

Assignment -1
Python Programming

Assignment Date	08 September 2022
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Maximum Marks	2 Marks

Basic Python

1. Split this string

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

```
In [2]: 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 [ ]: planet = "Earth"  
diameter = 12742
```

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

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

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

hello

Numpy

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

4.1 Create an array of 10 zeros? ¶

4.2 Create an array of 10 fives?

```
In [16]: import numpy as np  
array = np.zeros(10)  
print("An array of 10 zeros:")  
print(array)
```

An array of 10 zeros:
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]

```
In [17]: import numpy as np  
array = np.ones(10)*5  
print("An array of 10 fives:")  
print(array)
```

An array of 10 fives:
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]

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

```
In [22]: import numpy as np  
array = np.arange(20,36,2)  
print(array)
```

[20 22 24 26 28 30 32 34]

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

```
In [26]: import numpy as np
x = np.arange(0,9).reshape(3,3)
print(x)
```

```
[[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])

```
In [27]: import numpy as np
a = np.array([1, 2, 3])
b = np.array([4, 5, 6])
con = np.concatenate((a,b))
print(con)
```

```
[1 2 3 4 5 6]
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

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

```
In [5]: import pandas as pd
data = {'Name': ['Vaishu', 'Suba'], 'Age': ['20', '20']}
df = pd.DataFrame(data)
print(df)
```

```
   Name Age
0  Vaishu  20
1    Suba  20
```

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

```
In [6]: import pandas as pd
a = pd.date_range(start = '1-1-2023', end = '10-2-2023', freq = '2000H')
for value in a:
    print(a)

DatetimeIndex(['2023-01-01 00:00:00', '2023-03-25 08:00:00',
              '2023-06-16 16:00:00', '2023-09-08 00:00:00'],
              dtype='datetime64[ns]', freq='2000H')
DatetimeIndex(['2023-01-01 00:00:00', '2023-03-25 08:00:00',
              '2023-06-16 16:00:00', '2023-09-08 00:00:00'],
              dtype='datetime64[ns]', freq='2000H')
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              '2023-06-16 16:00:00', '2023-09-08 00:00:00'],
              dtype='datetime64[ns]', freq='2000H')
DatetimeIndex(['2023-01-01 00:00:00', '2023-03-25 08:00:00',
              '2023-06-16 16:00:00', '2023-09-08 00:00:00'],
              dtype='datetime64[ns]', freq='2000H')
```

10. Create 2D list to DataFrame

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

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

```
In [7]: import pandas as pd
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
data = (lists)
df=pd.DataFrame(lists)
print(df)
```

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