Assignment -1

Python Programming

Assignment Date	:	12-09-2022
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Maximum Marks	:	4 Marks

Basic Python

Question-1:

Split this string

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

Solution:

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

Output:

1. Split this string

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

```
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

print("The diameter of {} is {} Kilometers.".format(planet,diameter))
```

Solution:

The diameter of Earth is 12742 kilometers.

Output:

▾ 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.
```

Question-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'][3]['tricky'][3]['target'][3]
```

Solution:

hello

Output:

▾ 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'][3]['tricky'][3]['target'][3]
```

```
'hello'
```

Numpy

Question-4:

```
import  numpy  as  np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

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

Solution:

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

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

Output:

Numpy

```
[ ] import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

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

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

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

```
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

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

Solution:

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

Output:

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

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

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

Question-6:

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

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

Solution:

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

Output:

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

```
[ ]  np.arange(0,9).reshape(3,3)
```

```
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])
```

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

Solution:

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

Output:

▾ 7. Concatenate a and b

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

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

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

Pandas

Question-8:

```
import pandas as pd
```

Create a dataframe with 3 rows and 2 columns

```
import pandas as pd

d={"ID":[4001,4002,4003],"NAME":["abi","aishu","aathi"]}

df=pd.DataFrame(d)
df
```

Solution:

	ID	NAME
0	4001	abi
1	4002	aishu
2	4003	aathi

Output:

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
[ ] import pandas as pd
```

```
[ ] d={"ID":[4001,4002,4003],"NAME":["abi","aishu","aathi"]}

    df=pd.DataFrame(d)
    df
```

	ID	NAME
0	4001	abi
1	4002	aishu
2	4003	aathi

Question-9

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

```
date_series=pd.Series(pd.date_range("2023-01-01","2023-02-10"))
date_series
```

Solution:

```
0  2023-01-01
1  2023-01-02
2  2023-01-03
3  2023-01-04
4  2023-01-05
5  2023-01-06
6  2023-01-07
7  2023-01-08
8  2023-01-09
9  2023-01-10
10 2023-01-11
11 2023-01-12
12 2023-01-13
13 2023-01-14
14 2023-01-15
15 2023-01-16
16 2023-01-17
17 2023-01-18
18 2023-01-19
19 2023-01-20
20 2023-01-21
21 2023-01-22
22 2023-01-23
23 2023-01-24
24 2023-01-25
25 2023-01-26
26 2023-01-27
27 2023-01-28
28 2023-01-29
29 2023-01-30
30 2023-01-31
31 2023-02-01
32 2023-02-02
33 2023-02-03
34 2023-02-04
35 2023-02-05
36 2023-02-06
37 2023-02-07
38 2023-02-08
39 2023-02 -09
40 2023-02-10
dtype: datetime64[ns]
```

Output:

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

```
date_series=pd.Series(pd.date_range("2023-01-01","2023-02-10"))
date_series
```

```
0    2023-01-01
1    2023-01-02
2    2023-01-03
3    2023-01-04
4    2023-01-05
5    2023-01-06
6    2023-01-07
7    2023-01-08
8    2023-01-09
9    2023-01-10
10   2023-01-11
11   2023-01-12
12   2023-01-13
13   2023-01-14
14   2023-01-15
15   2023-01-16
16   2023-01-17
17   2023-01-18
18   2023-01-19
19   2023-01-20
20   2023-01-21
21   2023-01-22
22   2023-01-23
23   2023-01-24
24   2023-01-25
25   2023-01-26
26   2023-01-27
27   2023-01-28
28   2023-01-29
29   2023-01-30
30   2023-01-31
31   2023-02-01
32   2023-02-02
33   2023-02-03
34   2023-02-04
35   2023-02-05
36   2023-02-06
37   2023-02-07
38   2023-02-08
39   2023-02-09
40   2023-02-10
dtype: datetime64[ns]
```

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]]

list1=zip(lists)
df=pd.DataFrame(list1)
df
```

Solution:

	0
0	[1, aaa, 22]
1	[2, bbb, 25]
2	[3, ccc, 24]

Output:

▾ 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]]
```

```
[ ] list1=zip(lists)
    df=pd.DataFrame(list1)
    df
```

	0
0	[1, aaa, 22]
1	[2, bbb, 25]
2	[3, ccc, 24]