

## Assignment -1

### Python Programming

Assignment Date	17 September 2022
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Maximum Marks	

## Basic Python

### 1. Split this string

s = "Hi there Sam!"

Solution :

```
s.split(" ")
```

```
[1] s = "Hi there Sam!"
[2] s.split(" ")
['Hi', 'there', 'Sam!']
```

### 2. Use .format() to print the following string.

Output should be: The diameter of Earth is 12742 kilometers.

planet = "Earth"

diameter = 12742

Solution :

```
print("The diameter of {} is {} kilometers.".format(planet,diameter))
```

```
[3] planet = "Earth"
    diameter = 12742
[4] print("The diameter of {} is {} kilometers.".format(planet,diameter))
The diameter of Earth is 12742 kilometers.
```

### 3. In this nest dictionary grab the word "hello"

d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}

Solution :

```
d['k1'][3]['tricky'][3]['target'][3]
```

```
[13] d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
[14] d['k1'][3]['tricky'][3]['target'][3]
'hello'
```

## Numpy

### 4.1 Create an array of 10 zeros?

Solution :

```
import numpy as np
x=np.zeros(10)
print(x)
```

```
[16] x=np.zeros(10)
print(x)
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

### 4.2 Create an array of 10 fives?

Solution :

```
import numpy as np
x=np.zeros(10)*5
print(x)
```

```
[17] x=np.ones(10)*5
print(x)
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

### 5. Create an array of all the even integers from 20 to 35

Solution :

```
import numpy as np  
x=np.arange(20,36,2)  
print(x)
```

```
[18] x=np.arange(20,36,2)  
print(x)  
  
[20 22 24 26 28 30 32 34]
```

#### 6. Create a 3x3 matrix with values ranging from 0 to 8

Solution :

```
import numpy as np  
x=np.arange(0,9).reshape(3,3)  
print(x)
```

```
[19] x=np.arange(0,9).reshape(3,3)  
print(x)  
  
[[0 1 2]  
 [3 4 5]  
 [6 7 8]]
```

#### 7. Concatenate a and b

a = np.array([1, 2, 3]), b = np.array([4, 5, 6])

Solution :

```
import numpy as np  
a=np.array([1,2,3])  
b=np.array([4,5,6])  
c=np.concatenate((a,b))  
print(c)
```

```
[20] a=np.array([1,2,3])
      b=np.array([4,5,6])
      c=np.concatenate((a,b))
      print(c)
```

```
[1 2 3 4 5 6]
```

## Pandas

### 8. Create a dataframe with 3 rows and 2 columns

Solution :

```
import pandas as pd

df={'a':[1,2,3], 'b':[4,5,6]}

y=pd.DataFrame(df)

print(y)
```

```
[22] df={'a':[1,2,3],
        'b':[4,5,6]}
      y=pd.DataFrame(df)
      print(y)
```

```
   a  b
0  1  4
1  2  5
2  3  6
```

### 9. Generate the series of dates from 1st Jan, 2023 to 10th Feb, 2023

Solution :

```
import pandas as pd

x=pd.date_range(start='1-1-2023',end='2-10-2023')

for val in x:

    print(val)
```

```
[28] 2023-01-01 00:00:00
      2023-01-02 00:00:00
      2023-01-03 00:00:00
      2023-01-04 00:00:00
      2023-01-05 00:00:00
      2023-01-06 00:00:00
      2023-01-07 00:00:00
      2023-01-08 00:00:00
      2023-01-09 00:00:00
      2023-01-10 00:00:00
      2023-01-11 00:00:00
      2023-01-12 00:00:00
      2023-01-13 00:00:00
      2023-01-14 00:00:00
      2023-01-15 00:00:00
      2023-01-16 00:00:00
      2023-01-17 00:00:00
      2023-01-18 00:00:00
      2023-01-19 00:00:00
      2023-01-20 00:00:00
      2023-01-21 00:00:00
      2023-01-22 00:00:00
      2023-01-23 00:00:00
      2023-01-24 00:00:00
      2023-01-25 00:00:00
      2023-01-26 00:00:00
      2023-01-27 00:00:00
      2023-01-28 00:00:00
      2023-01-29 00:00:00
      2023-01-30 00:00:00
      2023-01-31 00:00:00
      2023-02-01 00:00:00
      2023-02-02 00:00:00
      2023-02-03 00:00:00
      2023-02-04 00:00:00
      2023-02-05 00:00:00
      2023-02-06 00:00:00
```

```
2023-02-07 00:00:00
2023-02-08 00:00:00
2023-02-09 00:00:00
2023-02-10 00:00:00
```

## 10. Create 2D list to DataFrame

```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

Solution :

```
import pandas as pd

df=pd.DataFrame(lists)

print(df)
```

```
[24] lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

```
[25] df=pd.DataFrame(lists)
      print(df)
```

	0	1	2
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24