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## DataFrame :->

A DataFrame is a two-dimensional (2-D) array / data-structure which

- > stores heterogeneous data i.e. can store int, float, string simultaneously.
- > in the form of rows and columns say in Tabular form.
- > size mutable i.e. rows / columns can be added or removed.
- > data mutable i.e. values in rows and columns can be changed.

### Example

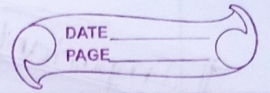
	Name	Class	Age	Column Labels/ Indices
0	Ajay	9th	15	
1	Aman	12th	18	
2	Geetam	6th	13	
3	Havish	10th	16	
4	Pawan	11th	17	

Row  
Index/Labels



NOTE:- "D" and "F" of keywords DataFrame must be capitalized.

[DataFrame]



## • Creating DataFrame in different ways:->

### (i) From dictionary of series:->

Creating a dataframe using dictionary of series is easy.

- First, we create series inside a dictionary with column index as "key" and "Value" is made Series.
- Then dictionary is traversed into DataFrame function.

Example:-

```
import pandas as pd
dict = {"Name": pd.Series(['Ajay', 'Aman', 'Raj']),
        "Class": pd.Series(['10th', '11th', '12th']),
        "Age": pd.Series([15, 16, 17])
    }
```

df = pd.DataFrame(dict) → traversing

print(df) → printing

Output:-

	Name	Class	Age
0	Ajay	10th	15
1	Aman	11th	16
2	Raj	12th	17



Important!!

(ii) From List of Dictionaries :->

While creating Dataframe from List of Dictionaries,

- Key values of dictionary becomes column index.
- Values/data of dictionary becomes corresponding entry.
- Unavailable data values in one dictionary is marked 'NaN' due to presence in one.
- Total no. of rows in the dictionary is equal to total number of dictionaries in the list.
- Total no. of columns in dictionary is equal to the maximum number of keys in any dictionary.

Example :->

```
import pandas as pd
```

```
listdict = [ {'a': 10, 'b': 6}, {'a': 13, 'b': 18,  
                'c': 21} ]
```

```
df = pd.DataFrame(listdict)
```

```
print(df)
```



Output:->

	a	b	c
0	10	6	NaN
1	13	18	21

\* Not Included in Syllabus

- From Dictionary of Lists
- From Dictionary of Numpy Arrays