

Due Feb 9 23:59

**Scheduling Data**

With the assignment is the file "search.xls". It is the spreadsheet file downloaded from the SDSU Spring schedule. The file extension is wrong. It is a tab separated file. Use Pandas to answer the following.

Answer the following questions about the data set.

1. The on-line schedule makes it hard to see when classes are offered. So produce a table (or dataframe) that shows when classes are offered. Divide classes into Intro classes (150, 150L, 160, 160L), lower division (200, 300 & 400) and upper division (500 & 600). See the table below. This may be the hardest problem in the assignment.

## Spring 2022

Time	Intro MW	Intro TTH	Lower MW	Lower TTH	Upper MW	Upper TTH
800		150L, 150L, 160L		210, 210		578
930		150	200	200		
1100		100		480, 496		549, 581
1230				440		
1400	150, 160, 160L	160	370	240, 250, 320, 460	578, 582	
1530		160L		320		
1600	160	150	210, 210, 370	480	532, 574	514, 549
1730	160, 160L	150L	460	440, 480	530, 696	596, 605, 649
1900			240		514, 574, 662	530, 583

2. A number of classes have multiple sections making it hard to see how many students are taking each class. Produce and show a dataframe that shows how many students are in each class. Show the entire dataframe. Part of such a table for Fall is below.

Fall2021

Course	Students
100 COMPTR SCIENCE PRINCIPLES	36
150 INTRO COMPUTER PROGRAMMNG	304
150 INTRO COMPUTER PROGRM LAB	290
160 INT COMPUTER PROGRAMMING	83
160 INT COMPUTR PROGAMMING LAB	80
210 DATA STRUCTURES	107
240 COMPUTER ORGANIZATION	128
250 INTRO TO SOFTWARE SYSTEMS	61
301 COMPUTERS AND SOCIETY	75
320 PROGRAMMING LANGUAGES	107
370 COMPUTER ARCHITECTURE	136

3. Produce and show a dataframe shows how many classes are held in each classroom.
4. Produce and show a dataframe shows how many students are in a class at a given time. on Tuesday & Thursday. For each time there will be one number - the number of students in all the classed at that time.
5. Produce a bar chart showing the number of students in classes at each time. That is the result of problem 4.

### Instructions

You are free to use any IDE to write your code.. However you are to turn in a Jupyter Python notebook. Your jupyter notebook should be self contained. All calculations and answers to the questions are to be in one notebook. This assignment requires you to use a file which are provided. You notebook needs to read the unmodified file, including names. Any needed modification to the file needs to be done in the notebook. At the top of the notebook include the path to the file. I will edit that path when I grade the assignments to my copy of the test data.

Notebooks can contain text, code and output. Use text to indicate what problem you are solving. The code used to answer the problem need to be complete.

## Grading

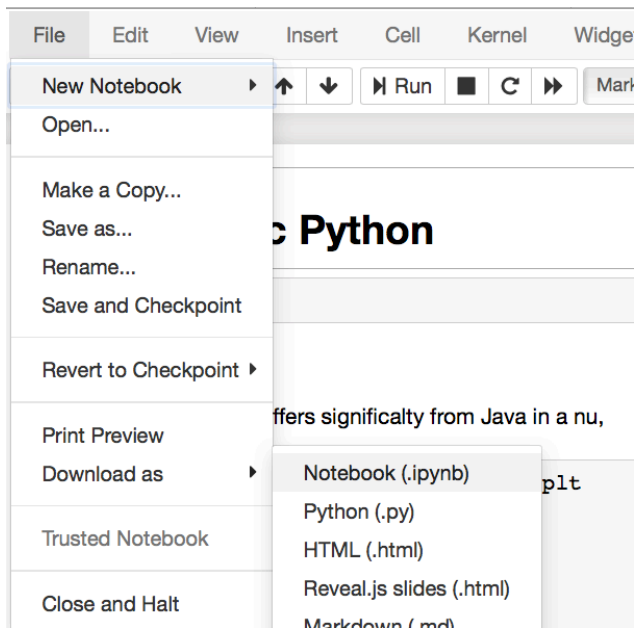
**Each problem is worth 10 points.**

## What to turn in

To turn in your assignment download your Jupyter notebook as an IPython Notebook (.ipynb). See image below. This will allow me to run your assignment in Jupyter. Note that when you download your assignment it will create a file with the extension .ipynb.json. I will remove the .json extension.

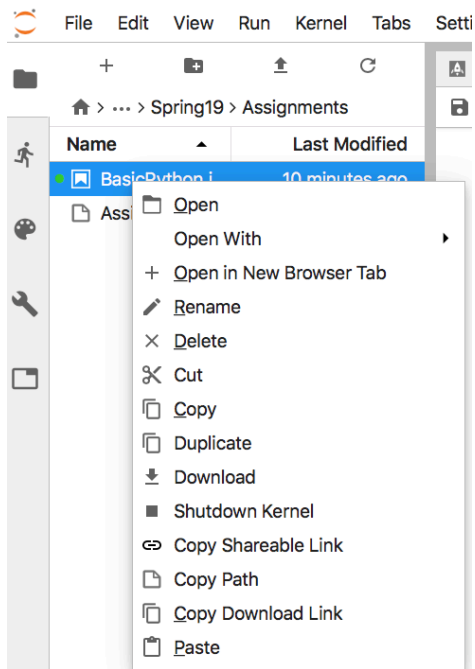
Once you have downloaded the assignment zip it up and then upload the zip file to the course portal.

## Using Classic Jupyter Notebook



## Using JupyterLab

Right-click on the Notebook name in the file browser and select download.



## Late Penalty

An assignment turned in 1-7 days late, will lose 5% of the total value of the assignment per day late. The eighth day late the penalty will be 40% of the assignment, the ninth day late the penalty will be 60%, after the ninth day late the penalty will be 90%. Once a solution to an assignment has been posted or discussed in class, the assignment will no longer be accepted. Late penalties are always rounded up to the next integer value.