

## Assignment -1

### Python Programming

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#### Question-1:

1. Split this string

#### Solution:

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

## Basic Python

1. Split this string

```
In [ ]: s = "Hi there Sam!"  
  
In [ ]: print(s.split())  
['Hi', 'there', 'Sam!']
```

#### Question-2:

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

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

#### Solution:

```
planet = "Earth"  
diameter = 12742  
print("The diameter of {planet} is {diameter} kilometers.")
```

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

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

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

In [ ]: print(f"The diameter of {planet} is {diameter} kilometers.")

The diameter of Earth is 12742 kilometers.
```

### Question-3:

3. In this nest dictionary grab the word "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"

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

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

hello
```

### Question-4:

## Numpy

#### Solution:

```
import numpy as np
```

## 4.1 Create an array of 10 zeros?

## 4.2 Create an array of 10 fives?

### Solution:

```
arr0 = [0] * 9
print (arr0)

[0, 0, 0, 0, 0, 0, 0, 0, 0]

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.]
```

---

## 4.1 Create an array of 10 zeros?

## 4.2 Create an array of 10 fives?

```
In [ ]: arr0 = [0] * 9
        print (arr0)

[0, 0, 0, 0, 0, 0, 0, 0, 0]

In [ ]: 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:

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

### Solution:

```
import numpy as np
array=np.arange(20,36,2)
print(array)
```

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

```
In [ ]: import numpy as np
        array=np.arange(20,36,2)
        print(array)

[20 22 24 26 28 30 32 34]
```

#### Question-6:

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

#### Solution:

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

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

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

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

#### Question-7:

### 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))
```

### 7. Concatenate a and b

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

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

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

Question-8:

## Pandas

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

**Solution:**

```
import pandas as pd
```

```
data = {'Name':['Tom', 'nick', 'krish', 'jack'], 'Age':[20, 21, 19, 18]}
```

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

```
print(df)
```

## Pandas

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

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

```
In [ ]: data = {'Name':['Tom', 'nick', 'krish', 'jack'], 'Age':[20, 21, 19, 18]}
        df = pd.DataFrame(data)
        print(df)
```

	Name	Age
0	Tom	20
1	nick	21
2	krish	19
3	jack	18

Question-9:

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

**Solution:**

```
dates = pd.date_range('2023-01-01', '2023-02-10')
```

```
pd.Series(data=dates)
```

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

```
In [ ]: dates = pd.date_range('2023-01-01', '2023-02-10')
pd.Series(data=dates)
```

```
Out[ ]: 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:

## 10. Create 2D list to DataFrame

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

### Solution:

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

```
values=lists
```

```
pd.DataFrame(values)
```

### 10. Create 2D list to DataFrame

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

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

```
In [ ]: values=lists
pd.DataFrame(values)
```

```
Out[ ]:   0   1   2
0  1  aaa  22
1  2  bbb  25
2  3  ccc  24
```