

Basic Python

1. Split this string

```
In [ ]: s = "Hi there Sam!"  
In [ ]: s.split()  
Out[ ]: ['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 [ ]: print(f"The diameter of {planet} is {diameter} kilometers")  
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']}]}]}  
In [ ]: list(d.values())[0][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 [ ]: np.zeros(10)  
Out[ ]: array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])  
In [ ]: np.ones(10)*5  
Out[ ]: 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 [ ]: np.arange(20, 35, 2)  
Out[ ]: array([20, 22, 24, 26, 28, 30, 32, 34])
```

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

```
In [ ]: np.arange(0, 9).reshape(3, 3)  
Out[ ]: array([[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])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
In [ ]: import pandas as pd  
In [ ]: data = [['Saravana', 21], ['Sharvesh', 21], ['Siva Rohit', 20]]  
        df = pd.DataFrame(data, columns=['Name', 'Age'])  
        df
```

```
Out[ ]: 

|   | Name       | Age |
|---|------------|-----|
| 0 | Saravana   | 21  |
| 1 | Sharvesh   | 21  |
| 2 | Siva Rohit | 20  |


```

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

```
In [ ]: dates = pd.date_range('01/01/2023', '10/02/2023')
```

FEB, 2023

```
In [ ]: dates = pd.date_range('01/01/2023', '10/02/2023')
pd.DataFrame(dates)
```

```
Out[ ]:
```

	0
0	2023-01-01
1	2023-01-02
2	2023-01-03
3	2023-01-04
4	2023-01-05
...	...
270	2023-09-28
271	2023-09-29
272	2023-09-30
273	2023-10-01
274	2023-10-02

275 rows x 1 columns

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 [ ]: df = pd.DataFrame(lists)
df
```

```
Out[ ]:
```

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