

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  
  
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']}]}]}  
  
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?

```
a=np.zeros(10)  
a  
  
array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])  
  
b=np.ones(10)*5  
b  
  
array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])
```

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

```
c=np.arange(20,35,2)  
c  
  
array([20, 22, 24, 26, 28, 30, 32, 34])
```

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

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

```
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),axis=0)
```

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
```

```
d={"name":["Ajay", "Deepak", "B"], "age":[20,16,51]}
```

```
df=pd.DataFrame(d)
```

```
df
```

```
   name  age
0  Ajay   20
1 Deepak  16
2    B    51
```

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

```
p = pd.date_range(start='1-1-2023',end='10-2-2023')
```

```
for val in p:
```

```
    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)
```

```
df
```

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