

## ▼ Basic Python

### ▼ 1. Split this string

```
s = "Hi there Sam!"

print (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

op="The diameter of {} is {} kilometers"
print(op.format(planet,diameter))

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']}]}]}

print(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

```
import numpy as np
array=np.arange(20,36,2)
print(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
x = np.arange(0, 9).reshape(3,3)
print(x)

[[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])
print(np.append(a,b))
```

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

## ▼ Pandas

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

```
import pandas as pd
```

```
data = [{'A': 10, 'B': 20}, {'A': 100, 'B': 200}, {'A': 20, 'B': 120}]  
df = pd.DataFrame(data)  
df
```

|   | A   | B   |
|---|-----|-----|
| 0 | 10  | 20  |
| 1 | 100 | 200 |
| 2 | 20  | 120 |

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

```
d= pd.date_range(start = '1-1-2023', end ='02-10-2023')  
s=pd.Series(d)  
print(s)
```

|    |            |
|----|------------|
| 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]

```

## ▼ 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)
df
```

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

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