Assignment-1

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Project Name	AI Based Discourse For Banking Industry
Maximum Marks	2 Marks

Basic Python

1. Split this string

```
s = "Hi there Sam!"
s.split()
```

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

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

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

```
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"

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

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

```
g=d['k1'][3]['tricky'][3]['target'][3]
print(g)
```

```
hello
```

Numpy

```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
#An array of 10 zeros
np.zeros(10)
```

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

```
#An array of 10 fives
np.ones(10)*5
```

```
array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])
```

or

```
a=np.zeros(10)
b=np.ones(10)*5
print("An array of 10 zeros is {}".format(a))
print("An array of 10 fives is {}".format(b))
```

```
An array of 10 zeros is [0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
An array of 10 fives is [5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

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

```
np.arange(20,35,2,dtype=int)
```

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

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

```
import numpy as np
e=np.arange(9)
f=e.reshape(3,3)
print("A 3x3 matrix with values ranging from 0 to 8 is given below")
print("{}".format(f))
```

```
A 3x3 matrix with values ranging from 0 to 8 is given below
[[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])

```
import numpy as pd
a=np.array([1,2,3])
b=np.array([4,5,6])
cc=np.concatenate((a,b),axis=0)
print("Concatination of a and b is {}".format(cc))
```

```
Concatination of a and b is [1 2 3 4 5 6]
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
d=np.arange(6).reshape(3,2)
c=['1','2']
r=['1','2','3']
dataframe=pd.DataFrame(data=d,index=r,columns=c)
```

```
print("A datafram with 3 rows and 2 columns is given below")
print("{}".format(dataframe))
```

```
A datafram with 3 rows and 2 columns is given below
   1 2
1  0  1
2  2  3
3  4  5
```

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

```
import pandas as pd
pd.date_range(start='1st/jan/2023',end='10th/feb/2023',inclusive='both
')
```

```
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]]

```
import pandas as pd
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
df=pd.DataFrame(lists,columns=['S/No','Name','Rollno'])
print(df)
```

```
   S/No Name  Rollno
0     1  aaa      22
1     2  bbb      25
2     3  ccc      24
```