

**Assignment -1**  
Python Programming

Assignment Date	19 September 2022
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Maximum Marks	2 Marks

**Question-1:**

**Split this string**

**Solution:**

```
s = "Hi there Sam!"  
print(s.split())  
#-----#  
#-----#
```

```
In [1]: s = "Hi there Sam!"  
  
In [6]: print(s.split())  
['Hi', 'there', 'Sam!']
```

**Question-2:**

Use `.format()` to print the following string.

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

**Solution:**

```
planet = "Earth" diameter  
= 12742  
txt="The diameter of {plt} is {dr} kilometers.".format(plt=planet,dr=diameter) print(txt)  
#-----#  
#-----#
```

```
In [7]: planet = "Earth"
        diameter = 12742

In [8]: txt="The diameter of {plt} is {dr} kilometers.".format(plt=planet,dr=diameter)
        print(txt)

The diameter of Earth is 12742 kilometers.
```

### Question-3:

**In this nest dictionary grab the word "hello"**

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

### Solution:

```
print(d['k1'][3]['tricky'][3]['target'][3])
```

```
In [36]: d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}

In [38]: d['k1'][3]['tricky'][3]['target'][3]

Out[38]: 'hello'
```

### Question-4:

**Numpy:**

```
import numpy as np
```

**4.1 Create an array of 10 zeros? 4.2**

**Create an array of 10 fives?**

### Solution:

```
4.1 array=np.zeros(10)
```

```
print(array)
```

```
4.2 array=np.ones(10)*5
```

```
print(array)
```

```
In [10]: array=np.zeros(10)
print(array)

[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]

In [11]: array=np.ones(10)*5
print(array)

[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

### Question-5:

**Create an array of all the even integers from 20 to 35**

import numpy as np

**Solution:** array=np.arange(20,35,4)

print(array)

```
In [19]: array=np.arange(20,35,4)
print(array)

[20 24 28 32]
```

### Question-6:

**Create a 3x3 matrix with values ranging from 0 to 8**

import numpy as np **Solution:**

array=np.arange(0,9).reshape(3,3)

print(array)

```
In [21]: arr=np.arange(0,9).reshape(3,3)
print(arr)

[[0 1 2]
 [3 4 5]
 [6 7 8]]
```

### Question-7:

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

**Solution:**

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

```
In [22]: a=np.array([1,2,3])  
         b=np.array([4,5,6])  
         np.concatenate([a,b])  
  
Out[22]: array([1, 2, 3, 4, 5, 6])
```

**Question-8:**

**Create a dataframe with 3 rows and 2 columns** import  
pandas as pd

**Solution:**

```
import pandas as pd import numpy as np  
data=pd.DataFrame(index=np.arange(3), columns=np.arange(2))  
print(data)
```

```
In [25]: import pandas as pd  
  
In [27]: data=pd.DataFrame(index=np.arange(3), columns=np.arange(2))  
         print(data)  
  
          0  1  
0  NaN  NaN  
1  NaN  NaN  
2  NaN  NaN
```

### Question-9:

**Generate the series of dates from 1st Jan, 2023 to 10th Feb, 2023**

#### Solution:

```
data=pd.date_range(start="1/1/2023",end="10/2/2023") print(data)
```

```
In [30]: data=pd.date_range(start="1/1/2023",end="10/2/2023")
print(data)
DatetimeIndex(['2023-01-01', '2023-01-02', '2023-01-03', '2023-01-04',
               '2023-01-05', '2023-01-06', '2023-01-07', '2023-01-08',
               '2023-01-09', '2023-01-10',
               ...,
               '2023-09-23', '2023-09-24', '2023-09-25', '2023-09-26',
               '2023-09-27', '2023-09-28', '2023-09-29', '2023-09-30',
               '2023-10-01', '2023-10-02'],
              dtype='datetime64[ns]', length=275, freq='D')
```

### Question-10:

**Create 2D list to DataFrame**

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

#### Solution:

```
data=pd.DataFrame(lists,columns=["s.no","pattern","number"]) print(data)
```

```
In [31]: lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

```
In [32]: data=pd.DataFrame(lists,columns=["s.no","pattern","number"])
print(data)
```

	s.no	pattern	number
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24