

Python Pandas Dataframe

- A Pandas Dataframe is a 2 dimensional data structure, like a 2d array, or a table with rows and columns.
- It consists of three principal components, the data, rows, and columns.
- Each column can have a different type of values.

Example

	Rollno	Name	Marks
Rows	101	Palvi	74
	102	abc	87
	103	Xyz	92
	104	Pqr	70

Columns

data

* Create a Dataframe

We can create a Dataframe using these ways:-

- List
- dict
- Series
- Numpy ndarrays

Creating Empty DataFrame :-

```
import pandas as pd
df = pd.DataFrame()
print(df)
```

Output :- Columns : []
Index : []

Create a DataFrame using List :-

```
import pandas as pd
a = ['JP', 'web', 'developers']
df = pd.DataFrame(a)
print(df)
```

Output :-

0	JP
1	web
2	developers

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Create DataFrame Using Python Dictionary

We can create a dataframe using a dictionary by passing it to the Dataframe function.

Example

```
import pandas as pd
```

```
data = { 'Name': ['palvi', 'jpweb', 'developers'],  
        'Age': [25, 15, 35],  
        'City': ['london', 'Bathinda', 'Paris'] }
```

```
df = pd.DataFrame(data)  
print(df)
```

Output:-

	Name	Age	City
0	palvi	25	london
1	jpweb	15	Bathinda
2	developers	35	Paris

Create DataFrame from a Series

→ To Create a DataFrame from a Series, we first need to create a Pandas Series object.

→ We can create a Series object by passing a list of values to the 'pd.Series' method.

Example

```
import pandas as pd
s = pd.Series([10, 20, 30, 40])
print(s)
```

Output

```
0    10
1    20
2    30
3    40
```

dtype: int64

• Create DataFrame from numpy arrays:-

• To create a dataframe, all the ndarray must be of the same length.

• The index will be a range(n) by default)

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where n denotes the array length.

Example:-

```
import pandas as pd
data = {'Name': ['palvi', 'jp', 'web',
                'developers'], 'Age':
        [10, 20, 30, 40]}
df = pd.DataFrame(data)
print(df)
```

Output:-

	Name	Age
0	Palvi	10
1	JP	20
2	web	30
3	developers	40

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