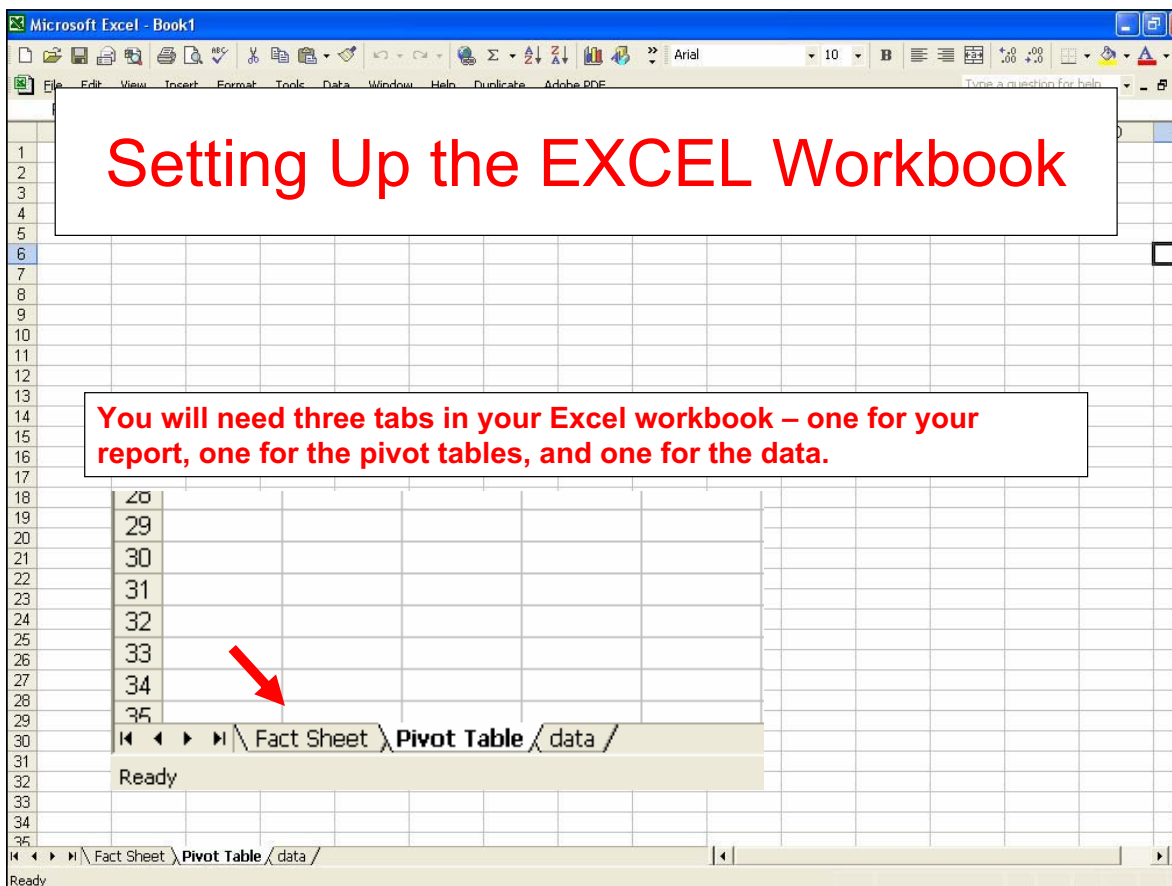
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Belmont Abbey College

Using Excel Pivot Tables to Generate Reports

- The IR Office at Belmont Abbey College uses Excel Pivot Tables to automatically update reports.
- Type of Reports
 - Fact Sheet
 - Fact Book
 - All Annual Survey Reports

Pros & Cons

- Con. – Requires a lot of up-front time to set up pivot tables and the links to the reports.
- Pro. – Can update a report in seconds.



Setting Up the EXCEL Workbook

You will need three tabs in your Excel workbook – one for your report, one for the pivot tables, and one for the data.

20
29
30
31
32
33
34
35

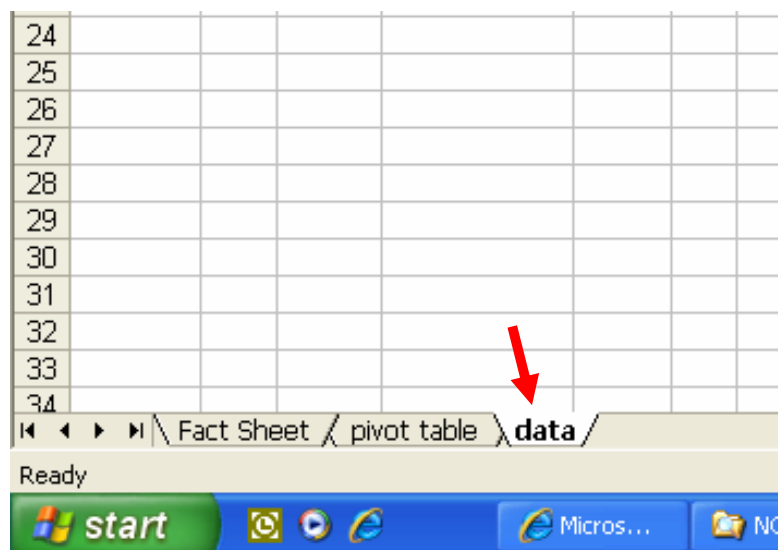
Fact Sheet Pivot Table data

Ready

Ready

The image shows a screenshot of the Microsoft Excel interface. A large red text box is overlaid on the worksheet, containing the text 'Setting Up the EXCEL Workbook'. Below this, another red text box contains the instruction: 'You will need three tabs in your Excel workbook – one for your report, one for the pivot tables, and one for the data.' At the bottom of the worksheet, the tab bar shows three tabs: 'Fact Sheet', 'Pivot Table', and 'data'. A red arrow points to the 'Pivot Table' tab. The status bar at the bottom of the window displays 'Ready'.

Data Sheet



The first row of the “data” sheet is for column labels. Each column must have a label even if the variable is not used in the report.

Microsoft Excel - FACT SHEET F 2007-NCAIR sample

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L139 fx

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Year	ID #	ST	Residence	REL	M/F	D/B	POPULATION	SAT MATH	SAT VERBAL	SAT TOTAL	HSGPA	PROG	ETHN
2	Fall 2007	1	NC	IN STATE	UNKN	F	C	TRAN				3.24	ADP	NOR
3		2	NC	IN STATE	UNKN	F	C	TRAN				2.85	ADP	WH
4		3	NC	IN STATE	UNKN	F	C	TRAN				3.19	ADP	WH
5		4	VA	OUTOFSTATE	CATH	F	R		480	520	1000	3.14	TRAD	WH
6		5	NC	IN STATE	BAPT	F	C	TRAN				2.00	ADP	BLA
7		6	NC	IN STATE	UNKN	F	C	TRAN					ADP	BLA
8		7	NC	IN STATE	UNKN	F	C	TRAN				2.68	ADP	BLA
9		8	NC	IN STATE	UNKN	M	C	TRAN				2.76	ADP	WH
10		9	NC	IN STATE	BAPT	F	C	TRAN				2.90	ADP	BLA
11		10	NC	IN STATE	UNKN	F	C	TRAN				3.50	ADP	BLA
12		11	NC	IN STATE	CATH	F	C		390	420	810		ADP	HIS
13		12	VA	OUTOFSTATE	BAPT	M	R	TRAN				2.78	TRAD	BLA
14		13	NC	IN STATE	UNKN	M	R		460	350	810	2.26	TRAD	NOR

Microsoft Excel - FACT SHEET F 2007-NCAIF

Each column contains the same type of data (i.e., text, numeric)

Each of the rows following row 1 represents one record. For example, row 2 would be all the data for one student

Year	ID #	ST	Residence	REL	M/F	D/B	POPULATION	SAT MATH	SAT VERBAL
Fall 2007	1	NC	IN STATE	UNKN	F	C	TRAN		
	2	NC	IN STATE	UNKN	F	C	TRAN		
	3	NC	IN STATE	UNKN	F	C	TRAN		
	4	VA	OUTOFSTATE	CATH	F	R		480	520
	5	NC	IN STATE	BAPT	F	C	TRAN		
	6	NC	IN STATE	UNKN	F	C	TRAN		
	7	NC	IN STATE	UNKN	F	C	TRAN		
	8	NC	IN STATE	UNKN	M	C	TRAN		
	9	NC	IN STATE	BAPT	F	C	TRAN		
	10	NC	IN STATE	UNKN	F	C	TRAN		
	11	NC	IN STATE	CATH	F	C		390	420

Pivot Tables

Place all the pivot tables in one sheet

Ready

007-NCAIR sample

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Sort...
Filter
PivotTable and PivotChart Report...
Refresh Data

Click a cell in column A of pivot table sheet.

Click "Data" in tool bar and select "Pivot Table and Pivot Chart Report"

B J K

Make sure that the buttons next to "Microsoft Excel list or database" and "Pivot Table" are clicked.

PivotTable and PivotChart Wizard - Step 1 of 3

Where is the data that you want to analyze?

- Microsoft Excel list or database
- External data source
- Multiple consolidation ranges
- Another PivotTable report or PivotChart report

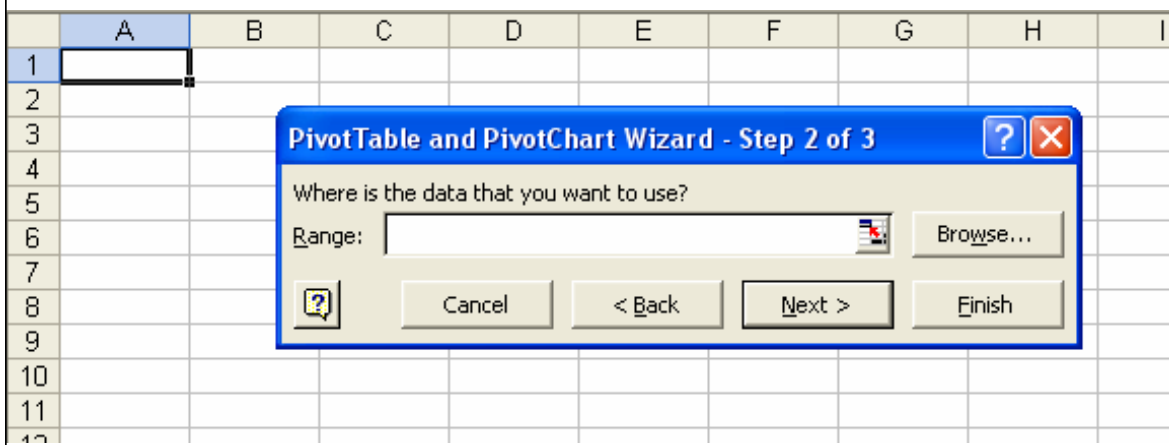
What kind of report do you want to create?

- PivotTable
- PivotChart report (with PivotTable report)

Click "Next >"

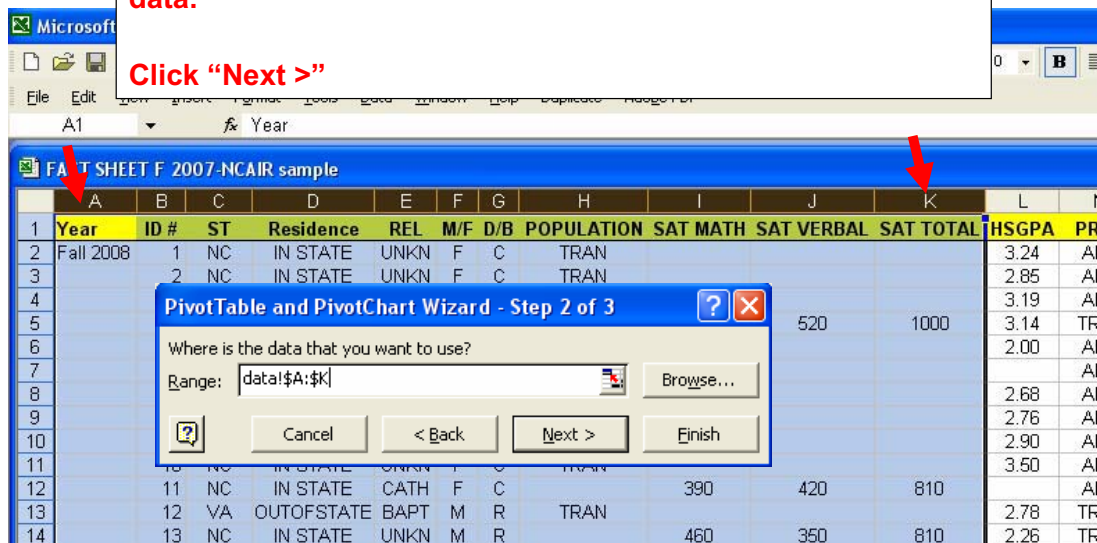
Cancel < Back Next > Finish

This window will appear.



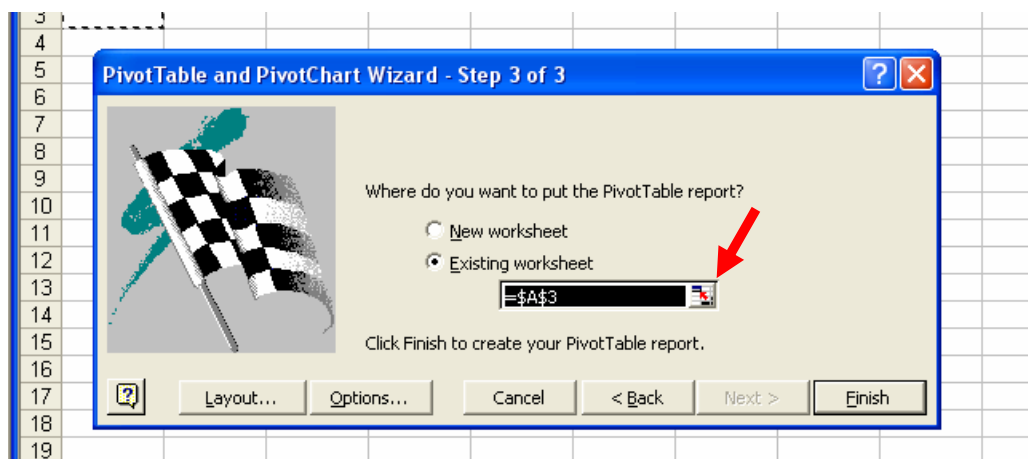
Go to the "data" sheet and drag across the top of the columns to highlight all the data. Note: It's important that you highlight the data in this manner in order to automatically update the pivot tables when you change the data.

Click "Next >"



The highlighted data should appear in the box.

Click "Finish"



The "pivot table" sheet will look like this.

Drag items from the pivot table field list to the pivot table.

Drag items from the pivot table field list to the pivot table.

The screenshot shows an Excel spreadsheet with a PivotTable. The PivotTable is located in cells B3:D5. The PivotTable field list is open on the right side of the screen. A red arrow points from the 'COLLEGE' field in the field list to the 'COLLEGE' dropdown in the PivotTable.

	A	B	C	D	E
1	Drop Page Fields Here				
2					
3	Count of ID #	COLLEGE			
4		ADP	TRAD	Grand Total	
5	Total	685	768	1453	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

The PivotTable Field List on the right contains the following items:

- ST
- Residence
- REL
- M/F
- D/B
- POPULATION
- SAT MATH
- SAT VERBAL
- SAT TOTAL
- HSGPA
- PROG
- ETHNICITY
- CLASS
- COUNTY
- FTE
- PT-FT
- COL ATTEND
- COLLEGE**
- FACULTY #

Right click on any place in the pivot table. Click "Table Options".

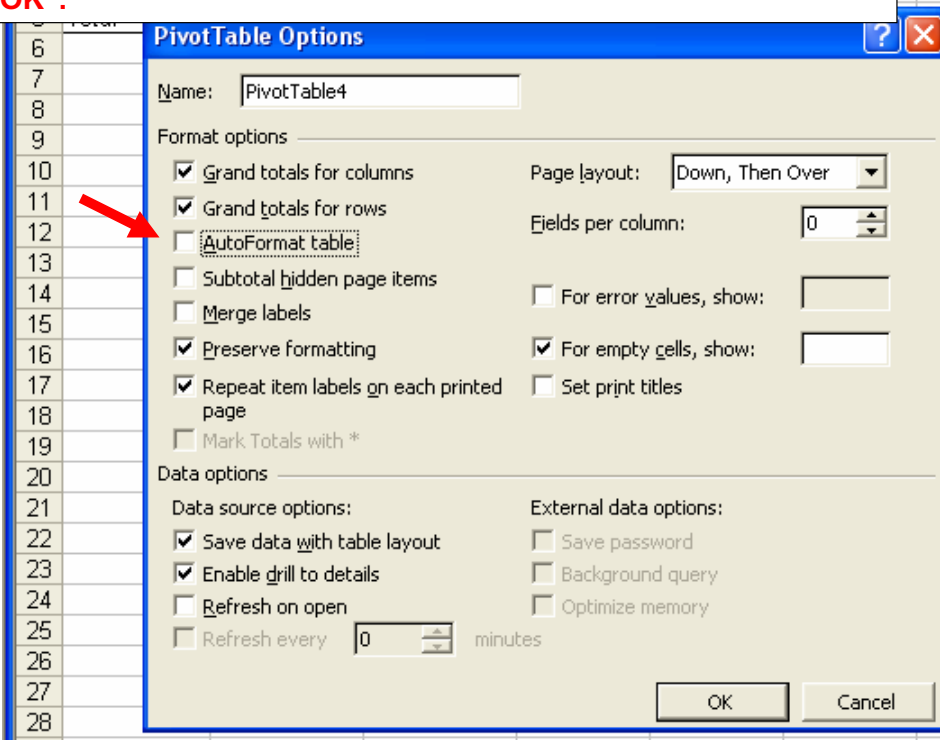
The screenshot shows the same PivotTable as in the previous image. A right-click context menu is open over the PivotTable. A red arrow points to the 'Table Options...' option in the menu.

2					
3	Count of ID #	COLLEGE			
4		ADP			
5	Total				
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

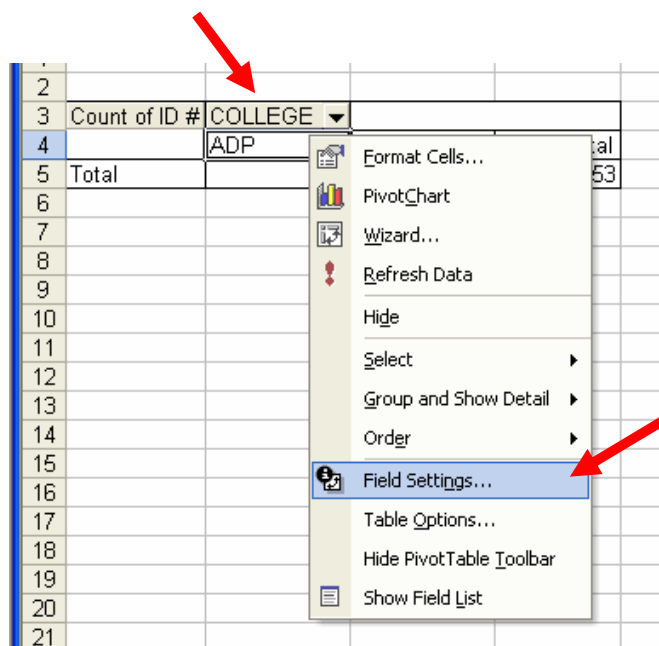
The context menu options are:

- Format Cells...
- PivotChart
- Wizard...
- Refresh Data
- Hide
- Select
- Group and Show Detail
- Order
- Field Settings...
- Table Options...**
- Hide PivotTable Toolbar
- Hide Field List

Click off the AutoFormat table button. This will keep your pivot table from changing formats when you add more tables. Click "OK".



Right click on each categorical variables in the pivot table. Click "Field Settings".



Click the “Show items with no data” box. Click “OK”.

3	Count of ID #	COLLEGE		
4		ADP	TRAD	Grand Total
5	Total	685	768	1453
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				

PivotTable Field

Name: COLLEGE

Subtotals

Automatic
 Custom
 None

Sum
Count
Average
Max
Min
Product

Show items with no data

OK
Cancel
Hide
Advanced...
Layout...

To add the next pivot table click a cell several rows below the pivot table above. Note: It's important that you leave several rows between pivot tables. Pivot tables often change size when refreshed and will not refresh if they overlap.

The more variables included in your pivot table, the more important it is to leave extra lines between pivot tables.

	A	B	C	D	E
1					
2					
3	Count of ID #	COLLEGE			
4		ADP	TRAD	Grand Total	
5	Total	685	768	1453	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					

To add another pivot table, the next step begins the same way you added the first pivot table.

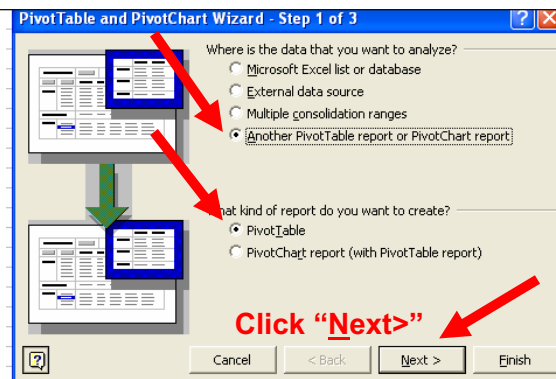
Click "Data" in tool bar and select "Pivot Table and Pivot Chart Report"

When you add pivot tables that are based on the same data as the initial table, you will want to base future pivot tables on the existing pivot table and data.

Pivot tables require a lot of memory and you will save memory when you link your pivot tables together. Also, it is important to link the tables when refreshing your data. By linking tables you can refresh all the pivot tables with one click.

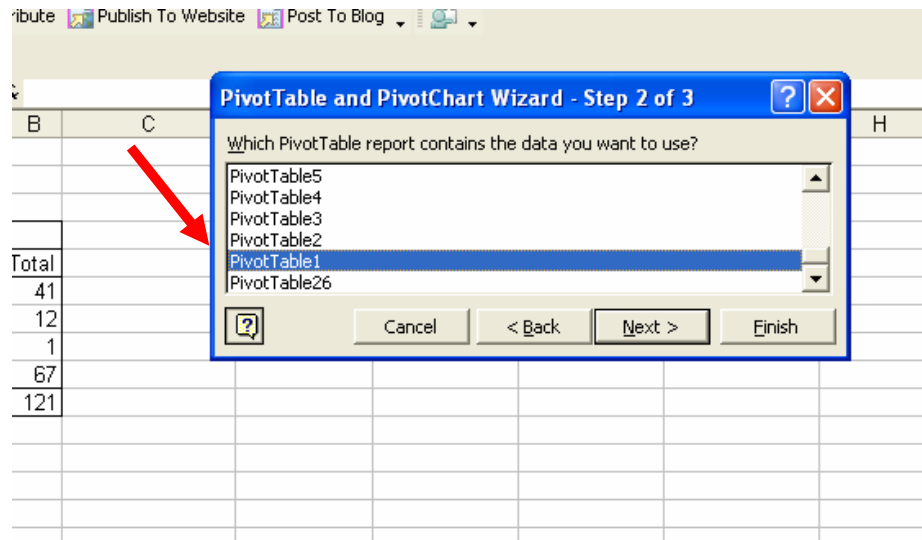
Next: To base your pivot table on the same data used in the initial pivot table,

Make sure that the buttons next to "Another Pivot Table report or PivotChart report" and "Pivot Table" are checked.

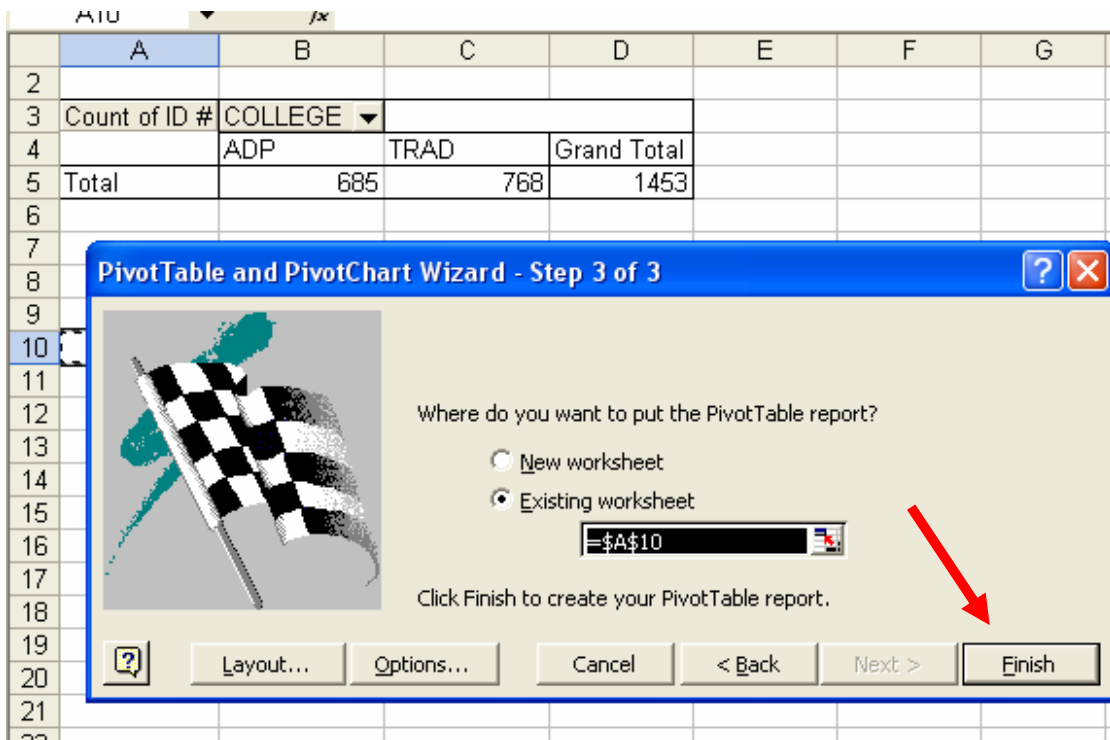


Note, This is the step that deviates from the original pivot table set up. Originally, you selected a database or Excel list. Here you are selecting a pivot table.

Next, Click on the Pivot Table Number that contains the original data. Generally, I suggest always using "Pivot Table 1" if all pivot tables are to be based on the same data. Click "Next >"



Click "Finish".



Continue adding pivot tables, making sure each is linked to the original table.

The screenshot shows an Excel spreadsheet with a pivot table. The pivot table is located in the range B3:D5. The data in the pivot table is as follows:

Count of ID #	COLLEGE			
	ADP	TRAD	Grand Total	
Total	685	768	1453	

The PivotTable Field List task pane is open on the right side of the spreadsheet. It contains a list of fields that can be added to the pivot table report:

- Year
- ID #
- ST
- Residence
- REL
- M/F
- D/B
- POPULATION
- SAT MATH
- SAT VERBAL
- SAT TOTAL
- HSGPA
- PROG
- ETHNICITY
- CLASS
- COUNTY
- FTE
- PT-FT
- COL ATTEND
- COLLEGE
- FACULTY #

The spreadsheet also shows several drop zones for fields:

- Drop Page Fields Here (rows 8-9)
- Drop Column Fields Here (row 10)
- Drop Row Fields Here (column 11)
- Drop Data Items Here (rows 11-23, column 12)

Report Sheet

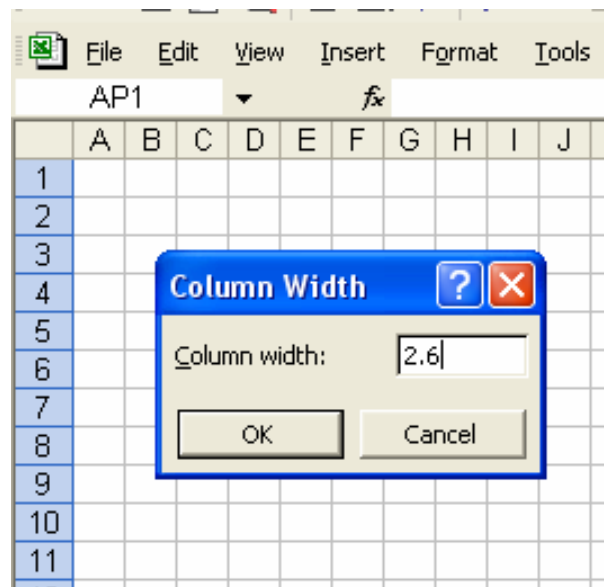
The report sheet will “house” the charts and tables of the report. We use Excel for writing the entire report.

The screenshot shows an Excel spreadsheet with a report sheet. The report sheet is located in the range B22:D26. The data in the report sheet is as follows:

22			
23			
24			
25			
26			

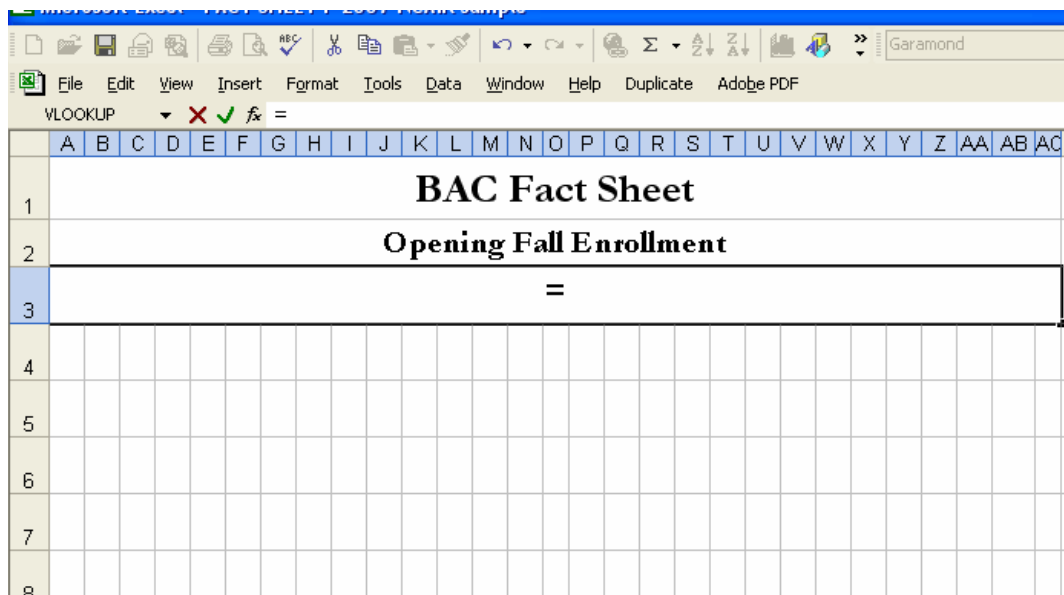
The Windows taskbar is visible at the bottom of the screen. The active window is titled "Fact Sheet / pivot table / data /". The taskbar also shows the Start button, several application icons, and the system tray.

To allow for the “report” sheet to contain many different tables of differing sizes, we shrink the column widths to 2.6 inches.



Begin building report, merging cells when necessary.

To link cells to data or pivot tables that will automatically update, click the cell and type “=”.



Go to the pivot table sheet and click on the information needed for the report.

Hit "Enter" on the keyboard.

	A	B	C	D
2				
3	Count of ID #	CC		
4		ADP	TRAD	Grand Total
5	Total	685	768	1453
6				
7				
8				

The information will appear in the appropriate cell in the report.
Continue linking report to pivot tables.

Fall 2008

Total Student Body				
	<i>Traditional Students</i>	<i>Adult Students</i>	<i>Total</i>	
7	Enrollment	768	685	1453
8	Full-time Equivalent	765.25		765.25
9				% of Total I
10	<i>New Admissions</i>			
11	First-time First-year			<i>HSGPA</i>
12	New Transfers			Mean
13	Old Returns			
14	Post-Baccalaureate			<i>SAT Score</i>

Pivot tables also allow you to do some descriptive statistics.

After dragging the variable into the pivot table from the field list, right click one of the cells in the pivot table that contains the information.

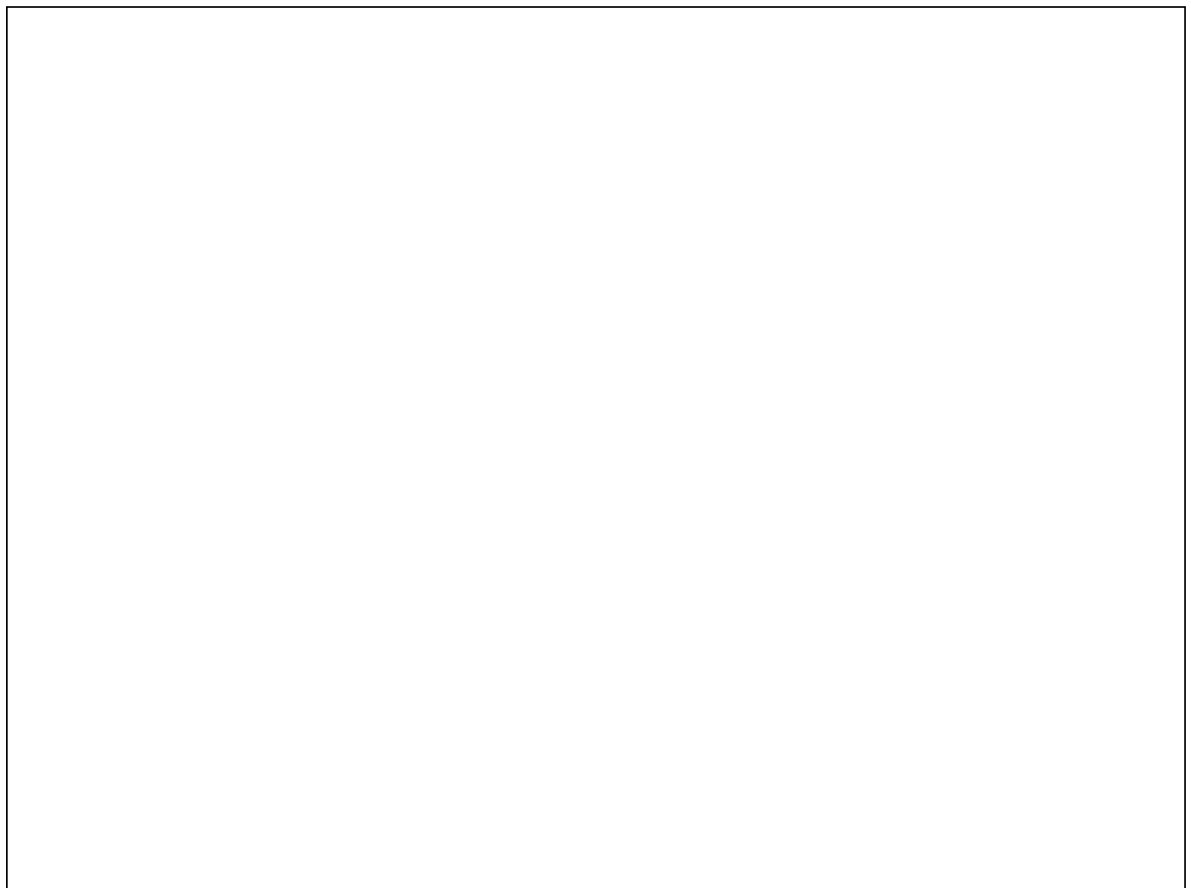
Right click and click “Field Settings” in the menu.

Choose the appropriate computation.

Click “OK”.

The screenshot shows two views of an Excel pivot table. The left view shows a pivot table with columns for 'COLLEGE' (ADP, TRAD) and 'Grand Total', and rows for 'Count of SAT MATH' and 'Total'. A right-click context menu is open over the 'Total' cell for 'ADP', with 'Field Settings...' selected. The right view shows the 'PivotTable Field' task pane with 'Source field: SAT MATH' and 'Name: Average of SAT MATH'. Under 'Summarize by', 'Average' is selected in the list.

Count of SAT MATH	COLLEGE	Grand Total
	ADP	TRAD
Total	17	581



**The completed report
will look like this.**

BAC Fact Sheet

Opening Fall Enrollment

Fall 2007

Total Student Body			
	<i>Traditional Students</i>	<i>Adult Students</i>	<i>Total</i>
Enrollment	718	619	1337
Full-time Equivalent	715.75	573.75	1289.5
<i>New Admissions</i>			
First-time First-year	206	4	210
New Transfers	61	199	260
Old Returns	6	7	13
Post-Baccalaureate		1	1
Non-degree	0	5	5
Total	273	216	489
<i>Course Load</i>			
Full-time	713	522	1235
Part-time	5	97	102
<i>Gender</i>			
Males	365	151	516
Females	353	468	821
<i>Ethnicity</i>			
Non-resident Alien	35	4	39
Am. Ind./ Alaskan	3	2	5
Asian / Pacific	9	4	13
Black, non-Hispanic	46	235	281
Hispanic	43	17	60
White, non-Hispanic	501	342	843
Not declared	81	15	96
<i>Permanent Residence</i>			
In-state	302	598	900
Gaston County	84	328	412
Mecklenburg	61	191	252
Out-of-state	416	21	437
Non-resident Alien	35	4	39
<i>Campus Residence</i>			
Boarder	578		578
Commuter	140	615	755
<i>Self-Identified Catholics</i>			
Boarders	325		325
Commuters	36	71	107
Total	361	71	432

First-time First-year Students	
Total	210
% of Total Enrollment	16%
<i>HSGPA</i>	
Mean	3.09
<i>SAT Scores (Direct or Converted ACT)</i>	
Mean Verbal	513
Mean Math	505
Mean Total	1018
<i>Permanent Residence</i>	
Florida	19
Georgia	17
Maryland	12
New York	14
North Carolina	76
South Carolina	13
Virginia	17
Other States	37
Non-resident Alien	5
Faculty	
Total	
Full-time contract	54
Reduced Load contract	2
Part-time contract	65
FTE Student/ FTE Faculty	16 : 1
Tenure Status	
Tenured	35
Tenure Track	6
Degree Status Full-time	
Doctorate	41
First Professional/ Other terminal	1
Masters	12

Updating the Report

To update a report you must first replace the data in the data sheet with the new data. Note: It's important that the Column labels remain the same as with the original data. In addition, be sure that all the old data has been removed.

Microsoft Excel - FACT SHEET F 2007-NCAIR sample

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P32 GAST

1	Year	ID #	ST	Residence	REL	M/F	D/B	POPULATION	SAT MATH	SAT VERBAL	SAT TOTAL	HSGPA	PROG	ETHNICITY	CLASS	CO
2	Fall 2008	1	NC	IN STATE	UNKN	F	C	TRAN				3.24	ADP	NORESP	FRSH	G
3		2	NC	IN STATE	UNKN	F	C	TRAN				2.85	ADP	WHITE	JUNR	G
4		3	NC	IN STATE	UNKN	F	C	TRAN				3.19	ADP	WHITE	JUNR	G
5		4	VA	OUTOFSTATE	CATH	F	R		480	520	1000	3.14	TRAD	WHITE	FRSH	G
6		5	NC	IN STATE	BAPT	F	C	TRAN				2.00	ADP	BLACK	SOPH	G
7		6	NC	IN STATE	UNKN	F	C	TRAN					ADP	BLACK	SOPH	G
8		7	NC	IN STATE	UNKN	F	C	TRAN				2.68	ADP	BLACK	FRSH	M
9		8	NC	IN STATE	UNKN	M	C	TRAN				2.76	ADP	WHITE	SENR	G
10		9	NC	IN STATE	BAPT	F	C	TRAN				2.90	ADP	BLACK	JUNR	G
11		10	NC	IN STATE	UNKN	F	C	TRAN				3.50	ADP	BLACK	FRSH	G
12		11	NC	IN STATE	CATH	F	C		390	420	810		ADP	HISP	SENR	G
13		12	VA	OUTOFSTATE	BAPT	M	R	TRAN				2.78	TRAD	BLACK	SENR	G
14		13	NC	IN STATE	UNKN	M	R		460	350	810	2.26	TRAD	NORESP	FRSH	M
15		14	NC	IN STATE	UNKN	F	C	TRAN					ADP	WHITE	JUNR	G
16		15	NC	IN STATE	ISLM	M	C					3.92	TRAD	NONRES	FRSH	M
17		16	NC	IN STATE	BAPT	F	C	TRAN				4.00	ADP	WHITE	SENR	G
18		17	NC	IN STATE	UNKN	M	R	TRAN	660	610	1270		TRAD	NORESP	JUNR	M
19		18	NC	IN STATE	PRES	M	C		550	750	1300	3.07	TRAD	WHITE	FRSH	M
20		19	NC	IN STATE	UNKN	F	C	TRAN				3.11	ADP	BLACK	FRSH	M
21		20	NC	IN STATE	UNKN	F	C	TRAN					ADP	WHITE	SENR	G

Go to the pivot table sheet and click on the first pivot table.

Click the refresh button on the Pivot Table toolbar.

File Edit View Insert Format Tools Data Window Help Duplicate Adobe PDF

B7

	A	B	C	D	E	F	G
1		Drop Page Fields Here					
2							
3	Count of ID #	PT-FT					
4	COLLEGE	FT	PT	(blank)	Grand total		
5	ADP	577	108		685		
6	TRAD	762	6		768		
7	(blank)						
8	Grand Total	1339	114		1453		
9							
10							
11							
12							
13							
14	Sum of FTE	COLLEGE					
15	FTE	ADP	TRAD	(blank)	Grand Total		
16		0.25	5.5	0.25	5.75		
17		0.5	25	1.5	26.5		

PivotTable

PivotTable

**The new data will
appear in the report.**

BAC Fact Sheet

Opening Fall Enrollment

Fall 2008

Total Student Body			
	<i>Traditional Students</i>	<i>Adult Students</i>	<i>Total</i>
Enrollment	768	685	1453
Full-time Equivalent	765.25	634.5	1399.75
<i>New Admissions</i>			
First-time First-year	220	5	225
New Transfers	64	218	282
Old Returns	7	8	15
Post-Baccalaureate		1	1
Non-degree	0	6	6
Total	291	238	529
<i>Course Load</i>			
Full-time	762	577	1339
Part-time	6	108	114
<i>Gender</i>			
Males	396	167	563
Females	372	518	890
<i>Ethnicity</i>			
Non-resident Alien	38	5	43
Am. Ind./ Alaskan	3	2	5
Asian / Pacific	11	4	15
Black, non-Hispanic	52	260	312
Hispanic	46	19	65
White, non-Hispanic	529	379	908
Not declared	89	16	105
<i>Permanent Residence</i>			
In-state	326	662	988
Gaston County	91	368	459
Mecklenburg	68	207	275
Out-of-state	442	23	465
Non-resident Alien	38	5	43
<i>Campus Residence</i>			
Boarder	615	—	615
Commuter	153	615	768
<i>Self-Identified Catholics</i>			
Boarders	325	—	325
Commuters	43	79	122
Total	368	79	447

First-time First-year Students	
Total	225
% of Total Enrollment	16%
<i>HSGPA</i>	
Mean	3.09
<i>SAT Scores (Direct or Converted ACT)</i>	
Mean Verbal	512
Mean Math	505
Mean Total	1017
<i>Permanent Residence</i>	
Florida	20
Georgia	19
Maryland	12
New York	14
North Carolina	83
South Carolina	15
Virginia	18
Other States	38
Non-resident Alien	6
Faculty	
Total	
Full-time contract	57
Reduced Load contract	2
Part-time contract	83
FTE Student/ FTE Faculty	17 : 1
Tenure Status	
Tenured	38
Tenure Track	6
Degree Status Full-time	
Doctorate	44
First Professional/ Other terminal	1
Masters	12