

# Basic Python

## 1. Split this string

In [ ]:

```
txt= "Hi there Sam!"
```

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

In [ ]:

```
txt= "Hi there Sam!"  
x = txt.split()
```

```
print(x)
```

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

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

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

In [ ]:

```
planet = "Earth"  
diameter = 12742
```

In [ ]:

```
planet = "Earth"  
diameter = 12742
```

```
txt1 = "The diameter of {planet} is {diameter} kilometers.".format(planet = "Earth", diameter = 12742)  
print(txt1)
```

```
The diameter of Earth is 12742 kilometers.
```

## 3. In this nest dictionary grab the word "hello"

In [ ]:

```
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
```

Out[ ]:

```
'hello'
```

In [ ]:

```
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}  
d.get('k1')  
d['k1'][3]['tricky'][3]['target'][3]
```

Out[ ]:

```
'hello'
```

# Numpy

In [ ]:

```
import numpy as np
```

## 4.1 Create an array of 10 zeros?

## 4.2 Create an array of 10 fives?

In [ ]:

```
import numpy as np
array=np.zeros(10)
print(array)
```

```
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

In [ ]:

```
import numpy as np
array=np.ones(10)*5
print(array)
```

```
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

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

In [ ]:

```
import numpy as np
array=np.arange(20,35,2)
print(array)
```

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

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

In [ ]:

```
import numpy as np
x = np.arange(0,9)
y=x.reshape(3,3)
print(y)
```

```
[[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])**

In [ ]:

```
a = np.array([1, 2, 3])
b = np.array([4, 5, 6])
np.concatenate((a, b), axis=None)
```

Out[ ]:

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

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

In [ ]:

```
import pandas as pd
```

In [ ]:

```
import pandas as pd
import numpy as np
A = np.random.randint(10, size=(3,2))
df = pd.DataFrame(A)
df
```

Out[ ]:

	0	1
0	9	7
1	9	8
2	1	6

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

In [ ]:

```
import pandas as pd
from datetime import datetime
pd.date_range(start="2023-01-01",end="2023-02-10")
```

Out[ ]:

```
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',
               '2023-02-02', '2023-02-03', '2023-02-04', '2023-02-05',
               '2023-02-06', '2023-02-07', '2023-02-08', '2023-02-09',
               '2023-02-10'],
              dtype='datetime64[ns]', freq='D')
```

## 10. Create 2D list to DataFrame

```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

In [ ]:

```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

In [ ]:

```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
df = pd.DataFrame(lists)
print(df)
```

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

