

▼ Basic Python

▼ 1. Split this string

```
s = "Hi there Sam!"
```

```
x = s.split()
```

```
print(x)
```

```
['Hi', 'there', 'Sam!']
```

italicized text ## 2. Use .format() to print the following string.

▼ Output should be: The diameter of Earth is 12742 kilometers.

```
planet = "Earth"
```

```
diameter = 12742
```

```
planet = "Earth"
```

```
diameter = 12742
```

```
print( 'The diameter of {} is {} kilometers.' .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']}]}]}
```

```
lst = [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]
```

```
a=lst[3][1][2];
```

```
print(a)
```

```
['hello']
```

▼ Numpy

```
import numpy as np
```

▼ 4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
import numpy as np
array=np.zeros(10)
print("An array of 10 zeros:")
print(array)
```

```
An array of 10 zeros:
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

```
array=np.ones(10)*5
print("An array of 10 fives:")
print(array)
```

```
An array of 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

```
import numpy as np
array=np.arange(20,36,2)
print("Array of all the even integers from 30 to 70")
print(array)
```

```
Array of all the even integers from 30 to 70
[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])  
np.concatenate((a, b.T), axis=None)
```

```
array([1, 2, 3, 4, 5, 6])
```

▼ Pandas

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

```
import pandas as pd
```

```
import pandas as pd  
data = [10,20,30]  
df = pd.DataFrame(data, columns=['Numbers'])  
df
```

	Numbers
0	10
1	20
2	30

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

```
import pandas as pd  
from datetime import datetime
```

```
pd.date_range(end = datetime.today(), periods = 100).to_pydatetime().tolist()
```

```
pd.date_range(start="2023-01-01",end="2023-02-01")
```

```
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', '2023-01-11', '2023-01-12',
               '2023-01-13', '2023-01-14', '2023-01-15', '2023-01-16',
               '2023-01-17', '2023-01-18', '2023-01-19', '2023-01-20',
               '2023-01-21', '2023-01-22', '2023-01-23', '2023-01-24',
               '2023-01-25', '2023-01-26', '2023-01-27', '2023-01-28',
               '2023-01-29', '2023-01-30', '2023-01-31', '2023-02-01'],
              dtype='datetime64[ns]', 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, columns =['A', 'B','C'])
print(df )
```

```

   A  B  C
0  1  aaa  22
1  2  bbb  25
2  3  ccc  24
```

