

Assignment 1

Assignment Date	13 September 2022
Student Name	B. Mohanavel
Student Roll no.	510919106012
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)
```

▼ 4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
[ ] 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:

```
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

```
[ ] 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:

```
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])

```
[ ] 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

```
import pandas as pd
```

Solution:

```
# 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
```

▼ 8. Create a dataframe with 3 rows and 2 columns

```
[ ] import pandas as pd

# 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
```

	Name	Age
0	dhoni	41
1	kohli	34
2	rohit	35

Question-9:

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

Solution:

```
# 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)
```

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

```
# 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
2023-07-12 12:00:00

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]]
```

```
1 # 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
```