

## ▼ Basic Python

### ▼ 1. Split this string

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

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

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

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

### ▼ 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'][3]['tricky'][3]['target'][3]  
  
'hello'
```

## ▼ Numpy

```
import numpy as np
```

## ▼ 4.1 Create an array of 10 zeros?

### 4.2 Create an array of 10 fives?

```
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.])
```

## ▼ 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])
```

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

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

```
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])
```

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

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

## ▼ Pandas

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

```
import pandas as pd
```

```
data = [['Mahadevan', 'CSE'], ['Selvamani', 'CSE'], ['Vikram', 'CSE']]
df = pd.DataFrame(data, columns=['NAME', 'BRANCH'])
print(df)
```

	NAME	BRANCH
0	Mahadevan	CSE
1	Selvamani	CSE
2	Vikram	CSE

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

```
pd.date_range(start="01-01-2023",end="10-02-2023")
```

```
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',
               ...,
               '2023-09-23', '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')
```

## ▼ 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]]
```

```
df = pd.DataFrame(lists, columns=['d1', 'd2', 'd3'])
print(df)
```

	d1	d2	d3
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24

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