

PYSC 2300 Human Memory: Assignment 1

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August 29, 2023

Introduction to Python and Excel for Data Analysis

Many of the assignments in this course will involve analyzing experimental data. To conduct these analyses, you will use either python or excel. Either is fine, both have their strengths and weaknesses, and both can be daunting for new users. Therefore, the goal of this preliminary assignment is to give you an introduction to the python and/or excel skills necessary for the course, as well as to get you some practice analyzing a small data set.

On Canvas (under Files/Assignments/Assignment_1), there is an excel workbook (excel_intro_human_memory.xlsx), a python jupyter notebook (python_intro_human_memory.ipynb), and a csv file (Example_Penn_Data.csv) for you to download, which contain some introductory material, as well as the data you will analyze for this assignment. You will only need to turn in work in either excel or python, but it is strongly recommended that you try out both in this first assignment to see which you feel more comfortable with (or which you feel would be more valuable to learn).

Overview of the Data

For the questions in this assignment, you will be analyzing some made up data on the different degrees offered at Penn (don't use this as a guide for what major to declare!). The columns, or fields, are as follows:

- School = Which of Penn's four undergraduate schools.
- Major = Name of degree program.
- Course Units = Number of CUs required to graduate
- PhD = 1 if department offers a PhD program, 0 if no
- Intro 101 = 1 if the department offers an introductory course, 0 if not
- Class Size = Number of students in previous graduating class

Problems

1. For degrees from the College of Arts and Sciences, what is the average number of CUs required to graduate? Is this more or less than the average for the other three schools combined?
2. How many departments with a class size of under 30 offer a PhD program? How many departments with a class size over 50 do not?
3. For each school, what percentage of the programs offer an introductory course?
4. Make a bar chart that plots the school on the x-axis and the average class size on the y-axis. Make sure to label your axes.