ISYS 812:
Programming and Applications for Data Analytics

Practice Session 1

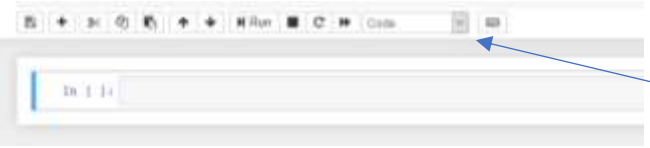
In this practice session, you are asked to answer a set of questions related to the materials covered in class. We will answer those questions using a Python file.

The first step is to get familiar with Anaconda and Jupyter and then create a .ipynb file.

- Open Anaconda on your computer and click **Launch** on the Jupyter Notebook icon.
  A window opens in your browser with the Jupyter Notebook environment. You should see a list of folders and files corresponding the starting location of Jupyter environment.
- Open a folder easy to access, like the Desktop.
- On the top right, click on **New,** then **Python 3**. Your new notebook appears with the command
- To change the name of the notebook, click on "Untitled" at the top of the page and enter "Practice Session 1"

We can now populate our notebook with some headings, question number and answers.

By default, each entry line, starting with `In[ ],` waits for your python code.

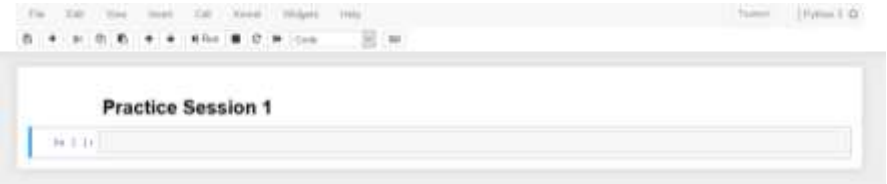


You can create headings by selecting a line, click on the dropdown button near **Code** and select **Markdown.** You can select the different level of header using # .

Heading 1
Heading 2
Heading 3 …and so on

For this file, let's create a top heading(#) **Practice Session 1** and individual sub-headings(##) for each question.

Therefore, type `# Practice Session` in the first cell and press **Shift-Enter** to run the line.



Note, that, just like when you write your code, **Shift-Enter** executes the cell.
Alt- Enter create a new cell below the current cell.
Enter just goes to the next line within the cell.

Let's save our file with Ctrl-S or clicking on the floppy disk icon.

Let's have our Question 1 heading in the next cell by selecting the Markdown cell type and typing ## `Question 1.`

Observe that if you keep the cell type as Code **#** allows you to create **a comment** which is a line that is not run as a code. Comments are often used to describe a code.

In addition, if a cell is set as **Markdown**, we can type regular text in the cell. We will use those type of cell to copy paste each question.

Python Basics : String, Display and User Input

Question 1

Assume two variables **var1** is 25.1 and **var2** is 4. Using Casting and Arithmetic operations of your choice, manipulate those variables to display the following output.

Note that there may be more than one correct answer for each output.

a. 21.1

b. 425.1

c. 254

d. 6

e. 1

f. 4.0

Question 2

Consider a string variable called **team** containing **"Golden State Warriors"**

1. Create the variable **team** and output it using a print() statement.

2. Using slicing and arithmetic operation, derive the following output.

a. den State

b. Warriors

c. G

d. WarriorsGold

e. Warriors Gold

f. etatS

Question 3

A car's miles-per-gallon can be calculated with the following formula:

MPG = *Miles driven / Gallon of gas used*

Write a program that asks the user for the number of miles driven and the gallon of gas used.
It should calculate the car's miles-per-gallon and display the result.

Here is a sample output. The user input is in **bold**

Enter the miles driven: ***60***

Enter the gallons of gas used: ***2.56***

After driving 60 miles, you used 2.56 gallons of gas.
Therefore, your car 's MPG is 23.4375

Note : You may be interested in using the **round( )** function.

`round(number , digit)` rounds the **`number`** to the number of decimal digits indicated in **`digit.`** If no digit are specified, it rounds the number to the nearest integer.

Question 4

Write a program which takes three test score input from the user and display: the three scores in a single line, the sum of the test score and the average of the test scores.
You can assume that all scores are integers.

Here is a sample output. The user input is in **bold**

Enter 3 test scores
==========
Enter test score: **75**
Enter test score: **80**
Enter test score: **93**
==========
Your Scores: **75 80 93**
Total Score: **248**
Average Score: **82.67**