

## Basic Python

### 1. Split this string

```
s = "Hi there Sam!"

s="Hi there Sam!"
s=s.split()
print(s);

['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

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

```
array=np.arange(20,35,  
print("Array of all the even integers from 20 to 35")  
print(array)
```

Array of all the even integers from 20 to 35  
[20 21 22 23 24 25 26 27 28 29 30 31 32 33 34]

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

```
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, 4]])  
b = np.array([[5, 6]])  
np.concatenate((a, b), axis=0)  
  
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 = [['tom', 10], ['nick', 15], ['juli', 14]]  
df = pd.DataFrame(data, columns=['Name', 'Age'])  
df
```

```
   Name  Age  
0   tom   10
```

```
1  nick    15
2  juli    14
```

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

```
import pandas as pd
```

```
per1 = pd.date_range(start = '1-1-2023',
                      end = '10-02-2023')
```

```
for val in per1:
    print(val)
```

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```

## 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=['index', 'Tag', 'number'])
print(df)
```

	index	Tag	number
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24