

▼ 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 {planet} is {diameter} kilometers.'.format(planet="Earth",diameter=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']}]}]}

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

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('The array with 10 zeros:')
print(array)
```

```
The array with 10 zeros:
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

```
array=np.ones(10)*5
print('The array with 10 fives:')
print(array)
```

```
The array with 10 fives:
[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('The array of all the even integer from 20 to 35:')
print(array)
```

```
The array of all the even integer from 20 to 35:
[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('The matrix with values ranges from 0 to 8:')
print(array)
```

```
The matrix with values ranges from 0 to 8:
```

```
[[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])
x=np.concatenate((a,b),axis=0)
print('The concatenation of two array a and b:')
print(x)

```

```

The concatenation of two array a and b:
[1 2 3 4 5 6]

```

▼ Pandas

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

```

import pandas as pd

data = [['hari', 10], ['karthi', 15], ['aswin', 14]]
df = pd.DataFrame(data,columns=['Name','Age'])
print('The dataframe with 3 rows and 2 columns:')
print(df)

```

```

The dataframe with 3 rows and 2 columns:
   Name  Age
0   hari   10
1  karthi   15
2   aswin   14

```

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

```

import datetime
from datetime import datetime
pd.date_range(start="2023-01-01",end="2023-02-10").to_pydatetime().tolist()

[datetime.datetime(2023, 1, 1, 0, 0),
 datetime.datetime(2023, 1, 2, 0, 0),
 datetime.datetime(2023, 1, 3, 0, 0),
 datetime.datetime(2023, 1, 4, 0, 0),
 datetime.datetime(2023, 1, 5, 0, 0),
 datetime.datetime(2023, 1, 6, 0, 0),
 datetime.datetime(2023, 1, 7, 0, 0),
 datetime.datetime(2023, 1, 8, 0, 0),
 datetime.datetime(2023, 1, 9, 0, 0),
 datetime.datetime(2023, 1, 10, 0, 0)]

```

```

datetime.datetime(2023, 1, 10, 0, 0),
datetime.datetime(2023, 1, 11, 0, 0),
datetime.datetime(2023, 1, 12, 0, 0),
datetime.datetime(2023, 1, 13, 0, 0),
datetime.datetime(2023, 1, 14, 0, 0),
datetime.datetime(2023, 1, 15, 0, 0),
datetime.datetime(2023, 1, 16, 0, 0),
datetime.datetime(2023, 1, 17, 0, 0),
datetime.datetime(2023, 1, 18, 0, 0),
datetime.datetime(2023, 1, 19, 0, 0),
datetime.datetime(2023, 1, 20, 0, 0),
datetime.datetime(2023, 1, 21, 0, 0),
datetime.datetime(2023, 1, 22, 0, 0),
datetime.datetime(2023, 1, 23, 0, 0),
datetime.datetime(2023, 1, 24, 0, 0),
datetime.datetime(2023, 1, 25, 0, 0),
datetime.datetime(2023, 1, 26, 0, 0),
datetime.datetime(2023, 1, 27, 0, 0),
datetime.datetime(2023, 1, 28, 0, 0),
datetime.datetime(2023, 1, 29, 0, 0),
datetime.datetime(2023, 1, 30, 0, 0),
datetime.datetime(2023, 1, 31, 0, 0),
datetime.datetime(2023, 2, 1, 0, 0),
datetime.datetime(2023, 2, 2, 0, 0),
datetime.datetime(2023, 2, 3, 0, 0),
datetime.datetime(2023, 2, 4, 0, 0),
datetime.datetime(2023, 2, 5, 0, 0),
datetime.datetime(2023, 2, 6, 0, 0),
datetime.datetime(2023, 2, 7, 0, 0),
datetime.datetime(2023, 2, 8, 0, 0),
datetime.datetime(2023, 2, 9, 0, 0),
datetime.datetime(2023, 2, 10, 0, 0)]

```

▼ 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, columns=['column1', 'column2', 'column3'])
print('The 2D list of dataframe:')
print(df)

```

```

The 2D list of dataframe:
   column1 column2 column3
0         1     aaa      22
1         2     bbb      25
2         3     ccc      24

```

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