

Assignment -1

Python Programming

| | |
|---------------------|------------------|
| Assignment Date | 9 September 2022 |
| Student Name | ABINAYA |
| Student Roll Number | 211419205003 |
| Maximum Marks | 2 Marks |

BASIC PYTHON

Question-1:

Split this string

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

Solution:

```
s.split()
```

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

Basic Python

1. Split this string

```
[1] 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
```

Solution:

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

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

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

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

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

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

```
□ 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
```

```
3. In this nest dictionary grab the word "hello"

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

```
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.])
```

```
▾ Numpy

[9] import numpy as np

▾ 4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

[10] 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

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

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

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

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

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])
```

```
✓ 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:

Create a dataframe with 3 rows and 2 columns **import**
pandas **as** pd

Solution: data = {

 "calories": [420, 380, 390],

 "duration": [50, 40, 45]

}

#load data into a DataFrame object:

```
df = pd.DataFrame(data) print(df)
```

```
calories duration  
0 420      50 1  
  380      40 2  
  390      45
```

▼ Pandas

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

```
✓ import pandas as pd
```

```
✓ data = {  
    "num1": [1, 2, 3],  
    "num2": [4, 5, 6]  
}  
df = pd.DataFrame(data)
```

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

```
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')
```

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]]
```

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

```
pd.DataFrame(lists)
```

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