

Fun with Excel—Cool tips and Tricks

TAIR Conference, 2013

Lisa Haynes and Tracy Stegmair, presenters

Texas Woman's University

Cool Excel formulae!

- To calculate someone's age, use DOB and today's date (or Census Date, for example):

=DAYS360(A2,B2)/360

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I	J
1	Birthdate	Census Date	Age							
2	4/27/1994	9/15/2012	18							
3	8/27/1994	9/16/2012	18							
4	11/20/1996	9/17/2012	16							
5	11/20/1996	9/18/2012	16							
6	2/4/1994	9/19/2012	19							

The formula bar shows the formula for cell C2: `=DAYS360(A2,B2)/360`.

- Shortcut: today's date "<Ctrl>;"

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I	J
1	Birthdate	Today's Date	Age							
2	4/27/1994	2/8/2013	19							
3	8/27/1994	2/9/2013	18							
4	11/20/1996	2/10/2013	16							
5	11/20/1996	2/11/2013	16							
6	2/4/1994	2/12/2013	19							

The formula bar shows the formula for cell B2: `2/8/2013`.

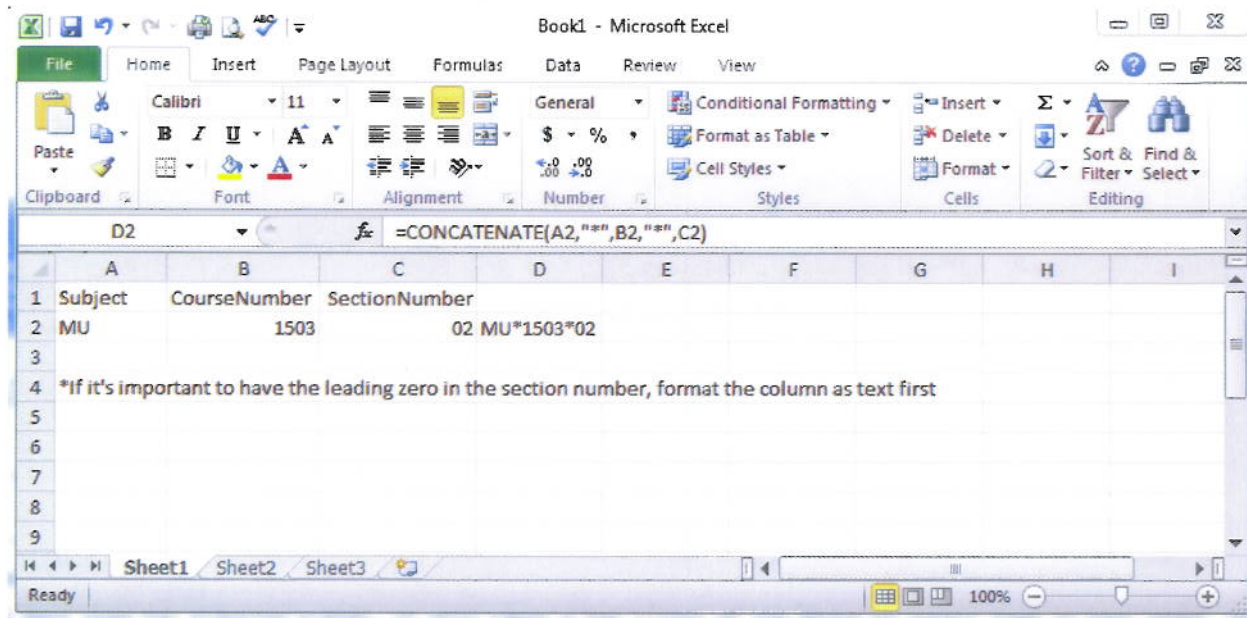
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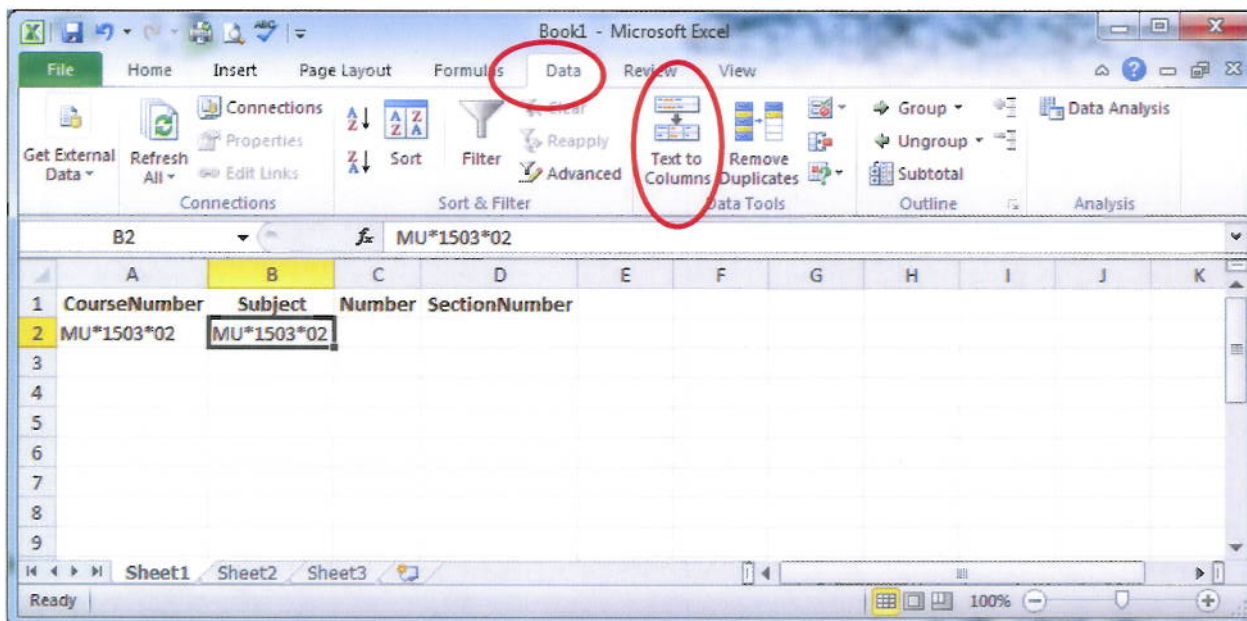
- To concatenate course number and section number here is formula: `=CONCATENATE(A2,"*",B2,"*",C2)`



- Text to Columns

For this example, copy cell A2 to B2.

Highlight the B2 cell. Click on the Data tab. Click on Text To Columns. In this example, click on Delimited data type. Click Next.

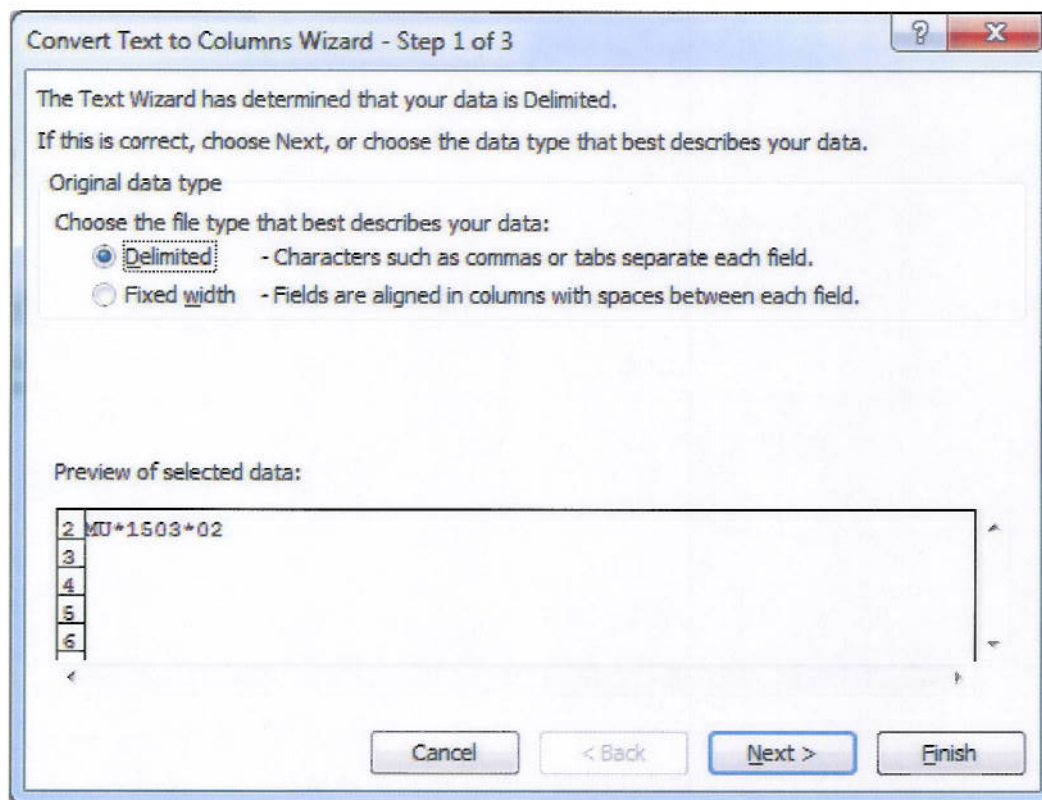


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Convert Text to Columns Wizard - Step 1 of 3

The Text Wizard has determined that your data is Delimited.
If this is correct, choose Next, or choose the data type that best describes your data.

Original data type

Choose the file type that best describes your data:

☒ Delimited - Characters such as commas or tabs separate each field.

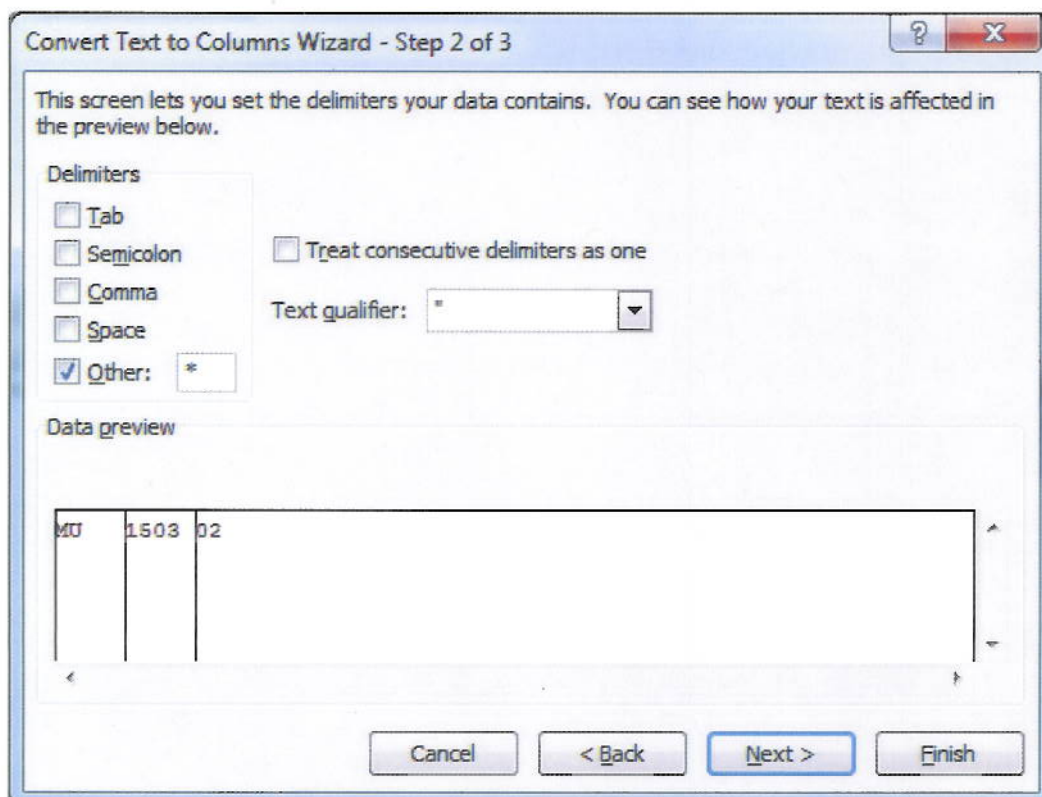
☐ Fixed width - Fields are aligned in columns with spaces between each field.

Preview of selected data:

2	MU*1503*02
3	
4	
5	
6	

Buttons: Cancel, < Back, Next >, Finish

On the next step, clear any delimiters that appear and select Other, placing an asterisk (for this example) in the box. Click Finish.



Convert Text to Columns Wizard - Step 2 of 3

This screen lets you set the delimiters your data contains. You can see how your text is affected in the preview below.

Delimiters

☐ Tab

☐ Semicolon

☐ Comma

☐ Space

☒ Other: *

☐ Treat consecutive delimiters as one

Text qualifier: " " ▾

Data preview

MU	1503	02
----	------	----

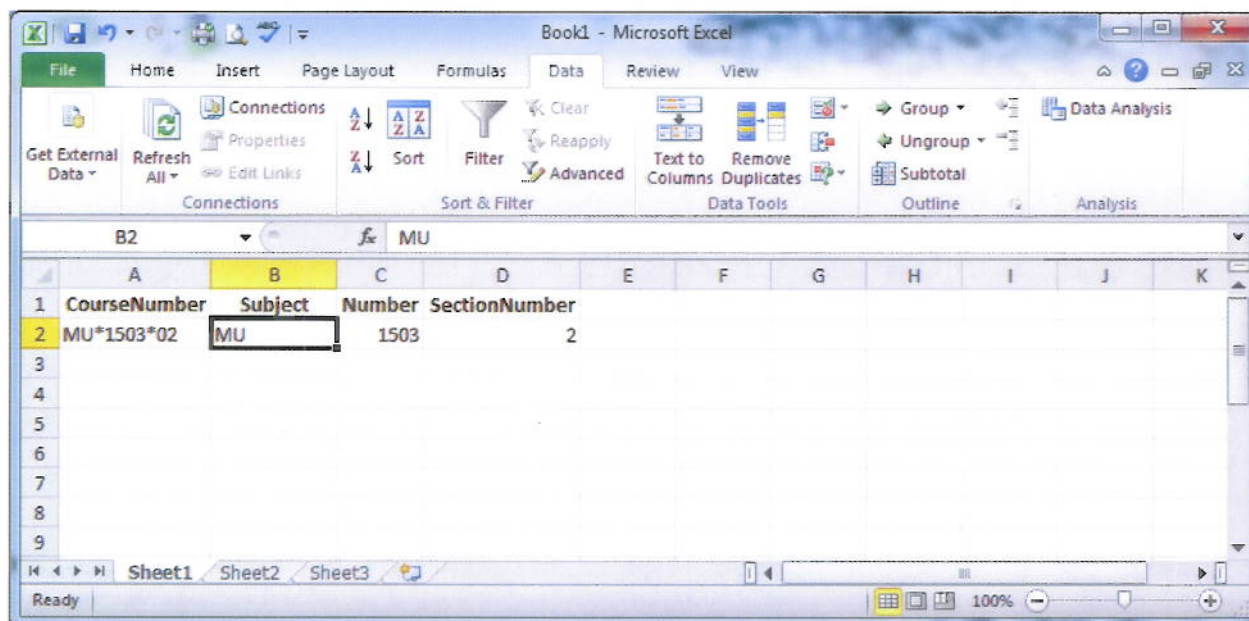
Buttons: Cancel, < Back, Next >, Finish

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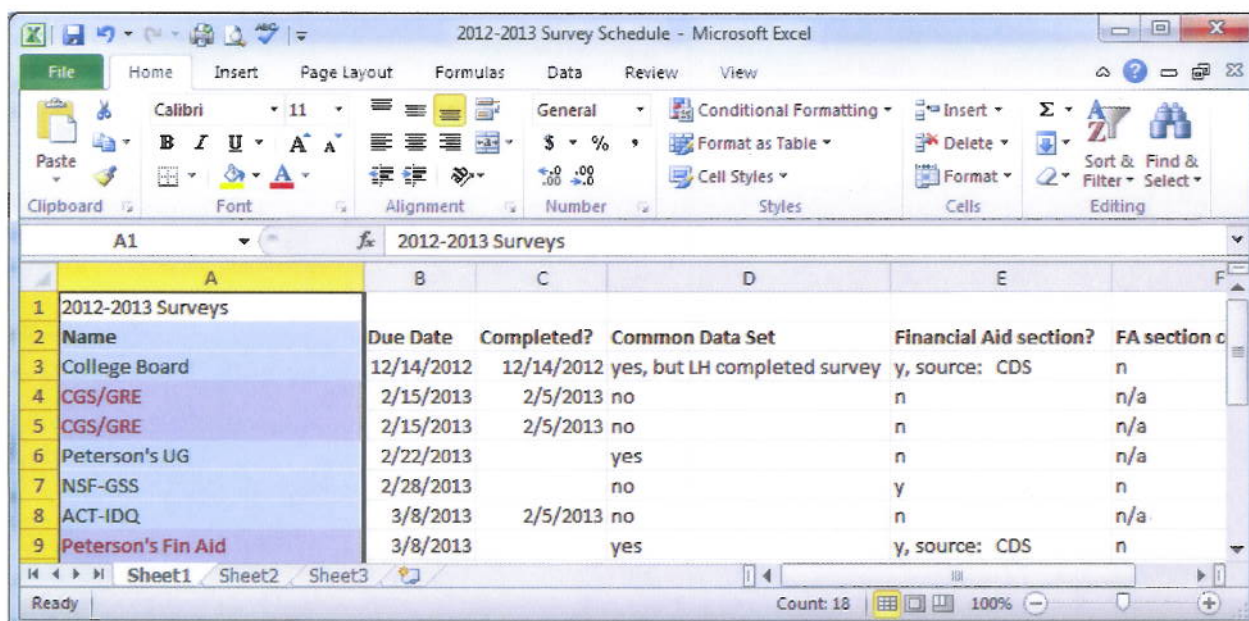
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- **To find duplicate values without removing them:**

1. Highlight (for example) 1 column.
2. Go to HOME tab
3. Select CONDITIONAL FORMATTING drop down menu
4. Select HIGHLIGHT CELLS RULES
5. Select DUPLICATE VALUES
6. From there you will be given the option of DUPLICATE or UNIQUE VALUES, and the choice of color for the highlighting.



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- **Sparklines**

Sparklines (Excel 2010) are best used for tracking trends. It only takes a few clicks of the mouse to insert them in your sheet. Below are the instructions and one visual example to show how the Sparklines look when applied to data:

1. Open your file in Excel 2010 (Excel 2010 will recognize older versions, and you might need to save your data to a new format [.xlsx], especially if it is "Excel 97-2003 Workbook").
2. Select the cell where you would like your Sparkline to be displayed.
3. Click Insert tab, and then, from the Sparkline menu choose your Line/Column/Win Loss display.
4. Select your range of data.
5. Once your Sparkline is inserted, the Design tab opens and you will find a few more options for accessorizing your graph.

Institution Name	1999-2000	2000-01	2001-02	2002-03	2003-04	
UNIVERSITY OF FLORIDA	516	856	607	241	924	
PURDUE UNIVERSITY	468	464	409	463	446	
FLORIDA STATE UNIVERSITY	263	252	-25	290	271	
OHIO STATE UNIVERSITY	431	58	465	153	22	
THE UNIVERSITY OF TEXAS	659	933	639	674	202	

Of course, for detailed graphs, you might still want to design your own chart with all the details you want. Overall, it is good that Microsoft is beginning to include data visualization applications in their basic software package without extra charges, and I also think it is good that the 3D Pie Chart is not an option in the "Sparkline" tab.

- **View Two or More Worksheets at the same time**

<http://office.microsoft.com/en-us/excel-help/view-two-or-more-worksheets-at-the-same-time-HP001217043.aspx>

Using this link will give you instructions of opening two worksheets side by side, viewing two worksheets of different workbooks side by side, and viewing multiple worksheets at the same time.

View two worksheets in the same workbook side by side

1. On the View tab, in the Window group, click New Window.



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2. On the View tab, in the Window group, click View Side by Side .
3. In the workbook window, click the worksheets that you want to compare.
4. To scroll both worksheets at the same time, click Synchronous Scrolling  in the Window group on the View tab.

Note This option is available only when View Side by Side is turned on.



The screenshot shows the Microsoft Excel interface with the View tab selected. In the Window group, the 'View Side by Side' button is highlighted. Below it, the 'Synchronous Scrolling' button is also visible. The ribbon includes other options like Split, Hide, Reset Window Position, Save Workspace, Switch Windows, and Macros.

Below the ribbon, two worksheets are displayed side-by-side. The top worksheet is 'FT DS FTIC MULTIRACIAL2' and the bottom is 'FT DS FTIC MULTIRACIAL1'. Both worksheets contain student data with columns for ID, Name, Term, FA, SCH, MAJOR, PROGRAM, LEV, STU, GEN, VISA, ARCHIVED, New Race, ETHNIC, R1, R2, R3, R4, R5, R6, R7, 12/FA, and a final column with status information.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1	STU ID	NAME	TERM	FA	SCH	MAJOR	PROGRAM	LEV	STU	GEN	VISA	ARCHIVED	New Race	ETHNIC	R1	R2	R3	R4	R5	R6	R7	12/FA
2	615533	Petty, Karrie	11/FA	12	55230	NURSENTRY.BS	UD	1	F				5 Multi	NHS	AN	WH						615533
3	945011	Russell, Shaniqua	11/FA	15	12030	PSYCHENTRY.BS	UD	1	F				2 Multi	NHS	AN	BL						945011
4	945034	Terrell, Ashley	11/FA	13	10404	BUSACCT.BBA	UD	1	F				2 Multi	NHS	BL	AN						945034
5	946055	Rafiqi, Nicole	11/FA	13	45024	NUTRITION.BS	UD	1	F				4 Multi	NHS	AS	WH						946055
6	951416	Librando, Mary	11/FA	14	55230	NURSENTRY.BS	UD	OO	F				4 Multi	NHS	AS	HP						951416
7	959750	Johnson, Sharon	11/FA	15	44004	COMMSCL.BS	UD	1	F				1 Multi	NHS	WH	BL						959750
8	967114	Gourdin, Jazzmin	11/FA	15	11832	MUSIC THERAPY.BS	UD	1	F				4 Multi	NHS	AS	BL						967114
9	969025	Chery, Mieke	11/FA	14	55230	NURSENTRY.BS	UD	1	F				2 Multi	NHS	AS	BL	WH					969025
10	973712	Vaughan, Amber	11/FA	16	55230	NURSENTRY.BS	UD	1	F				4 Multi	NHS	AS	WH						973712
11	976115	Lo, Jenny	11/FA	14	10604	CHEMISTRY.BS	UD	1	F				4 Multi	NHS	HP	AS						976115
12	976187	Parcon, Camille	11/FA	14	55230	NURSENTRY.BS	UD	1	F				4 Multi	NHS	HP	AS						976187
13	976296	Kilburn, Amanda	11/FA	14	55230	NURSENTRY.BS	UD	1	F				4 Multi	NHS	AS	WH						976296

The bottom worksheet, 'FT DS FTIC MULTIRACIAL1', contains a similar table with student data, including columns for ID, Name, Term, FA, SCH, MAJOR, PROGRAM, LEV, STU, GEN, VISA, ARCHIVED, New Race, ETHNIC, R1, R2, R3, R4, R5, R6, R7, 12/FA, and a final column with status information.

Filtering data

IPEDS data file - Microsoft Excel

Select the row containing column headers.

Click on Sort & Filter. Select Filter.

Filter (Ctrl+Shift+L)

Enable filtering of the selected cells.

Once filtering is turned on, click the arrow in the column header to choose a filter for the column.

Press F1 for more help.

UnitID	Institution Name	City location of institution (HD2009)	State abbreviation (HD2009)	Grand total (EF2009 All students)	Total men (EF2009 All students)	Total women (EF2009 All students)
126182	Adams State College	Alamosa	CO	4473	1442	3031
100654	Alabama A & M University	Normal	AL	3334	1055	2279
100724	Alabama State University	Montgomery	AL	6387	2809	3578
138716	Albany State University	Albany	GA	16968	7835	9133
175342	Alcorn State University	Alcorn State	MS	12156	4820	7336
222831	Angelo State University	San Angelo	TX			
197869	Appalachian State University	Boone	NC			
106458	Arkansas State University-Main Campus	Jonesboro	AR			

IPEDS data file - Microsoft Excel

Filters are now shown for every column.

Clicking on the filter for a variable opens the filter menu which lists all values occurring with the column.

To filter data, select the values you wish to filter for and click OK.

UnitID	Institution Name	City location of institution (HD2009)	State abbreviation (HD2009)	Grand total (EF2009 All students)	Total men (EF2009 All students)	Total women (EF2009 All students)
126182	Adams State College	Alamosa	CO	3121	1272	1849
100654	Alabama A & M University	Normal	AL	5327	2413	2914
100724	Alabama State University	Montgomery	AL	5564	2108	3456
138716	Albany State University	Albany	GA	4473	1442	3031
175342	Alcorn State University	Alcorn State	MS	3334	1055	2279
222831	Angelo State University	San Angelo	TX	6387	2809	3578
197869	Appalachian State University	Boone	NC	16968	7835	9133
106458	Arkansas State University-Main Campus	Jonesboro	AR	12156	4820	7336
106467	Arkansas Tech University	Fayetteville	AR	8814	4066	4748
138789	Armstrong Atlantic State University	Savannah	GA	7538	2532	5006
100830	Auburn University	Opelika	AL			
138983	Augusta State University	Augusta	GA			
219602	Austin Peay State University	Cincinnati	OH			
173124	Bemidji State University	Bemidji	MN			
211158	Bloomsburg University	Bloomsburg	PA			
142115	Boise State University	Boise	ID			
162007	Bowie State University	Bowie	MD			
165024	Bridgewater State College	Bridgewater	MA			
110422	California Polytechnic State University-San Luis Obispo	San Luis Obispo	CA			
110630	California State Polytechnic University-Pomona	Pomona	CA			

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Filtered Data, cont'd.

	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	Ethnic	Degr	Level Of Degr	CIP	Maj	Semester Graduated	Graduation Date	Camp	Basis for Admission	Start Term	Start Date	Time to Degree	Att S	Comp SCI	GP	PE	Maj	Maj	Maj	Maj	Maj	Maj	Maj
65	1 BGS	2	24010200	10102	74	Aug-07	1	5 05/SP	Jan-05	2.6	137	136	2.96										
66	1 BGS	2	24010200	10102	74	Aug-07	1	5 05/SP	Jan-05	2.6	144	144	3.34										
67	2 BGS	2	24010200	10102	74	Aug-07	1	5 05/SP	Jan-05	2.6	127	127	3.17										
68	5 BGS	2	24010200	10102	74	Aug-07	1	5 05/SP	Jan-05	2.6	136	130	3.10										
69	6 BGS	2	24010200	10102	72	May-07	1	5 04/FA	Sep-04	2.7	126	126	3.14										
70	2 BGS	2	24010200	10102	72	May-07	1	5 04/FA	Sep-04	2.7	125	125	3.62										
71	1 BGS	2	24010200	10102	72	May-07	1	5 04/FA	Sep-04	2.7	124	124	3.38										
72	1 BGS	2	24010200	10102	74	Aug-07	1	5 04/FA	Sep-04	2.9	170	170	3.74										
73	2 BGS	2	24010200	10102	74	Aug-07	1	5 04/FA	Sep-04	2.9	134	134	2.52										
74	1 BGS	2	24010200	10102	71	Dec-06	1	5 04/SP	Jan-04	2.9	125	124	2.72										
75	1 BGS	2	24010200	10102	74	Aug-07	1	5 04/SP	Jan-04	3.2	126	126	3.93										
76	1 BGS	2	24010200	10102	72	May-07	1	5 04/SP	Jan-04	3.3	142	133	2.38										
77	6 BGS	2	24010200	10102	72	May-07	1	5 04/SP	Jan-04	3.3	181	177	3.06										
78	1 BGS	2	24010200	10102	71	Dec-06	1	5 03/SP	Jan-03	3.5	130	130	2.87										
79	1 BGS	2	24010200	10102	71	Dec-06	1	5 03/SP	Jan-03	3.5	162	156	2.44										
80	1 BGS	2	24010200	10102	72	May-07	1	5 03/FA	Sep-03	3.7	124	124	3.03										
81	1 BGS	2	24010200	10102	72	May-07	1	5 03/FA	Sep-03	3.7	124	124	3.19										
82	1 BGS	2	24010200	10102	72	May-07	1	5 03/FA	Sep-03	3.7	130	127	2.95										
83	1 BGS	2	24010200	10102	71	Dec-06	1	5 03/SP	Jan-03	3.9	126	126	3.40										
84	1 BGS	2	24010200	10102	71	Dec-06	1	5 03/SP	Jan-03	3.9	146	146	3.67										
85	1 BGS	2	24010200	10102	71	Dec-06	1	5 03/SP	Jan-03	3.9	176	169	3.20										
86	1 BGS	2	24010200	10102	71	Dec-06	1	5 02/FA	Sep-02	4.3	124	124	3.29										
87	1 BGS	2	24010200	10102	74	Aug-07	1	5 03/SP	Jan-03	4.6	128	125	3.16										
88	1 BGS	2	24010200	10102	72	May-07	1	5 02/FA	Sep-02	4.7	131	125	2.71										
89	1 BGS	2	24010200	10102	72	May-07	1	5 02/FA	Sep-02	4.7	130	124	3.05										
90	2 BGS	2	24010200	10102	71	Dec-06	1	5 02/SP	Jan-02	4.9	188	188	3.21										
91	3 BGS	2	24010200	10102	74	Aug-07	1	5 02/SP	Jan-02	5.2	124	124	3.32										
92	1 BGS	2	24010200	10102	71	Dec-06	1	5 01/FA	Sep-01	5.3	124	124	3.17										
93	1 BGS	2	24010200	10102	72	May-07	1	5 02/SP	Jan-02	5.3	144	144	3.69										
94	3 BGS	2	24010200	10102	74	Aug-07	1	7 01/FA	Sep-01	5.9	149	149	2.52										
95	1 BGS	2	24010200	10102	71	Dec-06	1	7 01/SP	Jan-01	5.9	143	137	2.49										
96	1 BGS	2	24010200	10102	74	Aug-07	1	5 00/FA	Sep-00	6.9	126	126	3.71										
97	2 BGS	2	24010200	10102	71	Dec-06	1	1 99/FA	Sep-99	7.3	139	127	2.25										
1356																							
1357																							

Excel SUBTOTAL Function/Formula

The SUBTOTAL Function in Excel is used to perform a specified function on a range of **Auto filtered** cells. When the Auto Filter has been applied the SUBTOTAL function will only use the visible cells, all hidden rows are ignored. The operation performed is solely dependent on the number (between 1 and 11) that we supply to its first argument Function_num. For example;

=SUBTOTAL(1,A1:A100)

This will Average all visible cells in the range A1:A100 after an Auto Filter has been applied. If all rows in A1:A100 are visible it will simply Average them all and give the same result as =AVERAGE(A1:A100)

The number for the first SUBTOTAL argument, Function_num, and its corresponding function are as shown below:

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Function_Num/ Function

1 AVERAGE

2 COUNT

3 COUNTA

4 MAX

5 MIN

6 PRODUCT

7 STDEV

8 STDEVP

9 SUM

10 VAR

11 VARP

- **Finding Blanks and Copying the Data Above it (Go To Special)**

<http://www.extendoffice.com/documents/excel/771-excel-fill-blank-cells-with-value-above.html>

Following this link, you will find detailed instructions on how to fill blank cells with the value(s) from above. This is a real time-saving tip as you can see from the following video presentation!

<http://www.youtube.com/watch?v=9TDcVOKbm34>

- **Pivot Tables**

When Should You Use a Pivot Table?

Large data sets, ever-changing impromptu data requests, and multilayered reporting are absolute productivity killers if you have to tackle them by hand. Doing hand-to-hand combat with one of these tasks is not only time consuming, but it also opens the possibility of an untold number of errors in your analysis. So how do you recognize when to use a pivot table before it is too late?

Generally, a pivot table serves you well in any of the following situations:

- You need to find relationships and groupings within your data.
- You need to find a list of unique values for one field in your data.
- You need to find data trends using various time periods.
- You anticipate frequent requests for changes to your data analysis.
- You need to create subtotals that frequently include new additions.
- You need to organize your data into a format that is easy to chart.

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1. Highlight the cells in the spreadsheet you want to analyze.
2. On the Insert tab, click on Pivot Table. You want a new worksheet, so click OK.
3. Your new worksheet will open and now the fun begins.

The screenshot shows the Microsoft Excel interface with the 'Insert' tab selected. A 'Create PivotTable' dialog box is open, prompting the user to choose the data to analyze. The dialog box has two main sections: 'Choose the data that you want to analyze' and 'Choose where you want the PivotTable report to be placed'.

Choose the data that you want to analyze:

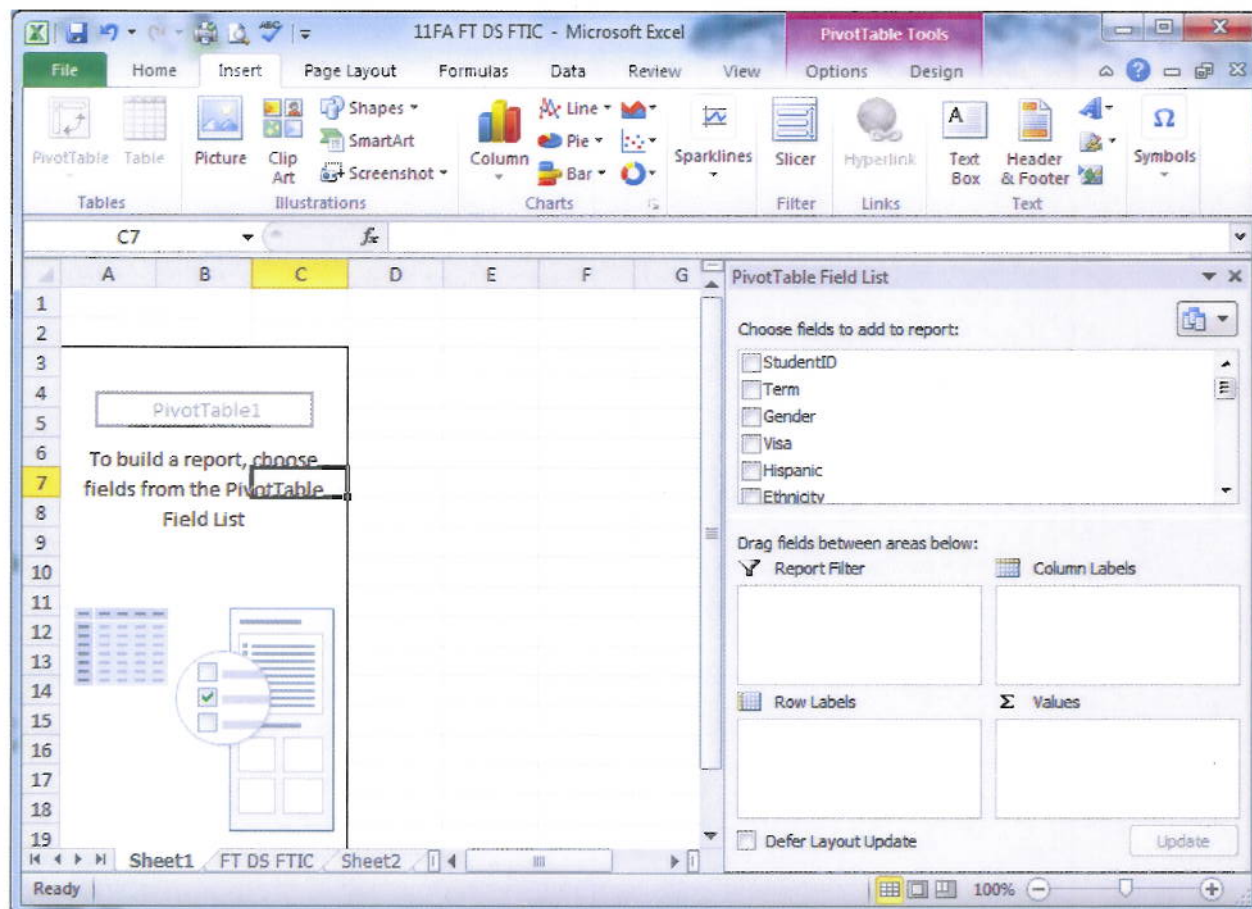
- ☒ Select a table or range: The table range is 'FT DS FTTC!\$A\$1:\$V\$1058'.
- ☐ Use an external data source: This option is not selected.

Choose where you want the PivotTable report to be placed:

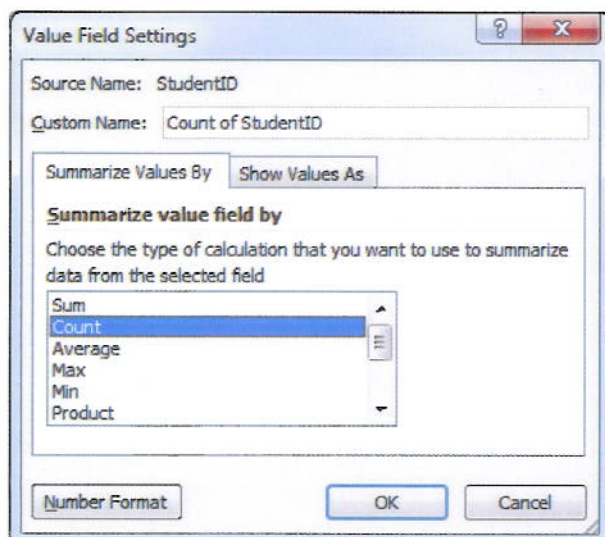
- ☒ New Worksheet: This option is selected.
- ☐ Existing Worksheet: This option is not selected.

The background spreadsheet contains student data with columns: StudentID, Term, Gender, Visa, Hispanic, Ethnicity, AGE, DOB, FA1_SCH, FA2_SCH, FA3_SCH, SCH, Classification, Residence, AdmitCode, Campus, Major, Major2, Deg, Deg2, TotalHoursEarned, GPA, and Level. The data spans from row 1 to row 1058.

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Suppose we want to know gender and ethnicity of full-time and part-time students. We will click and drag those fields to the column and row labels. We want counts, so we will select the student ID and drag it to the Values box and set the value to count and click Ok.



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We move the Gender variable to the Column Labels box and the Ethnicity variable to the Row Labels box. We want to look at full-time and part-time separately, so we will move the SCH variable to the Report Filter box.

The screenshot shows Microsoft Excel with a PivotTable and the PivotTable Field List task pane. The PivotTable is located in the range B3:M12. The PivotTable Field List task pane is on the right side of the screen. The PivotTable shows the count of StudentID for each combination of SCH, Gender, and Ethnicity. The PivotTable Field List task pane shows the following configuration:

- Report Filter: SCH
- Column Labels: Gender
- Row Labels: Ethnicity
- Values: Count of StudentID

The PivotTable data is as follows:

SCH	Gender	Grand Total
1	F	269
2	F	318
3	F	293
4	F	82
5	F	3
6	F	4
7	F	3
Grand Total	F	972

We can now filter for all semester credit hours of 12 and over for full-time or all semester credit hours of less than 12 for part-time.

Formula for this example: = VLOOKUP(A4,'Data 2'!A3:O267,13,0)

4. If seeking exact match, "0"

Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Developer Add-Ins Acrobat

Clipboard Font Alignment Number

IPEDS data file

3

Data file

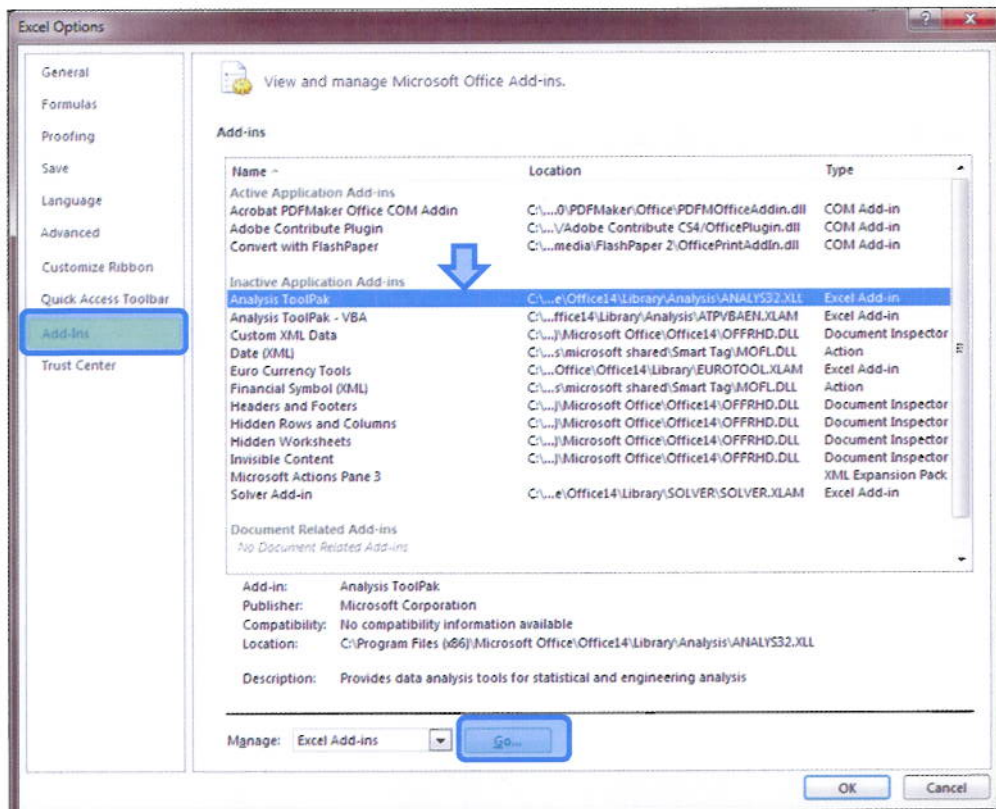
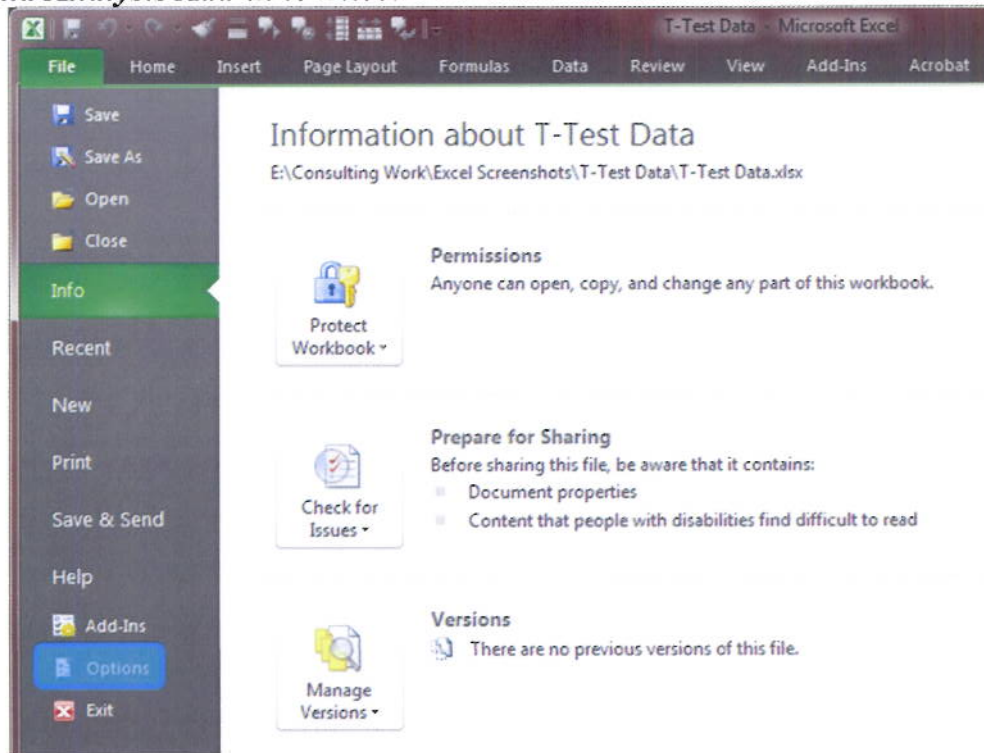
	A	B	C	D	E	F	G	H	I
			City location of institution (HD2009)	State abbreviation (HD2009)	Grand total (EF2009 All students total)	Total men students total	Total women All students total		
1	UnitID	Institution Name							
2	126182	Adams State College	Alamosa	CO	3121	1272	1849		
3	100654	Alabama A & M University	Normal	AL	5327	2413	2914		
4	100724	Alabama State University	Montgomery	AL	5564	2108	3456		
5	138716	Albany State University	Albany	GA	4473	1442	3031		
6	175342	Alcorn State University	Alcorn State	MS	3334	1055	2279		
7	222831	Angelo State University	San Angelo	TX	6387	2809	3578		
8	197869	Appalachian State University	Boone	NC	16968	7835	9133		
9	106458	Arkansas State University-Main	Jonesboro	AR	12156	4820	7336		

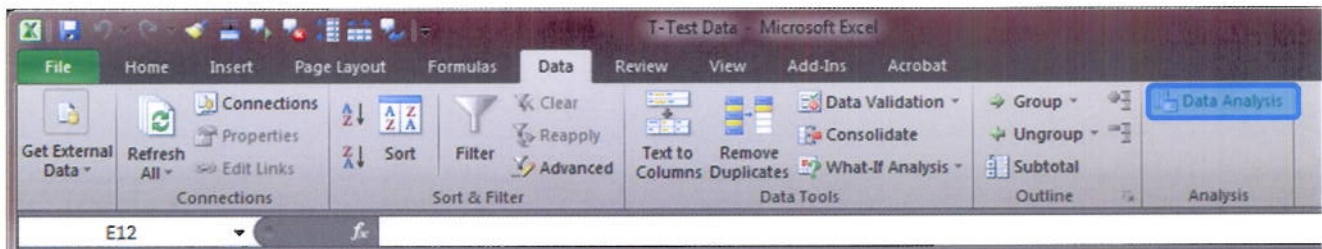
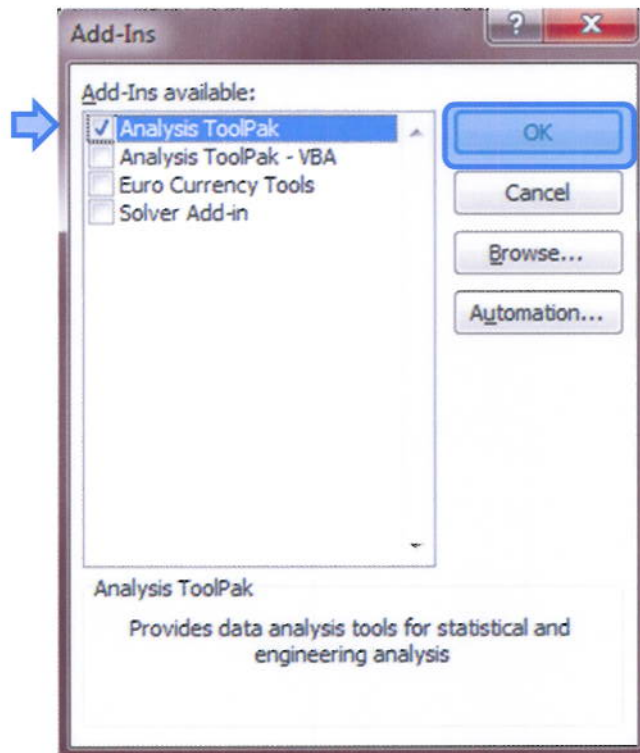
2

Data 2

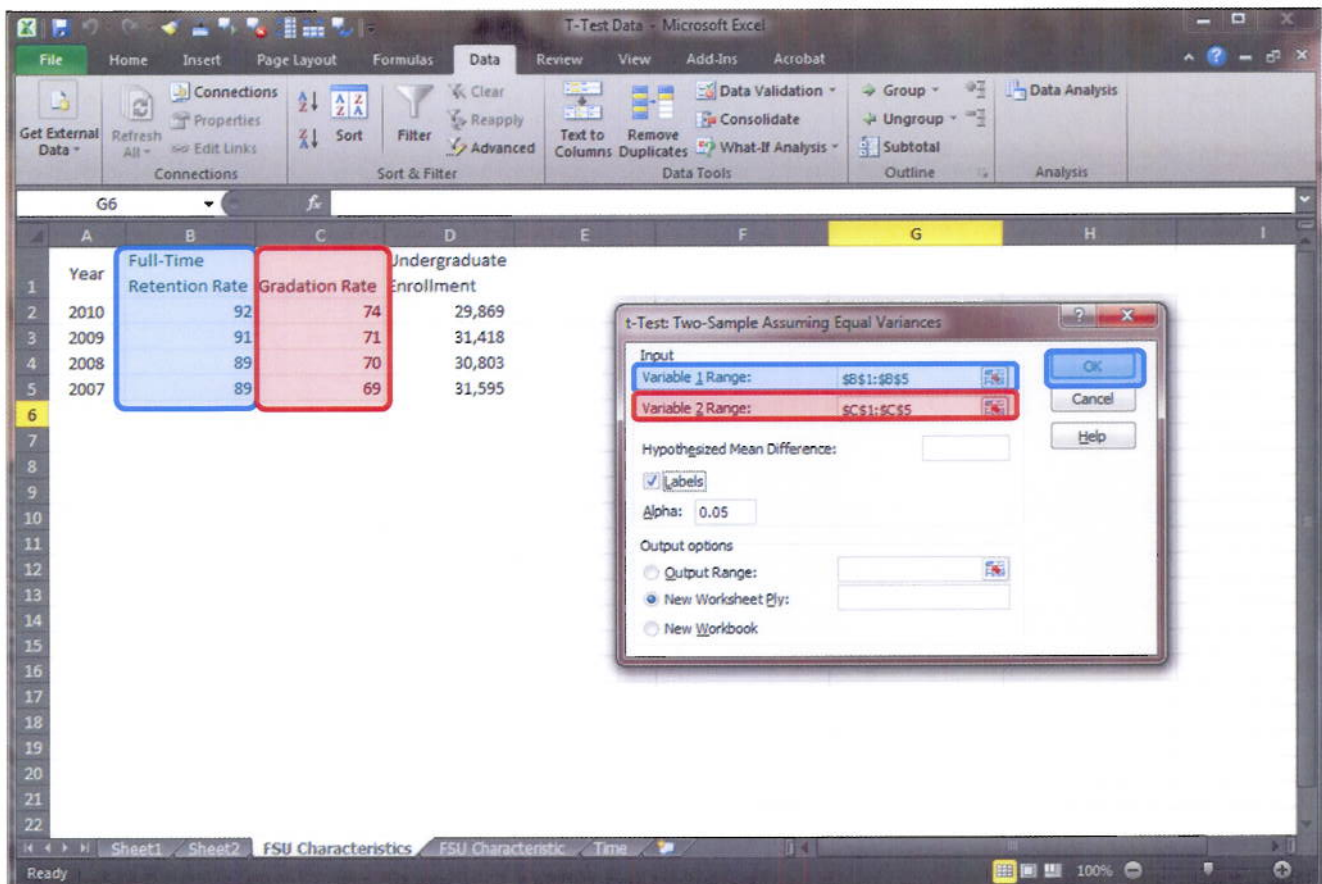
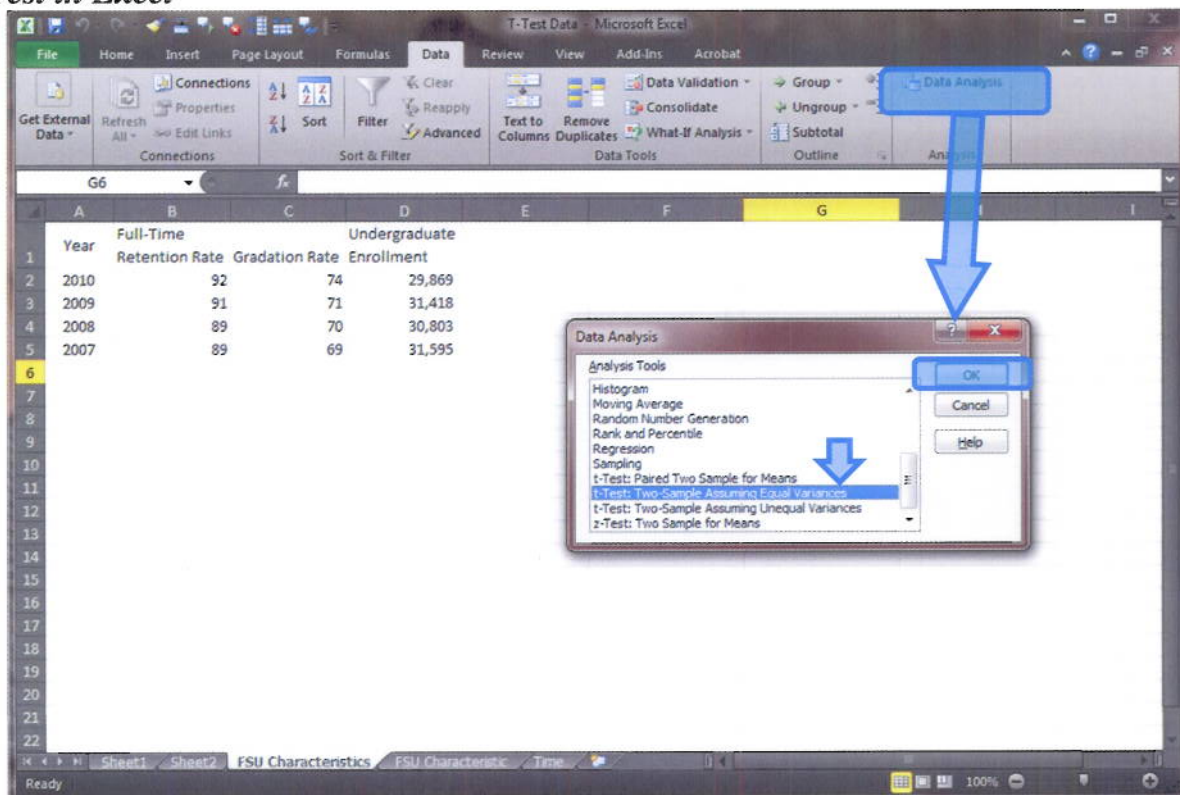
t-Test in Excel

Installing Data Analysis Add-in to Excel





t-Test in Excel



T-Test Data - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Add-Ins Acrobat

Clipboard Font Alignment Number Conditional Formatting Styles Cells Editing

D37

1 t-Test: Two-Sample Assuming Equal Variances

	Full-Time Retention Rate	Graduation Rate
Mean	90.25	71
Variance	2.25	4.666666667
Observations	4	4
Pooled Variance	3.458333333	
Hypothesized Mean Difference	0	
t Stat	14.63903019	
P(T<=t) one-tail	3.1894E-06	
t Critical one-tail	1.943180281	
P(T<=t) two-tail	6.37881E-06	
t Critical two-tail	2.446911851	

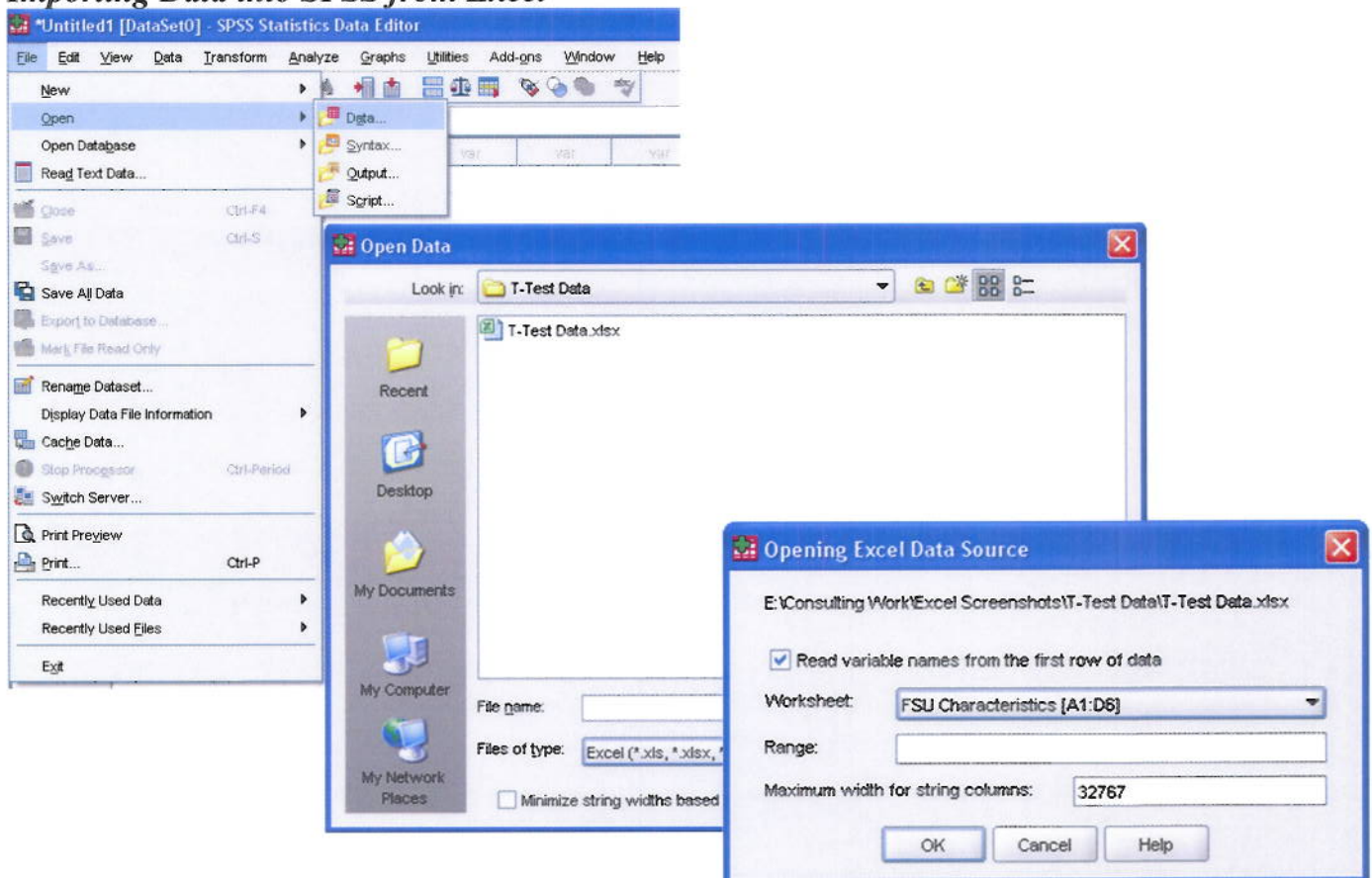
Sheet1 FSU Characteristics FSU Characteristic

Ready 100%

The columns need to be adjusted so the analysis can be displayed properly.

t-Test in SPSS

Importing Data into SPSS from Excel



T-Test of FSU Characteristics.sav [DataSet1] - SPSS Statistics Data Editor

File Edit View Data Transform Analyze Graphs Utilities Add-ons Window Help

1 : Year 2010.0 Visible: 4 of 4 Variables

	Year	FullTimeRetentionRate	GradationRate	UndergraduateEnrollment	V3T	V3T	V3T	V3T	V3T	V3T
1	2010	92	74	29869.0						
2	2009	91	71	31418.0						
3	2008	89	70	30803.0						
4	2007	89	69	31595.0						
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										

Data View Variable View

SPSS Statistics Processor is ready

t-Test Analysis

T-Test of FSU Characteristics.sav [DataSet1] - SPSS Statistics Data Editor

File Edit View Data Transform Analyze Graphs Utilities Add-ons Window Help

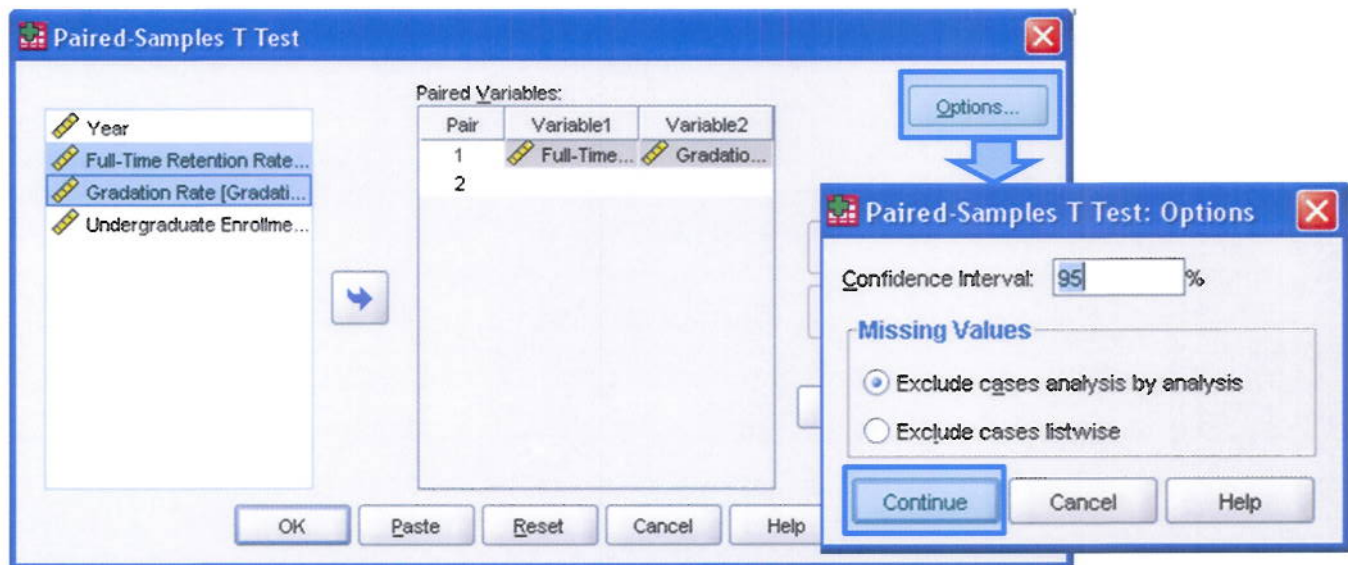
1 : Year 2010.0

	Year	FullTimeRetentionRate
1	2010	
2	2009	
3	2008	
4	2007	
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		

Analyze

- Reports
- Descriptive Statistics
- Compare Means
 - Means...
 - One-Sample T Test...
 - Independent-Samples T Test...
 - Paired-Samples T Test...**
 - One-Way ANOVA...
- General Linear Model
- Generalized Linear Models
- Mixed Models
- Correlate
- Regression
- Loglinear
- Classify
- Dimension Reduction
- Scale
- Nonparametric Tests
- Forecasting
- Survival
- Multiple Response
- Quality Control
- ☒ ROC Curve...

31595.0



Pasting as Syntax

The image shows the 'Syntax for T-Test of FSU Characteristics.sps - SPSS Statistics Syntax Editor' window. The syntax command is:


```

1 DATASET ACTIVATE DataSet1.
2 T-TEST PAIRS=FullTimeRetentionRate (PAIRED)
3 /CRITERIA=CI(95)
4 /MISSING=ANALYSIS
5
6
  
```

 The 'Run' menu is open, and the 'Selection' option (Ctrl-R) is highlighted. A right-click context menu is also visible, with 'Run Current' highlighted. A text box with instructions is overlaid on the bottom left of the syntax editor window.

There are three methods to run the syntax.
After highlighting the syntax:

1. Under "Run" in the toolbar, click "Selection"
2. Right click and click "Run Current"
3. "Ctrl+R"



T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Full-Time Retention Rate	90.25	4	1.500	.750
	Gradation Rate	71.00	4	2.160	1.080

Paired Samples Correlations

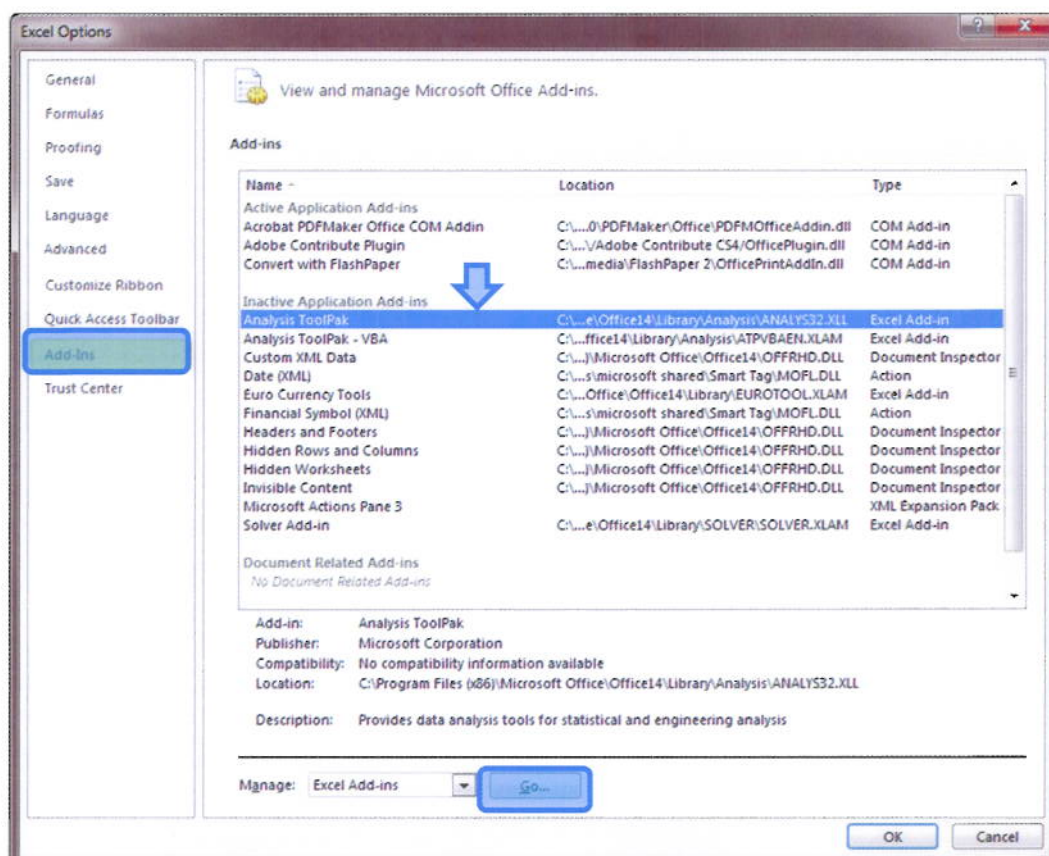
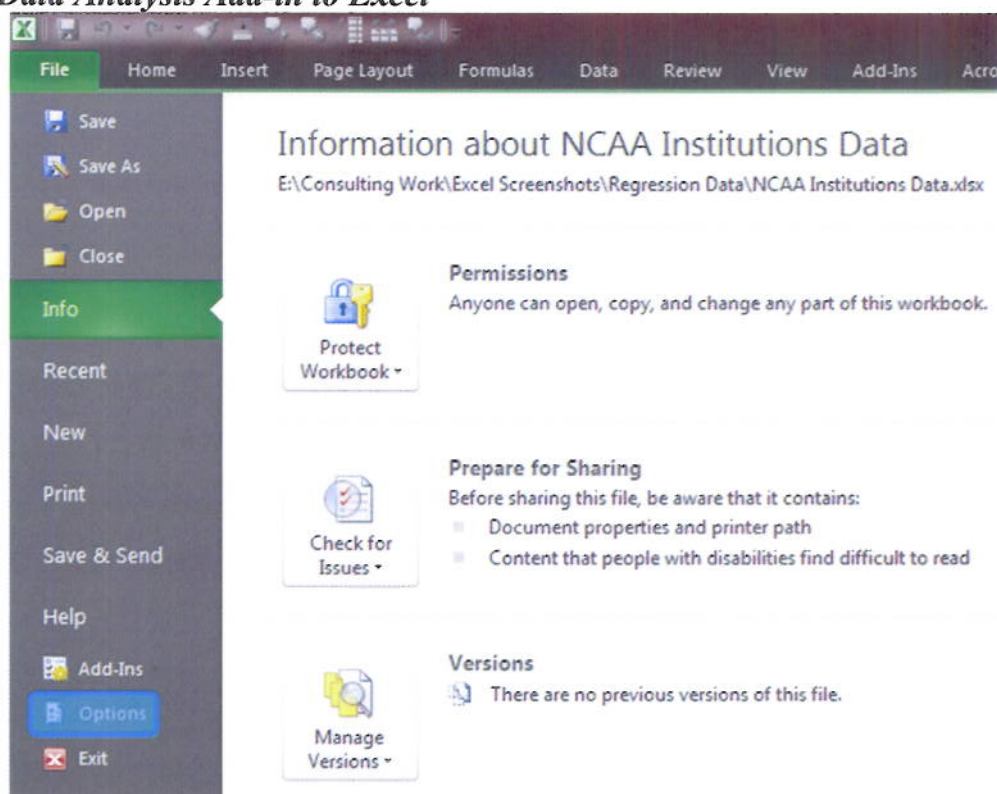
		N	Correlation	Sig.
Pair 1	Full-Time Retention Rate & Gradation Rate	4	.926	.074

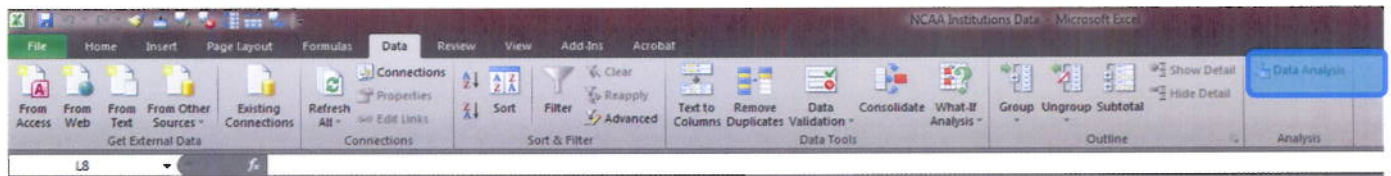
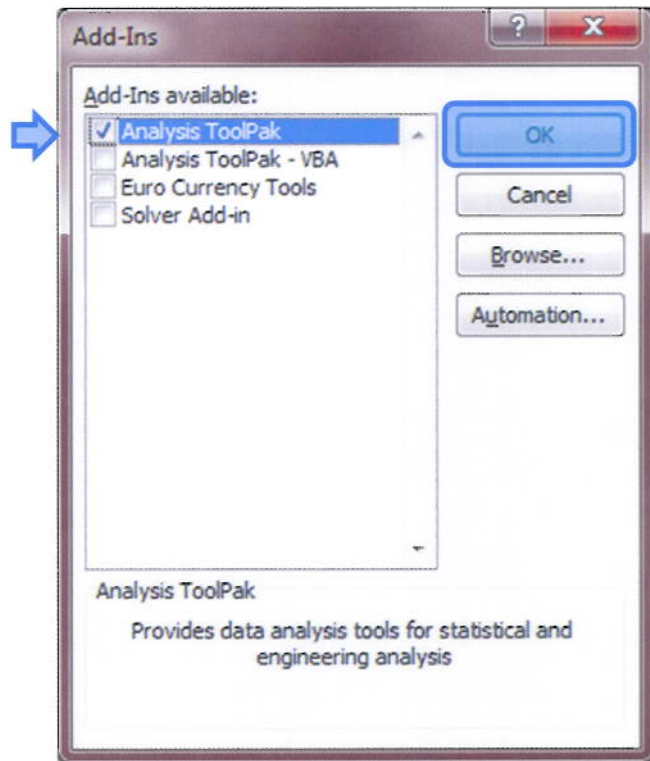
Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Full-Time Retention Rate - Gradation Rate	19.250	.957	.479	17.727	20.773	40.212	3	.000

Regression in Excel

Installing Data Analysis Add-in to Excel





Regression in Excel

NCAA Institutions Data - Microsoft Excel

UnitID	Institution Name	Undergraduate Enrollment	Full-Time Retention Rate 2010	Graduation Rate Total Cohort	Published In-State Tuition 2010-11	Published In-State Fees 2010-11
104151	Arizona State University	56562	84	59	7793	339
100858	Auburn University		87	66	7008	892
223232	Baylor University		82	71	26966	2918
164924	Boston College		96	91	39880	662
217882	Clemson University		89	76	11128	780
198419	Duke University		97	94	38985	1258
134097	Florida State University		92	74	2870	2368
139755	Georgia Institute of Technology-Main Campus		94	80	7070	1646
151351	Indiana University-Bloomington		90	71	8124	904
153603	Iowa State University		86	70	6102	895
155399	Kansas State University		81	59	6672	704
159391	Louisiana State University and Agricultural and Mechanical College		84	61	3968	1796
171100	Michigan State University		91	77	11152	0
176080	Mississippi State University		82	58	5461	0
199193	North Carolina State University at Raleigh		88	72	4853	1676
147767	Northwestern University		96	94	39840	383
204796	Ohio State University-Main Campus		93	78	8541	879
207388	Oklahoma State University-Main Campus		78	59	4103	2676
209542	Oregon State University		83	60	5760	1355
214777	Pennsylvania State University-Main Campus		92	85	14412	838
243780	Purdue University-Main Campus		88	68	8592	478
243744	Stanford University		98	95	38700	1472
228723	Texas A & M University		91	80	5297	3090
229115	Texas Tech University		82	63	4296	2674
100751	The University of Alabama		85	67	7900	0
221759	The University of Tennessee		86	60	6450	932
228778	The University of Texas at Austin		92	80	9418	0
104179	University of Arizona		77	60	7614	623
106397	University of Arkansas		83	58	5211	1557
110635	University of California-Berkeley		97	91	9402	1538
110662	University of California-Los Angeles		97	90	9402	1379
126614	University of Colorado Boulder		85	68	7018	1493
134130	University of Florida		96	84	3530	1514
139959	University of Georgia		94	81	7070	1666
145637	University of Illinois at Urbana-Champaign		94	84	10386	2710
153658	University of Iowa		86	70	6128	1289
155317	University of Kansas		79	61	7875	858
157085	University of Kentucky		82	59	7656	954
163286	University of Maryland-College Park		95	81	6763	1653
135726	University of Miami		90	80	36962	874
170976	University of Michigan-Ann Arbor		96	90	11648	189
174066	University of Minnesota-Twin Cities		89	70	9794	2494
176017	University of Mississippi Main Campus		83	59	5436	0
178396	University of Missouri-Columbia		84	69	7368	1133
181464	University of Nebraska-Lincoln		84	64	5948	1276

In order for the regression analysis to function properly, the dependent variable needs to be in the first column of variables.



NCAA Institutions Data - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Add-Ins Acrobat

Get External Data From Access From Web From Text From Other Sources Existing Connections Refresh All Edit Links Connections Sort Filter Advanced Text to Columns Remove Duplicates Data Validation Data Tools Consolidate What-If Analysis Group Ungroup Subtotal Outline Analysis

51

UnitID	Institution Name	Full-Time Retention Rate 2010	Undergraduate Enrollment	Graduation Rate Total Cohort	Published In-State Tuition 2010-11	Published In-State Fees 2010-11
104151	Arizona State University	84	56562	59	7793	339
100858	Auburn University	87	20221	66	7008	892
223232	Baylor University	89	15438	71	7666	2918
164924	Boston College					662
217882	Clemson University					780
198419	Duke University					1258
134097	Florida State University					2368
139755	Georgia Institute of Technology-Main Campus					1646
151351	Indiana University-Bloomington					904
153603	Iowa State University					895
155399	Kansas State University					704
159391	Louisiana State University and Agricultural & Mechanical College					1796
171100	Michigan State University					0
176080	Mississippi State University	82	15543	58	5461	0
199193	North Carolina State University at Raleigh	88	25247	72	4853	1676
147767	Northwestern University	96	9535	94	39840	383
204796	Ohio State University-Main Campus	93	42082	78	8541	879
207388	Oklahoma State University-Main Campus	78	18374	59	4103	2676
209542	Oregon State University	83	19557	60	5760	1355
214777	Pennsylvania State University-Main Campus	92	38594	85	14412	838
243780	Purdue University-Main Campus	88	32179	68	8592	478
243744	Stanford University	98	6940	95	38700	1472
228723	Texas A & M University	91	39148	80	5297	3090
229115	Texas Tech University	82	25462	63	4296	2674
100751	The University of Alabama	85	24882	67	7900	0
221759	The University of Tennessee	86	21392	60	6450	932
228778	The University of Texas at Austin	92	38420	80	9418	0
104179	University of Arizona	77	30592	60	7614	623
106397	University of Arkansas	83	17247	58	5211	1557
110635	University of California-Berkeley	97	25540	91	9402	1538
110662	University of California-Los Angeles	97	26162	90	9402	1379
126614	University of Colorado Boulder	85	26648	68	7018	1493
134130	University of Florida	96	32660	84	3530	1514
139959	University of Georgia	94	25947	81	7070	1666
145637	University of Illinois at Urbana-Champaign	94	31540	84	10386	2710
153658	University of Iowa	86	21176	70	6128	1289
155317	University of Kansas	79	20343	61	7875	858
157085	University of Kentucky	82	19927	59	7656	954
163286	University of Maryland-College Park	95	26922	81	6763	1653
135726	University of Miami	90	10368	80	36962	874
170976	University of Michigan-Ann Arbor	96	27027	90	11648	189
174066	University of Minnesota-Twin Cities	89	33607	70	9794	2494
176017	University of Mississippi Main Campus	83	14159	59	5436	0
178396	University of Missouri-Columbia	84	24834	69	7368	1133
181464	University of Nebraska-Lincoln	84	19383	64	5948	1276

Data Analysis

Analysis Tools

- Fourier Analysis
- Histogram
- Moving Average
- Random Number Generation
- Rank and Percentile
- Regression
- Sampling
- t-Test: Paired Two Sample for Means
- t-Test: Two-Sample Assuming Equal Variances
- t-Test: Two-Sample Assuming Unequal Variances

OK Cancel Help

Regression Analysis

Microsoft Excel - NCAA Institutions Data

File Home Insert Page Layout Formulas Data Review View Add-Ins Acrobat

From Access From Web From Text From Other Sources Existing Connections Refresh All Connections Sort Filter Advanced Text to Columns Remove Duplicates Data Validation Consolidate What-If Analysis Group Ungroup Subtotal Outline Analysis

S1

UnitID	Institution Name	Full-Time Retention Rate 2010	Undergraduate Enrollment	Graduation Rate Total Cohort	Published In-State Tuition 2010-11	Published In-State Fees 2010-11
104151	Arizona State University	84	56562	59	7793	339
100858	Auburn University	87	20221	66	7008	892
223232	Baylor University	82	12438	71	26966	2918
164924	Boston College	96	9895	91	39880	662
217882	Clemson University	89	15459	76	11128	780
198419	Duke University	97	6697	94	38985	1258
134097	Florida State University	92	31418	74	2870	2368
199755	Georgia Institute of Technology-Main Campus	94	13750	80	7070	1646
151351	Indiana University-Bloomington	90	32367	71	8124	904
153603	Iowa State University	86	23104	70	6102	895
155399	Kansas State University	81	19205	59	6672	704
159391	Louisiana State University and Agricultural & Mechanical College	84	23685	61	3968	1796
171100	Michigan State University	91	35921	77	11152	0
176080	Mississippi State University	82	15543	58	5461	0
199193	North Carolina State University at Raleigh	88	25247	72	4853	1676
147767	Northwestern University	96	9535	94	39640	383
204796	Ohio State University-Main Campus	93	42082	78	8541	879
207388	Oklahoma State University-Main Campus	78	18374	59	4103	2676
209542	Oregon State University	83	19557	60	5760	1355
214777	Pennsylvania State University-Main Campus	92	38594	85	14412	838
243780	Purdue University-Main Campus	88	32173	68	8592	478
243744	Stanford University	98	6940	95	38700	1472
228723	Texas A & M University					3090
229115	Texas Tech University					2674
100751	The University of Alabama					0
221759	The University of Tennessee					932
228778	The University of Texas at Austin					0
104179	University of Arizona					623
106397	University of Arkansas					1557
110635	University of California-Berkeley					1538
110662	University of California-Los Angeles					1379
126614	University of Colorado Boulder					1493
134130	University of Florida					1514
139959	University of Georgia					1666
145637	University of Illinois at Urbana-Champaign					2710
153658	University of Iowa					1289
155317	University of Kansas					858
157085	University of Kentucky					954
163286	University of Maryland-College Park					1653
135726	University of Miami					874
170976	University of Michigan-Ann Arbor					189
174066	University of Minnesota-Twin Cities					2494
176017	University of Mississippi Main Campus					0
178396	University of Missouri-Columbia					1133
181464	University of Nebraska-Lincoln					1276

Regression

Input

Input Y Range: \$C\$1:\$C\$59

Input X Range: \$D\$1:\$G\$59

☒ Labels ☐ Constant is Zero

☒ Confidence Level: 95 %

Output options

☐ Output Range:

☒ New Worksheet Ply:

☐ New Workbook

Residuals

☐ Residuals ☐ Residual Plots

☐ Standardized Residuals ☐ Line Fit Plots

Normal Probability

☐ Normal Probability Plots

OK Cancel Help

Regression Output

NCAA Institutions Data - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Add-Ins Acrobat

Paste Font Alignment Number Conditional Formatting Styles Cell Styles Insert Delete Format Sort & Find & Filter Select Editing

P27

SUMMARY OUTPUT									
Regression Statistics									
Multiple R	0.944242302								
R Square	0.891593524								
Adjusted R Square	0.883411903								
Standard Error	2.003233373								
Observations	58								
ANOVA									
	df	SS	MS	F	Significance F				
Regression	4	1749.245005	437.3112513	108.9751706	6.6127E-25				
Residual	53	212.6860292	4.012943947						
Total	57	1961.931034							
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%	
Intercept	52.01004428	1.998886493	26.0195086	7.38797E-32	48.0007857	56.01930286	48.0007857	56.01930286	
Undergraduate Enrollment	3.43856E-05	3.41008E-05	1.008353449	0.317866375	-3.40119E-05	0.000102783	-3.40119E-05	0.000102783	
Graduation Rate Total Cohort	0.505986575	0.029333249	17.24959186	2.13521E-23	0.447151528	0.564821622	0.447151528	0.564821622	
Published In-State Tuition 2010-11	-6.37017E-05	3.68588E-05	-1.728262522	0.089763854	-0.000137631	1.02277E-05	-0.000137631	1.02277E-05	
Published In-State Fees 2010-11	-0.000503382	0.0003206	-1.570124034	0.122337816	-0.001146426	0.000139661	-0.001146426	0.000139661	

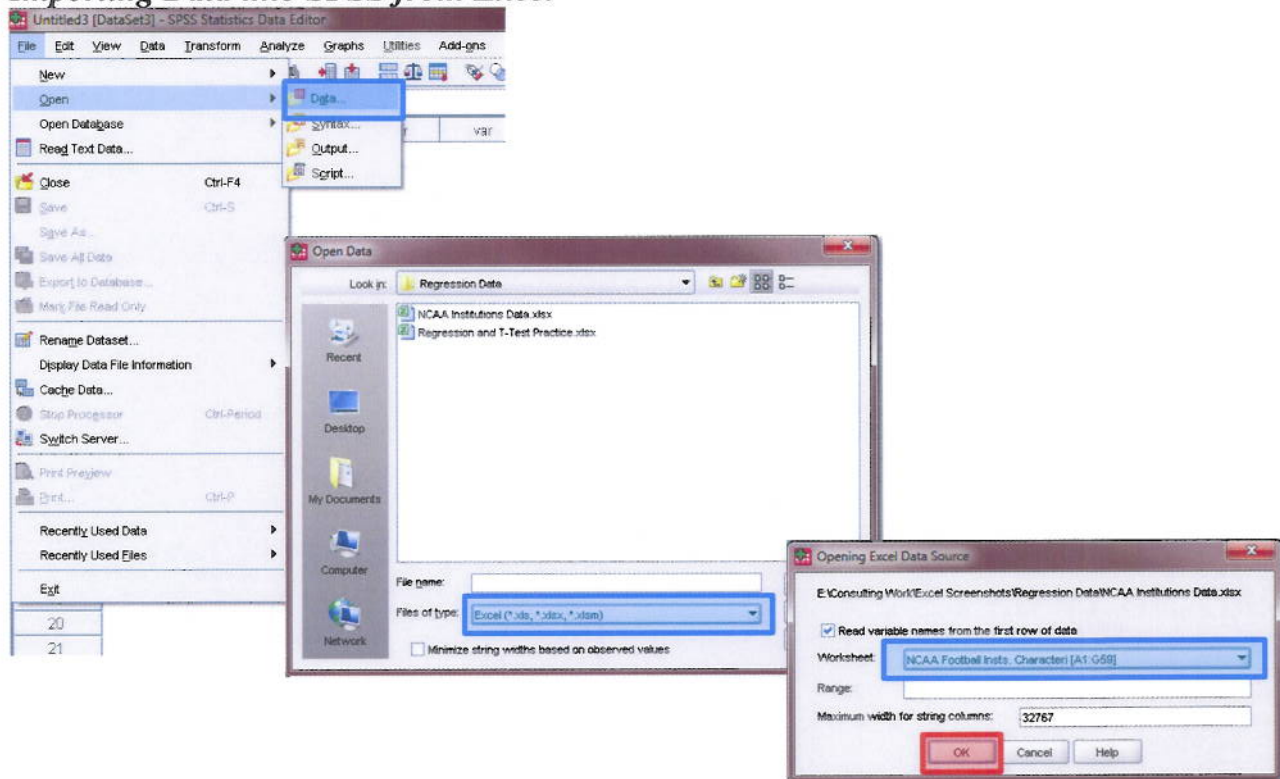
Sheet1 NCAA Football Insts. Character

Ready

The columns need to be adjusted so the analysis can be displayed properly.

Regression in SPSS

Importing Data into SPSS from Excel



The screenshot shows the SPSS Data Editor with the 'NCAA Institutions Data.sav' dataset loaded. The 'Data View' tab is active, displaying a table with 26 rows and 7 columns. The columns are: UnitID, InstitutionName, FullTimeRetentionRate2010, UndergraduateEnrollment, GraduationRateToTotalCohort, PublishedInStateTuition201011, and PublishedInStateFees201011. The data represents various universities and their financial metrics.

	UnitID	InstitutionName	FullTimeRetentionRate2010	UndergraduateEnrollment	GraduationRateToTotalCohort	PublishedInStateTuition201011	PublishedInStateFees201011
1	104151	Arizona State University	84	56562	59	7793	339
2	100858	Auburn University	87	20221	66	7008	892
3	223232	Baylor University	82	12438	71	26966	2918
4	164924	Boston College	96	9895	91	39880	662
5	217882	Clemson University	89	15459	76	11128	780
6	198419	Duke University	97	6697	94	39395	1258
7	134097	Florida State University	92	31418	74	2870	2368
8	139755	Georgia Institute of Technology-Main Campus	94	13750	80	7070	1646
9	151351	Indiana University-Bloomington	90	32367	71	8124	904
10	153603	Iowa State University	86	23104	70	6102	895
11	155399	Kansas State University	81	19205	59	6672	704
12	159391	Louisiana State University and Agricultural & Mechanical College	84	23685	61	3968	1796
13	171100	Michigan State University	91	35921	77	11152	0
14	176080	Mississippi State University	82	15543	58	5461	0
15	199193	North Carolina State University at Raleigh	88	25247	72	4853	1676
16	147767	Northwestern University	96	9535	94	39840	383
17	204796	Ohio State University-Main Campus	93	42082	78	8541	879
18	207388	Oklahoma State University-Main Campus	78	18374	59	4103	2676
19	209542	Oregon State University	83	19557	60	5760	1355
20	214777	Pennsylvania State University-Main Campus	92	38594	85	14412	838
21	243780	Purdue University-Main Campus	88	32173	68	8592	478
22	243744	Stanford University	98	6940	95	38700	1472
23	228723	Texas A & M University	91	39148	80	5297	3090
24	229115	Texas Tech University	82	25462	63	4296	2674
25	100751	The University of Alabama	85	24882	67	7900	0
26	221759	The University of Tennessee	86	21392	60	6450	932

Regression Analysis

SPSS Statistics Data Editor

File Edit View Data Transform Analyze Graphs Utilities Add-ons Window Help

11: UndergraduateEnroll... 15205.0

UnitID

1 104151 Arizona State University

2 100898 Auburn University

3 222232 Baylor University

4 164924 Boston College

5 217832 Cleveland State University

6 198419 Duke University

7 134037 Florida International University

8 136766 Georgia Institute of Technology

9 151351 Indiana University

10 153603 Iowa State University

11 156399 Kansas State University

12 168391 Louisiana State University

13 171100 Michigan State University

14 176000 Minnesota State University

15 199193 North Carolina State University at Raleigh

16 147767 Northwestern University

17 204796 Ohio State University-Main Campus

18 207388 Oklahoma State University-Main Campus

19 209542 Oregon State University

20 214777 Pennsylvania State University-Main Campus

21 243700 Purdue University-Main Campus

22 243744 Stanford University

23 206728 Texas A & M University

24 229115 Texas Tech University

25 100751 The University of Alabama

26 221769 The University of Tennessee

27 226778 The University of Texas at Austin

28 104179 University of Arizona

29 106397 University of Arkansas

30 110636 University of California-Berkeley

31 110662 University of California-Los Angeles

32 126614 University of Colorado Boulder

33 134130 University of Florida

34 139960 University of Georgia

35 145537 University of Illinois at Urbana-Champaign

36 153650 University of Iowa

37 155317 University of Kansas

38 157085 University of Kentucky

39 163286 University of Maryland-College Park

40 136726 University of Miami

41 170376 University of Michigan-Ann Arbor

42 174066 University of Minnesota-Twin Cities

43 176017 University of Mississippi Main Campus

FullTimeRetentionRate2010 UndergraduateEnrollment GraduationRateTotalCohort PublishedInStateTuition201011 PublishedInStateFees201011 var var

84 56562 59 7793 339

87 20221 66 7038 882

82 12430 71 26956 2910

96 9895 91 38890 862

89 15459 76 11126 780

97 6697 94 38855 1258

92 31410 74 2870 2368

94 13750 80 7070 1646

90 32367 71 8124 904

86 23104 70 6102 895

81 19305 59 6672 704

84 23665 61 3968 1796

91 35921 77 11152 0

82 15543 58 5461 0

80 25247 72 4853 1676

96 9536 94 38840 383

93 42082 78 8541 879

78 10374 59 4103 2676

83 19657 80 5760 1355

92 38694 85 14412 838

88 32173 88 8692 470

98 6940 95 30700 1472

91 39148 80 5297 3000

82 25462 63 4296 2674

85 24802 67 7500 0

86 21892 60 6490 952

92 30420 80 9418 0

77 30592 80 7514 623

83 17247 50 5211 1557

97 25540 91 9402 1538

97 26162 90 9402 1379

85 20648 68 7018 1493

96 32660 84 3530 1514

94 26947 81 7070 1665

94 31540 84 10386 2710

86 21176 70 6129 1269

79 20343 61 7875 858

82 19927 59 7656 954

95 26922 81 6753 1653

90 10368 80 36962 874

96 27027 90 11648 189

89 33607 70 9794 2494

83 14159 59 5436 0

Linear Regression

UnitID

Institution Name (Instit...

Undergraduate Enrollme...

Graduation Rate Total ...

Published In-State Tuto...

Published In-State Fees...

Dependent: Full-Time Retention Rate 2010 (FullT...

Block 1 of 1

Independent(s): Undergraduate Enrollment (Under... Graduation Rate Total Cohort (Gr... Published In-State Tuition 2010-11...

Method: Enter

Selection Variable:

Case Labels:

WLS Weight:

OK Paste Reset Cancel Help

Linear Regression: Statistics

Regression Coefficient

☒ Estimates

☒ Confidence intervals

Level(%): 95

☐ Covariance matrix

☒ Model fit

☐ R squared change

☐ Descriptives

☐ Part and partial correlations

☐ Collinearity diagnostics

Residuals

☐ Durbin-Watson

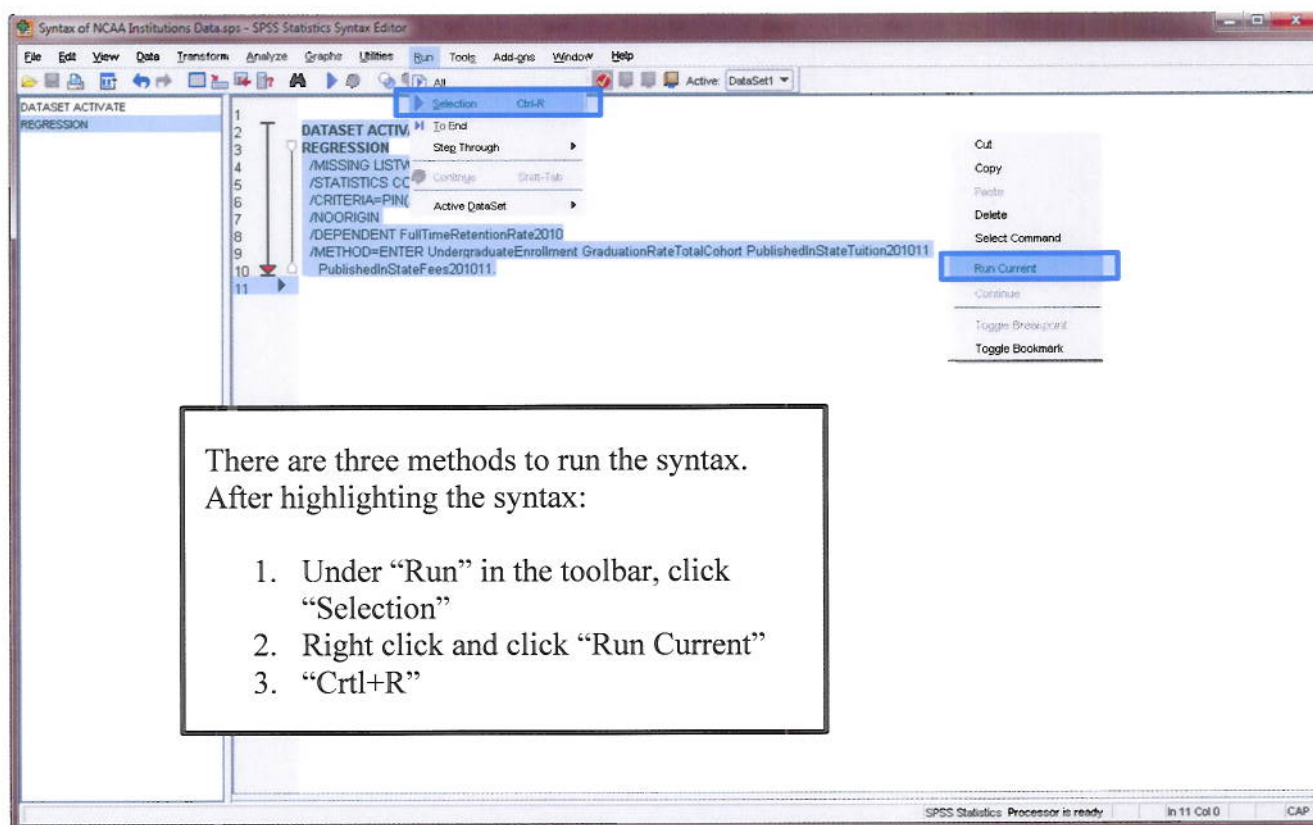
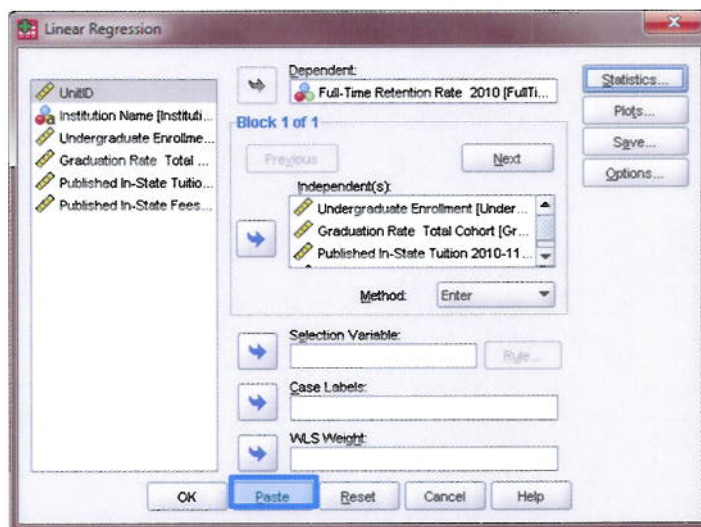
☐ Casewise diagnostics

☒ Outliers outside: 3 standard deviations

☐ All cases

Continue Cancel Help

Pasting as Syntax



There are three methods to run the syntax.
After highlighting the syntax:

1. Under "Run" in the toolbar, click "Selection"
2. Right click and click "Run Current"
3. "Ctrl+R"

Regression Output

