

Basic Python

1. Split this string

```
s = "Hi there Sam!"  
  
print(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']}]}]}  
  
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?

```
b=np.zeros(10)  
  
print(b)  
  
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]  
  
c=np.ones(10)*5  
print(c)  
  
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

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

```
d=np.arange(20,35,2)  
print(d)
```

```
[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)
print(d)
```

```
[[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])
print(np.concatenate((a,b)))
```

```
[1 2 3 4 5 6]
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd

b=np.random.rand(3,2)
df=pd.DataFrame(a)
df
```

```
      0      1
0  0.729761  0.009483
1  0.755459  0.400507
2  0.576816  0.532759
```

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

```
p = pd.date_range(start = '1-1-2023', end = '02-10-2023', freq = 'D')
ps=pd.Series(p)
print(ps)
```

```
0    2023-01-01
1    2023-01-02
2    2023-01-03
3    2023-01-04
4    2023-01-05
5    2023-01-06
6    2023-01-07
7    2023-01-08
8    2023-01-09
9    2023-01-10
10   2023-01-11
```

```
11 2023-01-12
12 2023-01-13
13 2023-01-14
14 2023-01-15
15 2023-01-16
16 2023-01-17
17 2023-01-18
18 2023-01-19
19 2023-01-20
20 2023-01-21
21 2023-01-22
22 2023-01-23
23 2023-01-24
24 2023-01-25
25 2023-01-26
26 2023-01-27
27 2023-01-28
28 2023-01-29
29 2023-01-30
30 2023-01-31
31 2023-02-01
32 2023-02-02
33 2023-02-03
34 2023-02-04
35 2023-02-05
36 2023-02-06
37 2023-02-07
38 2023-02-08
39 2023-02-09
40 2023-02-10
dtype: datetime64[ns]
```

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]]
i=pd.DataFrame(lists)
print(i)
```

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