Assignment - I
Basic Python

Assignment Date	27November 2022
Student Name	Abinaya.J
Student Roll Number	813019205001
Maximum Marks	2 Marks

1. Split this string

s = "Hi there Sam!"

Solution:

```
s.split()
```

Output:

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

In [3]: s.split()

Out[3]: ['Hi', 'there', 'Sam!']
```

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

planet = "Earth"
diameter = 12742

Solution:

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

Output:

```
In [4]: planet = "Earth"
        diameter = 12742

In [5]: print("The diameter of {} is {}".format(planet,diameter))
        The diameter of Earth is 12742
```

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]['tricky'][-1]['target'][-1]
```

Output:

```
In [6]: d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}

In [29]: d['k1'][-1]['tricky'][-1]['target'][-1]

Out[29]: 'hello'
```

4. Numpy

Create an array of 10 zeros?

Create an array of 10 fives?

Solution:

```
import numpy as np
z = np.zeros(10)
z
```

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

Output:

```
In [11]: z = np.zeros(10)
         z

Out[11]: array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])

In [12]: f = np.ones(10)*5
         f

Out[12]: 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:

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

Output:

```
In [27]: r = np.arange(20,35,2)
         r

Out[27]: array([20, 22, 24, 26, 28, 30, 32, 34])
```

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

Solution:

```
td = np.arange(0,9).reshape(3,3)
td
```

Output:

```
In [14]: td = np.arange(0,9).reshape(3,3)
         td

Out[14]: array([[0, 1, 2],
                [3, 4, 5],
                [6, 7, 8]])
```

7. Concatinate 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])
res = np.concatenate((a,b),axis=0)
res
```

Output:

```
In [15]: a= np.array([1,2,3])
         b =np.array([4,5,6])
         res = np.concatenate((a,b),axis=0)
         res

Out[15]: array([1, 2, 3, 4, 5, 6])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

Solution:

```
import pandas as pd
l = [['a','b'],['c','d'],['e','f']]
df = pd.DataFrame(l)
df
```

Output:

```
In [16]: import pandas as pd

In [18]: l = [['a','b'],['c','d'],['e','f']]
         df = pd.DataFrame(l)
         df
```

Out[18]:

	0	1
0	a	b
1	c	d
2	e	f

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

Solution:

```
date_series = pd.date_range(start='1/1/2023', end='02/10/2023')
date_series
```

Output:

In [26]:
```
date_series = pd.date_range(start='1/1/2023', end='02/10/2023')
date_series
```

Out[26]:
```
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]]
res = pd.DataFrame(lists,columns=['val1','val2','val3'])
res
```

Output:

In [20]:
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

In [31]:
```
res = pd.DataFrame(lists,columns=['val1','val2','val3'])
res
```

Out[31]:

	val1	val2	val3
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24