Assignment – 1

Basic Python

Assignment Date	10 September 2022
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Maximum Marks	2 marks

1. Split this string

s = "Hi there Sam!"

Solution:

```
s.split()
```

Output:

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

```
[2]  1  s.split()
```

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

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

```
planet = "Earth"
diameter = 12742
```

Solution:

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

Output:

```
[3]  1  planet = "Earth"
     2  diameter = 12742
```

```
[4]  1  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,'hel
lo']}]}]}
```

Solution:

```
d['k1'][-1]['tricky'][-1]['target'][-1]
```

Output:

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

```
[6]  1  d['k1'][-1]['tricky'][-1]['target'][-1]
```

```
'hello'
```

4.Numpy

4.1 Create an array of 10 zeros?

Solution:

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

Output:

```
[10]  1  np.zeros(10)
```

```
array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])
```

4.2 Create an array of 10 fives?

Solution:

```
import numpy as np
np.ones(10)*5
```

Output:

```
[11]  1  np.ones(10)*5
```

```
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:

```
evenarray = np.arange(20,36,2)
evenarray
```

Output:

```
[13]  1  evenarray = np.arange(20,36,2)
      2  evenarray
```

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

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

Solution:

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

Output:

```
[14]  1  mat = np.arange(0,9).reshape(3,3)
      2  mat
```

```
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])
con1 = np.concatenate((a,b),axis=0)
con1
```

Output:

```
[15]  1  a = np.array([1,2,3])
      2  b = np.array([4,5,6])
      3  con1 = np.concatenate((a,b),axis=0)
      4  con1
```

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

Pandas

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

Solution:

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

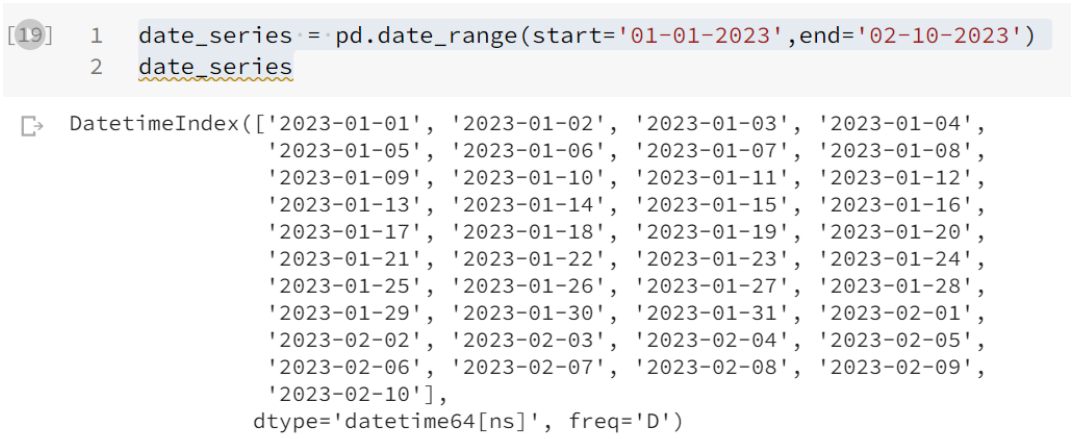
Output:

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

Solution:

```
date_series = pd.date_range(start='01-01-2023',end='02-10-2023')
date_series
```

Output:



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]]
dataframe2D = pd.DataFrame(lists)
dataframe2D
```

Output:

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

```
[21]  1  dataframe2D = pd.DataFrame(lists)
      2  dataframe2D
```

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