

# Basic Python

## 1. Split this string

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

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

```
['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]}], 'k2':0.5}
```

```
d = {'k1':[1,2,3,{'tricky':['oh','man','inception'], 'target':[1,2,3,hello]}], 'k2':0.5}  
print(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?

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

```
An array of 10 zeros:
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
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 even integers from 20 to 35:")
print(array)
```

```
Array of all even integers from 20 to 35:
[20 22 24 26 28 30 32 34]
```

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

## 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])**

```
import pandas as pd
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
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
per1=pd.date_range(start='1-1-2023',end = '10-2-2023')
for val in per1:
    print(val)
```

```
2023-01-01 00:00:00
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2023-01-06 00:00:00
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```



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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]]
```

```
import pandas as pd
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
df = pd.DataFrame(lists, columns=['s.no', 'name', 'val'])
print(df)
```

	s.no	name	val
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24