

Assignment 1

November 18, 2018

In []: Group 1:

In []: Q1. Write a program to `print` `Hello world`.

```
In [50]: print('Hello world')
```

Hello world

In []: Q2. Write a program to use variables to store the details of a person `and print` them w
a. Name: string
b. Age: `int`
c. Salary: `float`

```
In [52]: Name = "Suvho"  
Age = 30  
Salary = 60000.00  
if Name == "Suvho" :  
    print(Name,":","str")  
    if Age == 30 :  
        print(Age,":", "int")  
        if Salary == 60000.00 :  
            print(Salary,":", "float")
```

Suvho : str
30 : int
60000.0 : float

In []: Q3. Write a program to take the details of a person `as input from the` user `and print` it
a. Name: string
b. Age: `int`
c. Salary: `float`

In []: Didn't get the question

In []: Q4. Write a program to create a `list` of 10 integers to perform the following `and print`
a. Add an integer to the `list`

- b. Add another `list` of integers to existing `list`
- c. Use `Append()` to add an integer to the `list`
- d. The length of the `list`
- e. The 2nd element `in` the `list`
- f. First 2 integers `in` the `list`
- g. Last 5 integers
- h. From 4th to 7th integer `in` the `list`
- i. Last 2 integers using negative indexing
- j. Alternate integers `in` the `list`
- k. List `in` the descending order

```
In [83]: #a
import numpy as np
x = np.arange(10)
print(x, "    length", len(x))
ad1 = x+1
print(ad1, "    1 added to each integer")

#b
newlist = [2,5,7,6,1,9,3,4,1,2]
comb = x + newlist
print(comb)

#conc = np.hstack((x , newlist))
#print(conc,"is of lenght", len(conc))

#c
app = np.append(x, 10)
print(app, "adding a new integer to x, now the length is ", len(app))

#d
length = len(x)
print(length)

#e
sndel = x[1]
print(sndel)

#f
fsttwo = x[:2]
print(fsttwo)

#g
lstfiv = x[-5:]
print(lstfiv)

#h
fts = x[3:7]
```

```

print(fts)

#i
lstt = x[-2 :]
print(lstt)

#j
import random
random.shuffle(x)
print(x)

#k
des = sorted(x,reverse=True)
print(des)

```

[0 1 2 3 4 5 6 7 8 9] length 10
[1 2 3 4 5 6 7 8 9 10] 1 added to each integer
[2 6 9 9 5 14 9 11 9 11]
[0 1 2 3 4 5 6 7 8 9 10] adding a new integer to x, now the length is 11
10
1
[0 1]
[5 6 7 8 9]
[3 4 5 6]
[8 9]
[4 3 1 9 5 0 2 6 7 8]
[9, 8, 7, 6, 5, 4, 3, 2, 1, 0]

In []: Q5. Write a program to take a list of 5 strings as input from the user and print the l

```

In [87]: strlst=['horse', 'fox', 'baboon', 'wildcat','deer']
        for i in strlst:
            print(i)

```

```

horse
fox
baboon
wildcat
deer

```

In []: Q6. Write a program to take a list of 5 integers as input from the user and print the l

```

In [1]: strlst=['horse', 'fox', 'baboon', 'wildcat','deer']
        i=0
        while i < len(strlst):
            lstelmt = strlst[i]
            i += 1
            print(lstelmt)

```

horse
fox
baboon
wildcat
deer

In []: Q7. Write a program to take 2 numbers from the user and perform the following and print (eg: Division: Answer):
a. Divide the numbers
b. Multiply the numbers
c. Raise one number to the power of the other
d. Calculate remainder
e. Calculate factorial of both numbers

```
In [8]: x = 10
        y = 5
        print("Division:" ,x/y)
        print("Multiplication:" ,x*y)
        print("Exponents:" ,x**y, y**x)
        print("Remainder:" ,x%y)
        import math
        print("Factorials:", math.factorial(x),math.factorial(y))
```

Division: 2.0
Multiplication: 50
Exponents: 100000 9765625
Remainder: 0
Factorials: 3628800 120

In []: Q8. Write a program to take a number as input from the user and print whether it is even

```
In [19]: x = 236
        if x%2 == 0 :
            print("Even")
        if x%2 != 0 :
            print("Odd")
```

Even

In []: Q9. Write a program to calculate the area of circle. Take the input from user. Define a function AreaOfCircle() and use it.

```
In [22]: import math
        pi = math.pi
        def AreaOfCircle(r):
            area = pi*r**2
            return area
        AreaOfCircle(10)
```

Out[22]: 314.1592653589793

In []: Group 2:

In []: Q1. Write a program to calculate the area of Circle, Rectangle and Triangle.

```
In [24]: import math
         pi = math.pi
         def AreaOfCircle(r):
             area = pi*r**2
             return area
         Acir = AreaOfCircle(10)
         print(Acir)

         def AreaOfRectangle(l, w):
             area = l*w
             return area
         ARec = AreaOfRectangle(20, 25)
         print(ARec)

         def AreaOfTriangle(b, h):
             area = 0.5*b*h
             return area
         ATri = AreaOfTriangle(20, 25)
         print(ATri)
```

314.1592653589793

500

250.0

In []: Q2. Write a program to calculate the area of Circle, Rectangle and Triangle by taking input as:

- Display a menu with Circle, Rectangle and Triangle.
- Ask the user to choose the option from the above menu.
- Display the area corresponding to the choice.
- Ask the user if it wants to calculate area of any other shape or stop.
- Perform according to the input by the user.

In []: New to me

In []: Q3. Write a program to print the Fibonacci series.

```
In [3]: def Febo(n):
         if n == 0:
             return 0
         elif n == 1:
             return 1
         else:
```

```

        return Febo(n-1) + Febo(n-2)
    print(Febo(0), Febo(1), Febo(2), Febo(3), Febo(4), Febo(5), Febo(6), Febo(7),
          Febo(8), Febo(9), Febo(10), Febo(11), Febo(12), Febo(13), Febo(14))

```

0 1 1 2 3 5 8 13 21 34 55 89 144 233 377

In []: Q4.a. Write a program to print the below patterns:

```

a)
*****
****
***
**
*

```

```

In [46]: def patt1(tns):
        for i in range(tns,0, -1):
            for j in range(0,i):
                print("* ",end="")
            print("\n")
        tns = 5
        patt1(tns)

```

* * * * *

* * * *

* * *

* *

*

In []: Q4.b.

```

*
**
***
****
*****

```

```

In [47]: def patt2(tns):
        for i in range(0, tns):
            for j in range(0, i+1):
                print("* ",end="")
            print("\n")
        tns = 5
        patt2(tns)

```

```

*

* *

* * *

* * * *

* * * * *

```

In []: Q4.c.

```

    *
    **
    ***
    ****

```

In [19]: `def patt3(tns):`

```

    space = 2*tns - 2 # no of blanks each column

```

```

    for i in range(0, tns):

```

```

        for j in range(0, space):
            print(end=" ")

```

```

        space = space - 2 # resetting space after each iteration

```

```

        for j in range(0, i+1):

```

```

            print("* ", end="")
            print("\n")

```

```

    tns = 4
    patt3(tns)

```

```

    *

    * *

    * * *

    * * * *

```