Sheet – 1

1. Install Python version 3.7+ on your system and make sure you set python path to your system path variable

2. Perform Following on Python Shell Window

   5**9

   3//2

   7//3

   7/3

   6 == 6

   a = 20; a+= 30; a%=3; print(a)

   True * False

   True & False

   True and False

   ((6>3) and (7<4) or (18==3)) and (9>3)

   True is False

   False in ‘False’

   ((True == False) or (False > True)) and (False <= True)

3. Try to get following output from two python strings
   s1 = “Nice to have it”
   s2 = “here”

   Expected output
   Nice to have it here

4. Given this nested list, use indexing to grab the word "hello"
   a = [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]

5. Try to insert above strings s1 and s2 in the list ‘a’ mentioned in que 4, in the beginning and end of it respectively

6. Write a Python program to print all even numbers from a given numbers list in the same order and stop the printing if any numbers that come after 237 in the sequence.
   Sample numbers list:
   numbers = [386, 462, 47, 418, 907, 344, 236, 375, 823, 566, 597, 978, 328, 615, 953, 345, 399, 162, 758, 219, 918, 237, 412, 566, 826, 248, 866, 950, 626, 949, 687, 217, 815, 67, 104, 58, 512, 24, 892, 894, 767, 553, 81, 379, 843, 831, 445, 742, 717, 958,743, 527]

7. Write a Python program to print out a set containing all the colours from color_list_1 which are not present in color_list_2.

Test Data:
color_list_1 = set(["White", "Black", "Red"])
color_list_2 = set(["Red", "Green"])
Expected Output:
{'Black', 'White'}

8. WAP to find if the given input string is Pangram or not

9. Write a Python program that accepts an integer (n) and computes the value of n+nn+nnn.
Sample value of n is 5
Expected Result: 615

10. Write a python program to take input from console in following fashion
23 54 12#98 3 17
and generate the corresponding two list having integers inside (not string)
x = [23, 54, 12]
y = [98, 3, 17]

11. Write a program that accepts a comma separated sequence of words as input and prints the words in a comma-separated sequence after sorting them alphabetically.
Suppose the following input is supplied to the program:
without,hello,bag,world
Then, the output should be:
bag,hello,without,world

12. Write a Python function to find the name of person obtained highest marks in exam from given dictionary
Example dictionary
d = {‘Student’: [‘Rahul’, ‘Kishore’, ‘Vidhya’, ‘Raakhi’],
‘Marks’: [57,87,67,79]}
Output: Kishore

13. Write a program that accepts a sentence and calculate the number of letters and digits.
Suppose the following input is supplied to the program:
hello world! 123
Then, the output should be:
LETTERS 10
DIGITS 3

14. Write a python function which creates a new dictionary of students from a given Dataset of various subject to a specific subject or topic only.
Example Data:
d = {‘Name’: [‘Akash’, ‘Soniya’, ‘Vishakha’ , ‘Akshay’, ‘Rahul’, ‘Vikas’],
‘Subject’: [‘Python’, ‘Java’, ‘Python’, ‘C’, ‘Python’, ‘Java’],
‘Ratings’: [8.4, 7.8, 8, 9, 8.2, 5.6]}
Input: Python
Output:
newData = {‘Name’: [‘Akash’, ‘Vishakha’, ‘Rahul’],
‘Subject’: [‘Python’, ‘Python’, ‘Python’],
‘Ratings’: [8.4, 8, 8.2]}

15. Define a class with a generator which can iterate the numbers, which are divisible by 7, between a given range 0 and n.

16. A robot moves in a plane starting from the original point (0,0). The robot can move toward UP, DOWN, LEFT and RIGHT with a given steps. The trace of robot movement is shown as the following:

    UP 5
    DOWN 3
    LEFT 3
    RIGHT 2

    The numbers after the direction are steps. Please write a program to compute the distance from current position after a sequence of movement and original point. If the distance is a float, then just print the nearest integer.

    Example:

    If the following tuples are given as input to the program:

    UP 5
    DOWN 3
    LEFT 3
    RIGHT 2

    Then, the output of the program should be:

    2