

ASSIGNMENT -1

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Basic Python

1. Split this string

```
In[:  
s = "Hi there Sam!"  
  
In[:  
s=s.split(" ")  
s  
  
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("The diameter of {} is {} kilometers".format(planet,diameter))  
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[:  
d['k1'][3]['tricky'][3]  
  
Out[:  
{'target': [1, 2, 3, 'hello']}
```

Numpy

```
In [2]:  
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
In []:  
np.zeros(10,dtype=int)  
Out[ ]:  
array([0, 0, 0, 0, 0, 0, 0, 0, 0, 0])  
In []:  
np.ones(10,dtype=int)*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 []:  
evenIntegers = np.arange(20,36,2)  
evenIntegers  
Out[ ]:  
array([20, 22, 24, 26, 28, 30, 32, 34])
```

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

```
In []:  
values=np.random.randint(9,size=(3,3))  
values  
Out[ ]:  
array([[4, 8, 2],  
       [1, 4, 0],  
       [8, 7, 0]])
```

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])  
conc=np.concatenate((a,b))  
conc  
Out[ ]:  
array([1, 2, 3, 4, 5, 6])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [1]:

```
import pandas as pd
```

In []:

```
s1 = pd.Series(np.random.rand(2))
s2 = pd.Series(np.random.rand(2))
s3 = pd.Series(np.random.rand(2))
df = pd.DataFrame([s1,s2,s3])
df
```

Out[]:

	0	1
0	0.238527	0.343665
1	0.306049	0.645804
2	0.908118	0.925606

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

In [3]:

```
date=pd.date_range(start='1st Jan,2023',end='10th Feb,2023')
dates = pd.Series(date)
dates
```

Out[3]:

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]]
```

```
In [4]:
```

```
lists = [['aaa', 22], ['bbb', 25], ['ccc', 24]]
```

```
In [ ]:
```

```
df = pd.DataFrame(lists, columns=['name', 'number'])
print(df)
```

```
name  number
0  aaa      22
1  bbb      25
2  ccc      24
```