

Basic Python

1. Split this string

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

```
s.split()
```

```
['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
```

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

```
{"type": "string"}
```

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

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

```
d['k1'][3]["tricky"][3]['target'][3]
```

```
{"type": "string"}
```

Numpy

```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
np.zeros(10)
```

```
array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])
```

```
a1 = np.array([5,5,5,5,5,5,5,5,5,5])
```

```
a1
```

```
array([5, 5, 5, 5, 5, 5, 5, 5, 5, 5])
```

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

```
np.arange(20,35,2)
```

```
array([20, 22, 24, 26, 28, 30, 32, 34])
```


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

```
np.arange(0,9).reshape(3,3)
```

```
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])
```

```
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
```

```
l1={'name':['aravindh','prince','Ak'],'age':[21,23,21]}
pd.DataFrame(l1)
```

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

```
pd.Series(pd.date_range(start="01-01-2023",end="02-10-2023"))
```

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]]
```

```
pd.DataFrame(lists)
```

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