Assignment – 1

Basic Python

Assignment Date	10 September 2022
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Student Roll Number	2019504511
Maximum Marks	2 Marks

1. Split this string

```
s = "Hi there Sam!"
```

Code:

```
print(s.split())
```

Output:

1. Split this string

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

In [5]: print(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
```

Code:

```
print("The diameter of {0} is {1} kilometers.".format(planet,diameter))
```

Output:

```
In [6]: planet = "Earth"
        diameter = 12742

In [11]: print("The diameter of {0} is {1} 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']}]}]}
```

Code:

```
d['k1'][3]['tricky'][3]['target'][3]
```

Output:

```
In [12]: d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}

In [49]: d['k1'][3]['tricky'][3]['target'][3]
Out[49]: 'hello'
```

Numpy

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

Code:

```
import numpy as np

arr=np.zeros(10)
print(arr)

arr=np.ones(10)*5
print(arr)
```

Output:

```
In [15]: import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
In [21]: arr=np.zeros(10)
         print(arr)

[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]

In [22]: arr=np.ones(10)*5
         print(arr)

[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

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

Code:

```
arr=np.arange(20,35,2)
print(arr)
```

Output:

```
In [24]: arr=np.arange(20,35,2)
         print(arr)

         [20 22 24 26 28 30 32 34]
```

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

Code:

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

Output:

```
In [25]: arr=np.arange(0,9).reshape(3,3)
         print(arr)

         [[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])

Code:

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

Output:

```
In [27]: a=np.array([1,2,3])
         b=np.array([4,5,6])
         np.concatenate((a,b),axis=0)

Out[27]: array([1, 2, 3, 4, 5, 6])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

Code:

```
import pandas as pd

arr=[1,2,3]
dataframe=pd.DataFrame(arr,columns=["data"])
print(dataframe)
```

Output:

```
In [28]: import pandas as pd

In [36]: arr=[1,2,3]
         dataframe=pd.DataFrame(arr,columns=["data"])
         print(dataframe)

            data
         0     1
         1     2
         2     3
```

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

Code:

```
date=pd.date_range(start='1-01-2023',end='2-10-2023')
print(date)
```

Output:

```
In [33]: date=pd.date_range(start='1-01-2023',end='2-10-2023')
         print(date)

         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]]

Code:

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

```
dataframe=pd.DataFrame(lists,columns=["number","letter","digit"])
print(dataframe)
```

Output:

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

In [38]:
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

In [40]:
```
dataframe=pd.DataFrame(lists,columns=["number","letter","digit"])
print(dataframe)
```

```
   number letter  digit
0       1    aaa     22
1       2    bbb     25
2       3    ccc     24
```