▾ Basic Python

▾ 1. Split this string

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

```
s="Hi there Sam!"
s=s.split()
print(s);
```

```
      ['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
```

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

```
array=np.zeros(10)
print(array)
```

```
    [0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

```
array=np.ones(10)*5
print(array)
```

```
    [5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

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

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

```
    [20 22 24 26 28 30 32 34]
```

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

```
a=np.arange(0,9)
b=a.reshape(3,3)
print(b)
```

```
    [[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
```

```
data=[['tom', 10],['nick',15]]
df=pd.DataFrame(data, columns=['Name','Age'])
print(df)
```

```
        Name  Age
     0   tom   10
     1  nick   15
```

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

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

```
        DatetimeIndex(['2023-01-01', '2023-01-02', '2023-01-03', '2023-01-04',
                       '2023-01-05', '2023-01-06', '2023-01-07', '2023-01-08',
                       '2023-01-09', '2023-01-10', '2023-01-11', '2023-01-12',
                       '2023-01-13', '2023-01-14', '2023-01-15', '2023-01-16',
                       '2023-01-17', '2023-01-18', '2023-01-19', '2023-01-20',
                       '2023-01-21', '2023-01-22', '2023-01-23', '2023-01-24',
                       '2023-01-25', '2023-01-26', '2023-01-27', '2023-01-28',
                       '2023-01-29', '2023-01-30', '2023-01-31', '2023-02-01',
                       '2023-02-02', '2023-02-03', '2023-02-04', '2023-02-05',
                       '2023-02-06', '2023-02-07', '2023-02-08', '2023-02-09',
                       '2023-02-10'],
                      dtype='datetime64[ns]', freq='D')
```

▾ 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, columns =['Tag','string','number'])
print(df)
```

```
     Tag string  number
  0    1    aaa      22
  1    2    bbb      25
  2    3    ccc      24
```

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