Assignment 1

Assignment Date	13 September 2022
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Maximum Marks	2 Marks

Basic Python

Question-1:

Split the string

s = "Hi there Sam!"

Solution:

```
string = "Hi there Sam!"
print(string.split())
```


- Basic Python

- 1. Split this string

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

[ ]  string = "Hi there Sam!"
     print(string.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:

```
planet = "Earth"
diameter = 12742

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

#or, you can do it like that:

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

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

```
[ ]  planet = "Earth"
     diameter = 12742
```

```
[ ]  planet = "Earth"
     diameter = 12742

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

     #or, you can do it like that:

     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:

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

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

     hello
```

NumPy

Question-4:

import numpy as np

4.1 Create an array of 10 zeros?

Solution:

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

```
[ ]  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.]
```

4.2 Create an array of 10 fives?

Solution:

```
array=np.ones(10)*5
print("An array of 10 fives:")
print(array)
```

```
[ ]  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.]
```

Question-5:

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

Solution:

```
import numpy as np
array=np.arange(20,35,2)
print("Array of all the even integers from 20 to 35")
print(array)
```

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

```
[ ]  import numpy as np
     array=np.arange(20,35,2)
     print("Array of all the even integers from 20 to 35")
     print(array)

     Array of all the even integers from 20 to 35
     [20 22 24 26 28 30 32 34]
```

Question-6:

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

Solution:

```python
import numpy as np
x =  np.arange(0, 9).reshape(3,3)
print(x)
```

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

```python
import numpy as np
x =  np.arange(0, 9).reshape(3,3)
print(x)

[[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:

```python
import numpy as np

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

print(a)
print(b)
```

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

```python
import numpy as np

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

print(a)
print(b)

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

Pandas

Question-8:

Create a dataframe with 3 rows and 2 columns

```python
import pandas as pd
```

Solution:

```python
# Import pandas library

import pandas as pd


# initialize list of lists

data = [['dhoni', 41], ['kohli', 34], ['rohit',35 ]]


# Create the pandas DataFrame

df = pd.DataFrame(data, columns=['Name', 'Age'])


# print dataframe.
df
```


Question-9:

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

Solution:

```python
# importing pandas as pd

import pandas as pd


per1 = pd.date_range(start ='01-01-2023',
```

```python
        end ='10-02-2023', freq ='5H')
```

```python
for val in per1:

    print(val)
```

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

```python
# importing pandas as pd
import pandas as pd


per1 = pd.date_range(start ='01-01-2023',

        end ='10-02-2023', freq ='5H')


for val in per1:

    print(val)
```

```
2023-07-09 14:00:00
2023-07-09 19:00:00
2023-07-10 00:00:00
2023-07-10 05:00:00
2023-07-10 10:00:00
2023-07-10 15:00:00
2023-07-10 20:00:00
2023-07-11 01:00:00
2023-07-11 06:00:00
2023-07-11 11:00:00
2023-07-11 16:00:00
2023-07-11 21:00:00
2023-07-12 02:00:00
2023-07-12 07:00:00
```

Question-10:

Create 2D list to DataFrame

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

Solution:

Import pandas library

import pandas as pd

initialize list of lists

data = [['aaa', 22], ['bbb', 25], ['ccc', 24]]

Create the pandas DataFrame

```
df = pd.DataFrame(data, columns = ['Name', 'Age'])

# print dataframe.

print(df )
```

▾ 10. Create 2D list to DataFrame

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

Double-click (or enter) to edit

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

```
# Import pandas library

import pandas as pd

# initialize list of lists

data = [['aaa', 22], ['bbb', 25], ['ccc', 24]]

# Create the pandas DataFrame

df = pd.DataFrame(data, columns = ['Name', 'Age'])

# print dataframe.

print(df )
```

```
     Name  Age
0    aaa   22
1    bbb   25
2    ccc   24
```