

## ▼ Basic Python

### ▼ 1. Split this string

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

```
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
```

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

```
The diameter of Earth is 12742 kilmometers.
```

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

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

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

```
g=d['k1'][3]['tricky'][3]['target'][3]
print(g)
```

```
hello
```

## ▼ Numpy

```
import numpy as np
```

### ▼ 4.1 Create an array of 10 zeros?

### 4.2 Create an array of 10 fives?

```
#An array of 10 zeros
np.zeros(10)
```

```
array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])
```

```
#An array of 10 fives
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,dtype=int)

array([20, 22, 24, 26, 28, 30, 32, 34])
```

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

```
import numpy as np
e=np.arange(9)
f=e.reshape(3,3)
print("A 3x3 matrix with values ranging from 0 to 8 is given below")
print("{}".format(f))

A 3x3 matrix with values ranging from 0 to 8 is given below
[[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])
```

```
import numpy as np
a=np.array([1,2,3])
b=np.array([4,5,6])
cc=np.concatenate((a,b),axis=0)
print("Concatination of a and b is {}".format(cc))

Concatination of a and b is [1 2 3 4 5 6]
```

## ▼ Pandas

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

```
import pandas as pd
d=np.arange(6).reshape(3,2)
c=['2','4']
r=['2','4','6']
dataframe=pd.DataFrame(data=d,index=r,columns=c)
print("A datafram with 3 rows and 2 columns is given below")
print("{}".format(dataframe))

A datafram with 3 rows and 2 columns is given below
   2  4
2  0  1
4  2  3
6  4  5
```

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

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

```
[Timestamp('2023-01-01 00:00:00', freq='D'),
 Timestamp('2023-01-02 00:00:00', freq='D'),
 Timestamp('2023-01-03 00:00:00', freq='D'),
 Timestamp('2023-01-04 00:00:00', freq='D'),
 Timestamp('2023-01-05 00:00:00', freq='D'),
 Timestamp('2023-01-06 00:00:00', freq='D'),
 Timestamp('2023-01-07 00:00:00', freq='D'),
 Timestamp('2023-01-08 00:00:00', freq='D'),
 Timestamp('2023-01-09 00:00:00', freq='D'),
 Timestamp('2023-01-10 00:00:00', freq='D'),
 Timestamp('2023-01-11 00:00:00', freq='D'),
 Timestamp('2023-01-12 00:00:00', freq='D'),
 Timestamp('2023-01-13 00:00:00', freq='D'),
 Timestamp('2023-01-14 00:00:00', freq='D'),
 Timestamp('2023-01-15 00:00:00', freq='D'),
 Timestamp('2023-01-16 00:00:00', freq='D'),
 Timestamp('2023-01-17 00:00:00', freq='D'),
 Timestamp('2023-01-18 00:00:00', freq='D'),
 Timestamp('2023-01-19 00:00:00', freq='D'),
 Timestamp('2023-01-20 00:00:00', freq='D'),
 Timestamp('2023-01-21 00:00:00', freq='D'),
 Timestamp('2023-01-22 00:00:00', freq='D'),
 Timestamp('2023-01-23 00:00:00', freq='D'),
 Timestamp('2023-01-24 00:00:00', freq='D'),
 Timestamp('2023-01-25 00:00:00', freq='D'),
 Timestamp('2023-01-26 00:00:00', freq='D'),
 Timestamp('2023-01-27 00:00:00', freq='D'),
 Timestamp('2023-01-28 00:00:00', freq='D'),
 Timestamp('2023-01-29 00:00:00', freq='D'),
 Timestamp('2023-01-30 00:00:00', freq='D'),
 Timestamp('2023-01-31 00:00:00', freq='D'),
 Timestamp('2023-02-01 00:00:00', freq='D'),
 Timestamp('2023-02-02 00:00:00', freq='D'),
 Timestamp('2023-02-03 00:00:00', freq='D'),
 Timestamp('2023-02-04 00:00:00', freq='D'),
 Timestamp('2023-02-05 00:00:00', freq='D'),
 Timestamp('2023-02-06 00:00:00', freq='D'),
 Timestamp('2023-02-07 00:00:00', freq='D'),
 Timestamp('2023-02-08 00:00:00', freq='D'),
 Timestamp('2023-02-09 00:00:00', freq='D'),
 Timestamp('2023-02-10 00:00:00', freq='D')]
```

## ▼ 10. Create 2D list to DataFrame

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

Double-click (or enter) to edit

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

```
import pandas as pd
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
df=pd.DataFrame(lists,columns=['S/No','Name','Rollno'])
print(df)
```

	S/No	Name	Rollno
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24

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