# Assignments – Set 1

## Instruction:

* Write pseudo-code/comments before each codes. Use ‘#’ to convert the sentence in to comments.

E.g.:- #1st step …

#2nd Step...

* If stuck or in doubt, feel free to Google the concept. ☺
* Whatsapp/call me anytime if you have any doubts.
* If using jupyter notebook, the notebook is saved in .ipnyb format. Submit that file or if using python editor, consolidate all answers in one file and submit.

## Questions:

Part 1 – Test your knowledge.

1. What is the type of the result of the expression 1 + 2.0 + 3?
2. How can you convert an integer to a floating-point number?
3. Consider the following three statements. Do they change the value printed for A?

A = "spam"

B = A

B = "shrubbery"

1. Consider these three statements. Do they change the printed value of A?

A = ["spam"]

B = A

B[0] = "shrubbery"

1. How about these—is A changed now?

A = ["spam"]

B = A[:]

B[0] = "shrubbery"

(Hint: print and find out)

1. Given a string S with the value "spam". How to extract the middle letters from it (‘pa’)?
2. How would you convert a character to its ASCII integer code? How would you convert the other way, from an integer to a character? (hint: check out function ord() and chr())
3. How to get the length of name? (assume name is a variable used to store your name)
4. What will name.find(“a”) return?
5. Convert the name to UPPER CASE. Eg: ‘tom’ to ‘TOM’
6. I have a list, colors = ['red', 'blue', 'green']. Print color green from the list.
7. Print all colors line by line from the above list using a loop.
8. Is strings in python mutable or immutable?s

To check this try these steps:

* Create a variable called name and assign your name into it
* Change your first letter to another letter, name[0]='?'
* Add initial to your name, name + ‘xyz’

What are your findings?

1. Use the same method to find out if list in python is mutable/immutable?

Try out!

1. Multi-line strings can be written using three single quotes or three double quotes.

x = """This is a multi-line string

written in

three lines."""

print x

## Problems:

1. I have a list called squares = [1, 4, 9, 16]. Find the sum of all elements in the list using loop.
2. I have a list called names = [‘bob’, ‘ron’, ‘jon’, ‘tom’]. Loop through all the name, if you found ‘tom’, print ‘yayy’.
3. Accept 2 numbers from the user and: (hint: use input method to accept information from user)
   * Print the biggest number
   * print the difference
   * The difference when b is subtracted from a
   * The product of a and b
   * The quotient when a is divided by b
   * The remainder when a is divided by b
   * The result of log10 a
   * The result of a power b
   * Swap both the numbers and print both numbers
4. Inverse a number - Accept a 4 digit number and inverse the number e.g.: 1234 will be displayed as 4321
5. Accept a 4 digit number and display the sum of all digits in the number eg: 1234= 1+2+3+4 = 10
6. Accept a number and check if the number is prime number.
7. Get the string from user, reverse it and print it out.
8. Checks if the string entered by the user is a palindrome
9. Take a list, say for example this one:

a = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]

Ask the user for a number and return a list that contains only elements from the original list ‘a’ that are smaller than that number given by the user.

1. Create a program that asks the user to enter their name and their age. Print out a message addressed to them that tells them the year that they will turn 100 years old.

(hint: <https://www.geeksforgeeks.org/python-output-formatting/>)

1. Given three integers, print the smallest value. Get 3 integers from the user, print the one that is smallest among them.
2. Given the year number (Ask user to enter an year). You need to check if this year is a leap year. If it is, print LEAP, otherwise print COMMON.

The rules in Gregorian calendar are as follows:

* 1. a year is a leap year if its number is exactly divisible by 4 and is not exactly divisible by 100
  2. a year is always a leap year if its number is exactly divisible by 400

1. Given two integers A and B (ask user to enter 2 integers). Print all numbers from A to B inclusively, in ascending order, if A < B, or in descending order, if A ≥ B.
2. Given a list of numbers, let’s say A=[2,4,6,7,4,5,12,13,17,33,21,48]. Find and print all the list elements with an even index number. (i.e. A[0], A[2], A[4], ...).
3. Given a string consisting of exactly two words separated by a space. Print a new string with the first and second word positions swapped (the second word is printed first).

Eg: String = Hello, world! , output = world! Hello,

(Hint. Google split function in python)