

**Assignment -1**  
***Python Programming***

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Team ID	PNT2022TMID14214
Project Name	AI BASED DISCOURSE FOR BANKING INDUSTRY
Student Name	B.CHERRISH
Student Roll Number	111619104012

**Question-1.**

Split this string

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

**Solution:**

```
s.split(' ')
```

```
✓ [2] s = "Hi there Sam!"
0s

✓ [3] s.split(' ')
0s

▶ ['Hi', 'there', 'Sam!']
```

**Question-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 {} is {} kilometers.' .format(planet,diameter) ) ;
```

```

✓ [5] 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']}]}]}
```

### Solution:

```
d['k1'][3]['tricky'][3]['target'][3]
```

```

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

✓ d['k1'][3]['tricky'][3]['target'][3]

'hello'

```

### Question-4.

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)

```

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

✓  
0s



```
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:**

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

✓  
0s

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

✓  
0s



```
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)
```

✓  
0s

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

✓  
0s

```
import numpy as np
matrix = np.arange(0, 9).reshape(3,3)
matrix
```

➞ 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:

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

✓  
0s

```
import numpy as np

a = np.array([1, 2, 3])

b= np.array([4, 5, 6])

array = np.concatenate((a, b))
array
```

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

#### Question-8.

Create a dataframe with 3 rows and 2 columns

#### Solution:

```
import pandas as pd
di = {'a': [1, 'df1'], 'b': [2, 'df2'], 'c': [3, 'df3']}
df = pd.DataFrame(di)
df
```

In [5]: `import pandas as pd`

In [37]: `di = {'a': [1, 'df1'], 'b': [2, 'df2'], 'c': [3, 'df3']}`  
`df = pd.DataFrame(di)`  
`df`

Out[37]:

	a	b	c
0	1	2	3
1	df1	df2	df3

### Question-9.

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

### Solution:

```
dates = pd.date_range("1/1/2023", "10/02/2023")
dates
```

✓  
0s

```
▶ dates = pd.date_range("1/1/2023", "10/02/2023")
dates
```

```
↳ 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',
                  ...,
                  '2023-09-23', '2023-09-24', '2023-09-25', '2023-09-26',
                  '2023-09-27', '2023-09-28', '2023-09-29', '2023-09-30',
                  '2023-10-01', '2023-10-02'],
                  dtype='datetime64[ns]', length=275, freq='D')
```

### Question-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]]
```

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

```
df
```

✓  
0s

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

✓  
0s

```
[22] df = pd.DataFrame(lists)  
df
```

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

