

Online Excel Tutorials and Assignments

One of the key components of this class is building educators' skill at working with raw student and school data. Educators who do not have the ability to work with raw data are dependent on paper reports from others (e.g., school district, publishing company, state department of education). The goal is to empower educators to have more control over the collection, analysis, and presentation of their data.

I use Microsoft Excel in this class because of its ubiquitous presence in schools, its relatively low learning curve, and its powerful analytical and presentation capabilities. Over the course of the semester, you will be watching a number of online *screencasts* (i.e., screen movies with voice narration) that are designed to help you acquire some of the Excel skills that are useful when working with raw data.

The tutorials and assignments are completely self-paced. Although you have the entire course period to complete all six assignments, you are strongly encouraged to spread these out over multiple weeks. Do not wait until the last few days to complete these! **Note that Assignment 4 requires you to train someone else and have them send me an e-mail about that training.** Stay in touch as you have questions / concerns about these assignments.

ASSIGNMENT 1 [5% of course grade]

Go to www.SchoolDataTutorials.org. Read the information on the main page. In the sidebar, also click on *Help!* and *About This Site* and read the information there as well. Once you have read over everything, watch the following tutorials:

- Start Here
 - Basic navigation
 - Select rows and columns
 - Freeze panes
- Formatting
 - Page setup and set print area
 - Format cells
 - AutoFormat
 - Format rows and columns

You may know how to do some of these things in Excel already. I still strongly encourage you to watch all of the tutorials. We have found that even when students think they know how to do something (e.g., printing), they still find little tips / tricks / nuances that are useful to them (e.g., printing so that the column headings show up on each page; printing so that the last column doesn't print on a separate page).

Once you have watched the tutorials listed above, you are ready to complete and submit Assignment 1:

- Open *Assignment 1.xls* and save it to your hard drive. Save frequently as you go along.
- Set the print area so that the data print out in portrait orientation and are only one page wide. The print-out can be as long as necessary.
- Set the first header row so that it prints on all pages.
- Insert a custom header that has your name in it.
- Insert a footer that says "Page x of y" (e.g., Page 2 of 3).
- Freeze the first row so that it still displays on the screen when you're at the bottom of the data.
- Insert a page break so that exactly 30 lines of data (not including the repeating header row) print on the first page.
- Resize all columns and rows to autofit the data in them.
- Change the header row to bold white text on a black background.
- Save your file one last time and e-mail it to Dr. Scott McLeod (mcleod@iastate.edu) for review.
Be sure to put the following in the e-mail subject line: EDAD 554 - Assignment 1.

ASSIGNMENT 2 [5% of course grade]

Go to www.SchoolDataTutorials.org. Watch the following tutorials:

- Formatting
 - Conditional formatting
- Working with data
 - Sort
 - Filter
- Entering data
 - AutoFill
 - Custom fill

Once you have watched the tutorials listed above, you are ready to complete and submit Assignment 2:

- Open *Assignment 2.xls* and save it to your hard drive. Save frequently as you go along.
- Insert a custom header that has your name in it.
- Use AutoFill to number the students in column A from 1 to 195 (i.e., Student 1, Student 2, ..., Student 195).
- The column labeled MPCT03 represents the student's percentage (rounded) of math items correct on the state math assessment; RPCT03 represents the same for reading. Set up conditional formatting in these two columns so that students answering 75% to 100% of questions correctly are shown in a bold font with a blue background and so that students answering 0% to 50% of questions correctly are shown in a bold font with a red background.
- Sort the database by gender (GENDER, ascending), then by attendance grade (ATTEND, ascending), then by math scaled score (MSCALE03, descending). If you've done it correctly, the students should be sorted high to low within each attendance grade category within each gender category.
- Turn on filters and show just the English-speaking students (HOMELANG = EN) who reside with both parents (RESIDES = 1).
- Save your file one last time and e-mail it to Dr. Scott McLeod (mcleod@iastate.edu) for review.
Be sure to put the following in the e-mail subject line: EDAD 554 - Assignment 2.

ASSIGNMENT 3 [5% of course grade]

Go to www.SchoolDataTutorials.org. Watch the following tutorials:

- Working with data
 - Paste special
- Entering data
 - Data validation
- Charts, formulas, pivot tables
 - Charts and graphs

Once you have watched the tutorials listed above, you are ready to complete and submit Assignment 3:

- Open *Assignment 3.xls* and save it to your hard drive. Save frequently as you go along.
- Insert a custom header that has your name in it.
- Use data validation to ensure that only the values in B2:B3 can be entered in cells B9:B18.
- Use data validation to ensure that only the values in C2:C3 can be entered in cells C9:C18.
- Use data validation to ensure that only the values in D2:D6 can be entered in cells D9:D18.
- Use data validation to ensure that only whole numbers between 0 and 180 can be entered in cells E9:G18.
- Hide rows 1 through 7.
- Enter fake data in cells B9:G18 (the light yellow area).
- In cells J8:J18, paste special a link to cells A8:A18. In cells K8:K18, paste special a link to cells E8:E18.
- Make a column chart out of cells J8:K18 and save it on a new sheet. Format the chart as professionally as you can.
- Save your file one last time and e-mail it to Dr. Scott McLeod (mcleod@iastate.edu) for review.
Be sure to put the following in the e-mail subject line: EDAD 554 - Assignment 3.

ASSIGNMENT 4 [5% of course grade]

- Teach a friend and/or colleague (but not one of your EDAD 554 classmates!) how to
 - Sort,
 - Do conditional formatting, and
 - Use filters.
- Have your friend / colleague e-mail Dr. Scott McLeod (mcleod@iastate.edu) about how he or she might use these skills in his or her daily work. He or she is invited to send along an example Excel file that illustrates the skills in action as long as the file is both virus-free and anonymized to preserve student data confidentiality (if necessary). Choose your friend carefully (since your grade for this assignment is dependent upon him or her e-mailing us) and be sure he or she mentions you by your full name (e.g., "Scott McLeod," not just "Scott") so we can give you credit. It is preferred, but not required, that your friend / colleague be a PK-12 educator.

ASSIGNMENT 5 [5% of course grade]

Go to www.SchoolDataTutorials.org. Read the information on the home page. Also click on *Help!* and *About this site* and read the information there as well. Once you have read over everything, watch the following tutorials:

- Charts, formulas, pivot tables
 - Formulas and functions
 - Trace cell references
 - Protection

Once you have watched the tutorials listed above, you are ready to complete and submit Assignment 5:

- Open *Assignment 5.xls* and save it to your hard drive. Save frequently as you go along.
- In the yellow cells (I8:I77), calculate each student's overall quiz average. Format the averages to one decimal place.
- Set up a conditional format for the yellow cells so that any average less than 7.0 has a red background.
- In the blue cells (B3:B5), calculate the number of students for each teacher (check your formulas by changing cell B24 (purple) to Teacher B and see if B3 and B4 change; then change cell B24 back to Teacher A).
- In the green cells (C3:H5), calculate the averages for each quiz for each teacher. Format the averages to one decimal place.
- In the orange cells (I3:I5), calculate the overall quiz average for each teacher. Format the averages to one decimal place.
- In the pink cell (K5), calculate the overall grade-level average for all quizzes. Note that this requires you to do a weighted average. Format the average to one decimal place.
- Set up filters in Row 7 so that only the students who got a 10 on Quiz 6 are showing.
- Save your file one last time and e-mail it to Dr. Scott McLeod (mcleod@iastate.edu) for review.
Be sure to put the following in the e-mail subject line: EDAD 575 - Assignment 5.

ASSIGNMENT 6 [5% of course grade]

Go to www.SchoolDataTutorials.org. Watch the following tutorials:

- Linking, importing data
 - Link Excel to other programs
 - Import data into Excel
- Charts, formulas, pivot tables
 - Pivot tables and charts

Once you have watched the tutorials listed above, you are ready to complete and submit Assignment 6:

- Open *Assignment 6.xls* and save it to your hard drive. Save frequently as you go along.
- In the yellow cells (J2:J71), calculate each student's overall quiz average. Format the averages to one decimal place.
- Create a pivot table from cells A1:J71.
- Drag all six quizzes, plus the quiz average column (*Average*), into the data area and change each one to an average instead of a Sum. You should now have a pivot table showing the averages for each of the six quizzes plus the overall average. Format the averages to one decimal place.
- Change the cell that says *Average of Average* (probably cell A10) to say *Overall Average* instead.

- Drag *Teacher* and *Gender* into the pivot table so that it looks like the picture below.
 - Notice how quickly you're getting averages and subaverages compared to what you did in Assignment 5!
- Create a pivot chart from your pivot table [note that this won't work on a Mac, only a PC, so skip this and go to the next bullet]. Change the chart type to a regular (clustered) column chart instead of a stacked column chart. Practice moving *Teacher* and *Gender* around to display the data in different ways. Reformat the chart as desired.
- Once you have your chart the way you like it, paste a non-linked copy of the chart into a blank Microsoft Word document [if you have a Mac, do this for your pivot table instead of your pivot chart]. Save the file as *Assignment 6.doc*.
- Save your Excel file one last time and e-mail **both** the Excel and Word files to Dr. Scott McLeod (mcleod@iastate.edu) for review. **Be sure to put the following in the e-mail subject line: EDAD 575 - Assignment 6.**

	A	B	C	D	E
1	Drop Page Fields Here				
2					
3			Gender		
4	Data	Teacher	Female	Male	Grand Total
5	Average of Quiz 1	Teacher A	6.0	7.5	6.6
6		Teacher B	5.6	7.6	6.6
7		Teacher C	8.2	7.3	7.7
8	Average of Quiz 2	Teacher A	6.6	7.4	6.9
9		Teacher B	6.3	8.2	7.2
10		Teacher C	8.3	7.8	8.0
11	Average of Quiz 3	Teacher A	6.5	7.4	6.9
12		Teacher B	5.6	7.9	6.7
13		Teacher C	7.9	6.9	7.4
14	Average of Quiz 4	Teacher A	6.7	7.6	7.1
15		Teacher B	6.7	8.3	7.5
16		Teacher C	8.6	7.6	8.1
17	Average of Quiz 5	Teacher A	6.4	7.6	6.9
18		Teacher B	6.5	8.3	7.3
19		Teacher C	8.3	7.4	7.8
20	Average of Quiz 6	Teacher A	6.8	8.0	7.3
21		Teacher B	6.7	8.4	7.5
22		Teacher C	8.5	7.8	8.1
23	Overall Average	Teacher A	6.5	7.6	7.0
24		Teacher B	6.2	8.1	7.1
25		Teacher C	8.3	7.5	7.9
26	Total Average of Quiz 1		6.6	7.5	7.0
27	Total Average of Quiz 2		7.0	7.8	7.4
28	Total Average of Quiz 3		6.7	7.4	7.0
29	Total Average of Quiz 4		7.3	7.8	7.6
30	Total Average of Quiz 5		7.1	7.7	7.4
31	Total Average of Quiz 6		7.3	8.0	7.7
32	Total Overall Average		7.0	7.7	7.3

Did you like these tutorials?

Note that www.SchoolDataTutorials.org is a free resource.
Please publicize its presence to others!

Are you ready to go forth and do great things?