

▼ Basic Python

▼ 1. Split this string

```
s = "Hi there Sam!"

x = s.split()
print(x)

['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("The diameter of {} is {} kilometers.".format('Earth', 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, dtype = 'int')  
  
array([0, 0, 0, 0, 0, 0, 0, 0, 0, 0])
```

```
np.ones(10, dtype = 'int')*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])
```

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

▼ Pandas

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

```
import pandas as pd
```

```
s1=pd.Series(np.random.rand(2))
s2=pd.Series(np.random.rand(2))
s3=pd.Series(np.random.rand(2))
df = pd.DataFrame([s1, s2, s3])
```

```
df
```

	0	1
0	0.574896	0.162615
1	0.089249	0.578729
2	0.151687	0.772689

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

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

```
series=pd.Series(s)
```

```
series
```

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]	[2, bbb, 25]	[3, ccc, 24]

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