ASSIGNMENT 1

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1. Split this string

```
[11] s="Hi there Sam!"
     x=s.split()
     print(x)
```

```
['Hi', 'there', 'Sam!']
```

2. Use .format() to print the following string.Output should be: The diameter of Earth is 12742 kilometers.

```
[2] planet = "Earth"
    diameter = 12742
    print("The diameter of {} is {}.".format(planet,diameter))
```

```
The diameter of Earth is 12742.
```

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

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

```
hello
```

4.1 Create an array of 10 zeros?
4.2 Create an array of 10 fives?

```
[7] import numpy as np
    arr=np.zeros(10)
    print("The array containing 10 zeroes is given by:",arr)
```

```
The array containing 10 zeroes is given by: [0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

```
[9] import numpy as np
    arr=np.ones(10)*5
    print("The array containing 10 nos of fives is given by:",arr)
```

```
The array containing 10 nos of fives is given by: [5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

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

```
[12] import numpy as np
     arr=np.arange(20,36,2)
     print("The array containing even numbers in range 20 to 35:",arr)
```

```
The array containing even numbers in range 20 to 35: [20 22 24 26 28 30 32 34]
```

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

```
[14] import numpy as np
     x=np.arange(0,9).reshape(3,3)
     print("The 3*3 matrix is given as:")
     print(x)
```

```
The 3*3 matrix is given as:
[[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("Array a:",a)
print("Array b:",b)
print("Concatinated array:",np.concatenate((a,b)))
```

```
Array a: [1 2 3]
Array b: [4 5 6]
Concatinated array: [1 2 3 4 5 6]
```

8.Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
data = [['a', 1], ['b', 2], ['c', 3]]
df = pd.DataFrame(data, columns=['letter', 'Number'])

df
```

	letter	Number
0	a	1
1	b	2
2	c	3

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

```
import pandas as pd

per1 = pd.date_range(start ='1-1-2023',
         end ='10-02-2023', freq ='5H')

for val in per1:
    print(val)
```

```
2023-01-01 00:00:00
2023-01-01 05:00:00
2023-01-01 10:00:00
2023-01-01 15:00:00
2023-01-01 20:00:00
2023-01-02 01:00:00
2023-01-02 06:00:00
2023-01-02 11:00:00
2023-01-02 16:00:00
2023-01-02 21:00:00
2023-01-03 02:00:00
2023-01-03 07:00:00
2023-01-03 12:00:00
2023-01-03 17:00:00
2023-01-03 22:00:00
2023-01-04 03:00:00
2023-01-04 08:00:00
2023-01-04 13:00:00
2023-01-04 18:00:00
2023-01-04 23:00:00
2023-01-05 04:00:00
2023-01-05 09:00:00
2023-01-05 14:00:00
2023-09-27 09:00:00
2023-09-27 14:00:00
2023-09-27 19:00:00
2023-09-28 00:00:00
2023-09-28 05:00:00
2023-09-28 10:00:00
2023-09-28 15:00:00
2023-09-28 20:00:00
2023-09-29 01:00:00
2023-09-29 06:00:00
2023-09-29 11:00:00
2023-09-29 16:00:00
2023-09-29 21:00:00
2023-09-30 02:00:00
2023-09-30 07:00:00
2023-09-30 12:00:00
2023-09-30 17:00:00
2023-09-30 22:00:00
2023-10-01 03:00:00
2023-10-01 08:00:00
2023-10-01 13:00:00
2023-10-01 18:00:00
2023-10-01 23:00:00
```

10. Create 2D list to DataFrame

lists = [[1, 'aaa', 22],
[2, 'bbb', 25],
[3, 'ccc', 24]]

```
[22] # Import pandas library
     import pandas as pd

     # initialize list of lists
     lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]

     # Create the pandas DataFrame
     df = pd.DataFrame(lists, columns = ['Number',"Name",'Age'])

     # print dataframe.
     print(df )
```

```
   Number Name  Age
0       1  aaa   22
1       2  bbb   25
2       3  ccc   24
```