Assignment -1

Python Programming

Assignment Date	9 September 2022
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Maximum Marks	2 Marks

BASIC PYTHON

Question-1:

Split this string

s = "Hi there Sam!"

Solution:

```
s.split()
```

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

Question-2:

Use .format() to print the following string.

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

planet = "Earth"
diameter = 12742

Solution:

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

```
The diameter of Earth is 12742 kilometers
```

Question-3:

In this nest dictionary grab the word "hello"

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

Solution:

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

hello

NUMPY

import numpy **as** np

Question-4:

1. Create an array of 10 zeros?

Solution:

```
np.zeros(10)
```

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

2. Create an array of 10 fives?

Solution:

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

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

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
In [8]: np.zeros(10)
Out[8]: array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])
In [19]: np.ones(10)*5
Out[19]: array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])
```

Question-5:

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

Solution:

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

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

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

```
In [10]: np.arange(20,35,2)
Out[10]: array([20, 22, 24, 26, 28, 30, 32, 34])
```

Question-6:

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

Solution:

```
np.array([[0,1,2],[3,4,5],[6,7,8]])
```

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

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

```
In [11]: np.array([[0,1,2],[3,4,5],[6,7,8]])
Out[11]: array([[0, 1, 2],
                [3, 4, 5],
                [6, 7, 8]])
```

Question-7:

Concatenate 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])

np.concatenate((a,b))

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

7. Concatenate a and b

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

```
In [12]: a=np.array([1,2,3])
         b=np.array([4,5,6])
         np.concatenate((a,b))

Out[12]: array([1, 2, 3, 4, 5, 6])
```

PANDAS

Question-8:

Create a dataframe with 3 rows and 2 columns

import pandas as pd

Solution:

```
data = {
"length": [102,125,195],
"width": [20,15,95]
}

#load data into a DataFrame object:
df = pd.DataFrame(data)

print(df)
```

	length	width
0	102	20
1	125	15
2	195	95

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [13]:
```
import pandas as pd
```

In [14]:
```
data = [['a',10],['b',20],['c',30]]
df = pd.DataFrame(data, columns=['Alpabet','Values'])
print(df)
```

```
  Alpabet  Values
0       a      10
1       b      20
2       c      30
```

Question-9:

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

Solution:

```
pd.date_range(start='1/1/2023',end='2/10/2023')
```

```
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')
```

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

In [15]:
```
pd.date_range(start='1/1/2023',end='2/10/2023')
```

Out[15]:
```
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')
```

Question-10:

Create 2D list to DataFrame

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

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

Solution:

pd.DataFrame(lists)

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

10. Create 2D list to DataFrame

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

In [16]:
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

In [17]:
```
pd.DataFrame(lists)
```

Out[17]:

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