Pandas is an open source library that allows to you performs data manipulation. Pandas library is built on top of NumPy. Pandas need NumPy to operands, it's provided and easy way to create manipulates the data. It uses series on 1D data structure and DataFrame for multidimensional data structure. It provided slides the data, merge, concatenate, reshape the data.

- **What is DataFrame?**

A DataFrame is a 2D array with labels 2D access (row and Colum). It is standard way to data.

	Item	Price
0	A	2
1	B	3

- **Create a data frame**

    We can convert a numpy array to a pandas DataFrame with pd.DataFrame( ) . Here opposite is also possible, using np.array( ) that we can perfrom in a operation.

- **Numpy to pandas**

    Import numpy as np

    h = [[1, 2], [3,4]]

    table_h = pd.DataFrame(h)

    print('DataFrame :   ' table_h)

- **Pandas to Numpy**

  array_h = np.array(table_h)

  print('Numpy_array :   ' array_h)

- **output**

DataFrame

	0	1
0	1	2
1	3	4

Numpy array : [[1, 2] , [3, 4]]

- We have use directory to create a pandas DataFrame :

  Dic = { 'Name' : ["JOHN", "SMITH"], 'AGE' : [30, 40]}

  Pd.DataFrame (Data = Dic)

OUTPUT:

	AGE	NAME
0	30	JOHN
1	40	SMITH

- **Rangedata :**

- **Create data :**

Date_D = PD.Date_range ('2030 01 01', priodes = 6, freq = 'D'
Print ('Day : '. Dates_D)

Day : DatetimeIndex (['2030-01-01', '2030-01-02', '2030-01-03', '2030-01-04', '2030-01-05', '2030-01-06'], Dtye = 'datatime64 [ns]', freq = 'D')

- **Inspecting data :-**

We can check the head or tail of the dataset

Step 1 : Craete rando, sequence with numpy. The sequence has 4 coloums and 6 rows.

Randon = np.random . rand n (6,4)

Setp 2 : Then create a data frame using pandas ; Use data_m as an index for the DataFrame. It means each row will be given an name or index corresponding to a date.

CRATE WITH DATE:

df = pd.DataFrame (random, index = date_m, coloms = list ('ABCD'))

Step 3 : df .head (3)

	A	B	C
2030-01-31	1.3	1.31	1.312
2030-02-28	2	4	6
2030-03-31	7	8	9