PYTHON – WORKSHEET 1

Q1 to Q8 have only one correct answer. Choose the correct option to answer your question.

1. Which of the following operators is used to calculate remainder in a division?
A) #   B) &   C) %   D) $

Answer : C) %

2. In python 2//3 is equal to?
A) 0.666   B) 0   C) 1   D) 0.67

Answer: B) 0

3. In python, 6<<2 is equal to?
A) 36   B) 10   C) 24   D) 45

Answer: C)24

4. In python, 6&2 will give which of the following as output?
A) 2   B) True   C) False   D) 0

Answer: A)2

5. In python, 6|2 will give which of the following as output?
A) 2   B) 4   C) 0   D) 6

Answer: D)6

6. What does the finally keyword denotes in python?
A) It is used to mark the end of the code

B) It encloses the lines of code which will be executed if any error occurs while executing the lines of code in the try block.

C) the finally block will be executed no matter if the try block raises an error or not.

D) None of the above

Answer: C) The finally block will be executed no matter if the try block raises an error or not.

7. What does raise keyword is used for in python?
A) It is used to raise an exception.   B) It is used to define lambda function
C) it's not a keyword in python.   D) None of the above

Answer: A) It is used to raise an exception.

8. Which of the following is a common use case of yield keyword in python?
A) in defining an iterator   B) while defining a lambda function
C) in defining a generator   D) in for loop.

Answer: C) in defining a generator

Q9 and Q10 have multiple correct answers. Choose all the correct options to answer your question.

9. Which of the following are the valid variable names?
A) _abc   B) 1abc   C) abc2   D) None of the above

Answer : A) _abc and C) abc2

10. Which of the following are the keywords in python?
A) yield   B) raise   C) look-in   D) all of the above

Answer: A) yield   B) raise

Q11 to Q15 are programming questions. Answer them in Jupyter Notebook.
11. Write a python program to find the factorial of a number.

Question: Write a python program to find the factorial of a number.

```
In [12]: def factorial(x):                    #defining a function with name factorial
             counter=1                          # using a=1 as counter to start calculation
             for i in range(1,x+1):            # for loop for the iteration till the number entered
                 counter = counter*i           # calculation
             return counter                     # final output
```

```
In [21]: factorial(int(input("ENTER THE NUMBER TO FIND THE FACTORIAL\n")))          # calling the function

         ENTER THE NUMBER TO FIND THE FACTORIAL
         10
Out[21]: 3628800
```

12. Write a python program to find whether a number is prime or composite.

Question : Write a python program to find whether a number is prime or composite.

```
In [15]: def prime(number):
             if number > 1:
                 # prime numbers and composite numbers starts from 2 onwards
                 for i in range(2, number//2):
                 # we don't need to check for each and every number,floor division will provide with the closest whole number
                     if (number % i) == 0:
                         print(number, "is a Composite Number")
                         break
                     else:
                         print(number, "is a Prime Number")

             # if the entered number is less than or equal to 1
             # then it is neither prime number nor composite
             else:
                 print(number, "Neither Prime Nor Composite")
```

```
In [17]: prime(int(input("ENTER THE NUMBER\n")))

         ENTER THE NUMBER
         13
         13 is a prime number
```

13. Write a python program to check whether a given string is palindrome or not.

Question Write a python program to check whether a given string is palindrome or not.

```
In [63]: # TO SHOW PALINDROME THERE ARE 2 STEPS: 1. REVERSE THE STRING , 2.COMPARE THE REVERSE AND ORIGINAL NUMBER
         def palindrome(value):

             # REVERSE THE ENTERED STRING
             reverse = value[::-1]

             # COMPARING BOTH VALUES
             if(value == reverse):
                 print(value,"is a Palindrome")

             else:
                 print(value, "is not a palindrome")
```

```
In [64]: palindrome(str(input("ENTER THE STRING\n")))

         ENTER THE STRING
         STATS
         STATS is a Palindrome
```

14. Write a Python program to get the third side of right-angled triangle from two given sides.

Question: Write a Python program to get the third side of right-angled triangle from two given sides.

```python
In [49]: def PYTHAGORAS(B,P,H):
             # CHECKING WHICH SIDE IS MISSING
             if(B==str("X") or B==str("x")):

                 ## PYTHAGORAS THEOREM
                 B=(((int(H)**2) -(int(P)**2))**0.5)
                 print(B,"is the Base")

             if(P==str("X") or P==str("x")):

                 ## PYTHAGORAS THEOREM
                 P=(((int(H)**2) -(int(B)**2))**0.5)
                 print(P,"is the Perpendicular")

             if(H==str("X") or H==str("x")):

                 ## PYTHAGORAS THEOREM
                 H=(((int(P)**2) +(int(B)**2))**0.5)
                 print(H,"is the Hypotenuse")
```

```python
In [55]: ### FOR ANY UNKNOWN SIDE ENTER THE VALUE AS X
         print("FOR ANY UNKNOWN SIDE ENTER THE VALUE AS X")
         PYTHAGORAS(str(input("ENTER THE BASE OF THE TRIANGLE\n")),
                    str(input("ENTER THE PERPENDICULAR\n")),
                    str(input("ENTER THE HYPOTENUSE\n")))

         FOR ANY UNKNOWN SIDE ENTER THE VALUE AS X
         ENTER THE BASE OF THE TRIANGLE
         x
         ENTER THE PERPENDICULAR
         5
         ENTER THE HYPOTENUSE
         13
         12.0 is the Base
```

15. Write a python program to print the frequency of each of the characters present in a given string

Question: Write a python program to print the frequency of each of the characters present in a given string

```python
In [60]: def freq(string):
             # TAKING EMPTY SET
             frequency = {}

             for i in string:
                 if i in frequency:
                     frequency[i] += 1          ### ADD 1 TO COUNT IF ALREADY EXISTS IN SETS
                 else:
                     frequency[i] = 1           ### MAKE THE COUNT 1 IF NOT IN SET
             ## printing result
             print ("Count of all characters in ",string," is :\n "
                                        + str(frequency))
```

```python
In [62]: ## CALLING THE FUNCTION , TAKING INPUT THROUGH INPUT BOX
         freq(str(input("ENTER THE STRING\n")))

         ENTER THE STRING
         RAVINDER SINGH
         Count of all characters in  RAVINDER SINGH  is :
         {'R': 2, 'A': 1, 'V': 1, 'I': 2, 'N': 2, 'D': 1, 'E': 1, ' ': 1, 'S': 1, 'G': 1, 'H': 1}
```