

▼ 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('The diameter of {planet} is {diameter} kilometers.'.format(planet=planet,diameter=d

    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.])

5*np.ones(10)

array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])
```

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

```
a = []
for i in range(20,35):
    if(i%2==0):
        a.append(i)
a

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

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

```
a = [i for i in range(0,9)]
np.random.choice(a, size=(3, 3))

array([[0, 7, 6],
       [4, 0, 6],
       [4, 7, 7]])
```

▼ 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
```

```
df = pd.DataFrame([[1, 'aaa'], [2, 'bbb'], [3, 'ccc']])
df
```

	0	1
0	1	aaa
1	2	bbb
2	3	ccc

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

```
pd.date_range(start = '1-1-2023',
              end = '10-02-2023', freq = '1D')

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)
df
```

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

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