

## Basic Python

1. Split this string

CODE:

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

ANS:

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

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

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

CODE:

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

ANS:

The diameter of Earth is 12742 kilometers.

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

CODE:

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

ANS:

Hello

## NUMPY

- 4.1 Create an array of 10 zeros?

CODE:

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

ANS:

```
An array of 10 zeros:  
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

#### 4.2 Create an array of 10 fives?

CODE:

```
array=np.ones(10)

print("An array of 10 ones:")

print(array)
```

ANS:

An array of 10 ones:

```
[1. 1. 1. 1. 1. 1. 1. 1. 1. 1.]
```

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

CODE:

```
array=np.arange(20,35,2)

print("Array of all the even integers from 20 to 35")

print(array)
```

ANS:

Array of all the even integers from 20 to 35

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

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

CODE:

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

ANS:

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

#### 7. Concatenate a and b

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

CODE:

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

ANS:

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

## PANDAS

8. Create a dataframe with 3 rows and 2 columns

CODE:

```
import pandas as pd
data = [10,20,30]
df = pd.DataFrame(data, columns=['Numbers'])
print(df)
```

ANS:

Numbers

0	10
1	20
2	30

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

CODE:

```
import pandas as pd
from datetime import datetime
pd.date_range(start="2023-01-01",end="2023-02-10")
```

ANS:

```
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')
```

10. Create 2D list to DataFrame

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

CODE:

```
import pandas as pd
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
df = pd.DataFrame(lists, columns =['num', 'name','no'])
print(df)
```

ANS:

	num	name	no
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24