

▼ 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

print(f"The diameter of {planet} is {diameter} kilometers")

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?

```
Array = np.zeros(10)
print (Array)
```

```
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

```
Array=np.ones(10)*5
print(Array)
```

```
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

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

```
Array=np.arange (20, 35, 2)
print (Array)
```

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

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

```
Array=np.arange(0,9).reshape (3,3)
print(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])
c = np.concatenate((a,b))
print(c)
```

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

▼ Pandas

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

```
import pandas as pd
```

```
rs = [[ 'Blue',1],[ 'Black', 2],[ 'Yellow',3]]  
df = pd.DataFrame(rs, columns=[ 'Colour', 'Number'])  
print(df)
```

| | Colour | Number |
|---|--------|--------|
| 0 | Blue | 1 |
| 1 | Black | 2 |
| 2 | Yellow | 3 |

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

```
date = pd.date_range (start= '01-01-2023', end="02-10-2023")  
r = pd.Series(date)  
print(r)
```

| | |
|----|------------|
| 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]]
```

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

| | S.No | Name | Age |
|---|------|------|-----|
| 0 | 1 | aaa | 22 |
| 1 | 2 | bbb | 25 |
| 2 | 3 | ccc | 24 |

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