

## Assignment -1

### Basic Python

Assignment Date	9 September 2022
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Student Roll Number	810019104023
Maximum Marks	2 Marks

1. Split this string `s = "Hi there Sam!"`

**Solution:**

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

```
In [1]: s = "Hi there Sam!"
```

```
In [2]: s.split(" ")
```

```
Out[2]: ['Hi', 'there', 'Sam!']
```

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

planet = "Earth" diameter = 12742

Output should be: The diameter of Earth is 12742 kilometers

**Solution:**

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

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

```
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':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
t=d['k1'][3]['tricky'][3]['target'][3]
```

```
In [5]: d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
```

```
In [6]: t=d['k1'][3]['tricky'][3]['target'][3]
t
```

```
Out[6]: 'hello'
```

4.1. Create an array of 10 zeros?

**Solution:**

```
import numpy as np
```

```
a=np.zeros(10)
```

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

```
Out[10]: array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])
```

4.2. Create an array of 10 fives?

**Solution:**

```
b=np.ones(10)*5
```

```
In [11]: b=np.ones(10)*5  
b
```

```
Out[11]: array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])
```

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

**Solution:**

```
e=np.arange(20,35,2)
```

```
In [12]: e=np.arange(20,35,2)  
e
```

```
Out[12]: array([20, 22, 24, 26, 28, 30, 32, 34])
```

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

**Solution:**

```
a=np.arange(9).reshape(3,3)
```

```
In [13]: a=np.arange(9).reshape(3,3)  
a
```

```
Out[13]: 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])
```

**Solution:**

```
a=np.array([1,2,3])
```

```
b=np.array([4,5,6])
```

```
a+b
```

```
In [14]: a=np.array([1,2,3])  
b=np.array([4,5,6])  
a+b
```

```
Out[14]: array([5, 7, 9])
```

8. Create a dataframe with 3 rows and 2 columns

**Solution:**

```
import pandas as pd
```

```
data={'col1':['Apple','Mango','Banana'],'col2':['Grapes','Guava','Orange']}
```

```
df=pd.DataFrame(data)
```

```
In [15]: import pandas as pd
```

```
In [16]: data={'col1':['Apple','Mango','Banana'],'col2':['Grapes','Guava','Orange']}  
df=pd.DataFrame(data)  
df
```

```
Out[16]:
```

	col1	col2
0	Apple	Grapes
1	Mango	Guava
2	Banana	Orange

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

**Solution:**

```
d=pd.date_range('2023-01-01','2023-02-10')
```

```
In [17]: d=pd.date_range('2023-01-01','2023-02-10')  
d
```

```
Out[17]: 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', '2023-01-11', '2023-01-12',  
                        '2023-01-13', '2023-01-14', '2023-01-15', '2023-01-16',  
                        '2023-01-17', '2023-01-18', '2023-01-19', '2023-01-20',  
                        '2023-01-21', '2023-01-22', '2023-01-23', '2023-01-24',  
                        '2023-01-25', '2023-01-26', '2023-01-27', '2023-01-28',  
                        '2023-01-29', '2023-01-30', '2023-01-31', '2023-02-01',  
                        '2023-02-02', '2023-02-03', '2023-02-04', '2023-02-05',  
                        '2023-02-06', '2023-02-07', '2023-02-08', '2023-02-09',  
                        '2023-02-10'],  
                        dtype='datetime64[ns]', freq='D')
```

10. Create 2D list to DataFrame

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

**Solution:**

```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]  
df=pd.DataFrame(lists)
```

```
In [18]: lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

```
In [19]: df=pd.DataFrame(lists)  
df
```

```
Out[19]:
```

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