

**Assignment -1**  
Python Programming

Assignment Date	08 September 2022
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Maximum Marks	2 Marks

## Basic Python

### 1. Split this string

```
In [27]: s = "Hi there Sam!"
x=s.split()
print(x)

['Hi', 'there', 'Sam!']
```

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

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

```
In [22]: planet = "Earth"
diameter = 12742
'The diameter of {} is {} kilometers.'.format(planet,diameter)
```

```
Out[22]: 'The diameter of Earth is 12742 kilometers.'
```

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

```
In [32]: d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
d['k1'][3]['tricky'][3]['target'][3]

Out[32]: 'hello'
```

## Numpy

```
In [ ]: import numpy as np
```

### 4.1 Create an array of 10 zeros?

### 4.2 Create an array of 10 fives?

```
In [4]: import numpy as np
np_array=np.zeros(10)
np_array
```

```
Out[4]: array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])
```

```
In [8]: import numpy as np
np_array=np.ones(10)*5
np_array
```

```
Out[8]: array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])
```

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

```
In [33]: import numpy as np
array=np.arange(20,35,2)
print("Array of all the even integers from 20 to 35")
print(array)
```

Array of all the even integers from 20 to 35  
[20 22 24 26 28 30 32 34]

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

```
In [16]: import numpy as np
a=np.arange(9)
a
np.arange(9).reshape(3,3)
```

```
Out[16]: array([[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])**

```
In [20]: import numpy as np
a = np.array([1, 2, 3])
b = np.array([4, 5, 6])
arr=np.concatenate((a,b))
print(arr)
```

[1 2 3 4 5 6]

# Pandas

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

```
In [5]: import pandas as pd
data = [['Sam', '23'], ['Vini', '21'], ['Rishi', '3']]
df = pd.DataFrame(data, columns=['people', 'Age'])
df
```

```
Out[5]:
```

	people	Age
0	Sam	23
1	Vini	21
2	Rishi	3

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

```
In [43]: import pandas as pd
pd.date_range("01-01-2023", "10-02-2023")

Out[43]: 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')
```

## 10. Create 2D list to DataFrame

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

```
In [38]: import pandas as pd
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
data=pd.DataFrame(lists)
data
```

```
Out[38]:
```

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