

Python Pandas

- Python Pandas is an open source Python library used for data manipulation and analysis.
- It is used for working with data sets.
- It has functions for analyzing, cleaning, exploring and manipulating data.
- It was created by Wes McKinney in 2008.

* Working with Pandas Library:

The first step in working with Pandas is to ensure whether it is installed in the system or not. If not, then we need to install it on our system using the pip command.

```
pip install pandas
```

* Importing Pandas

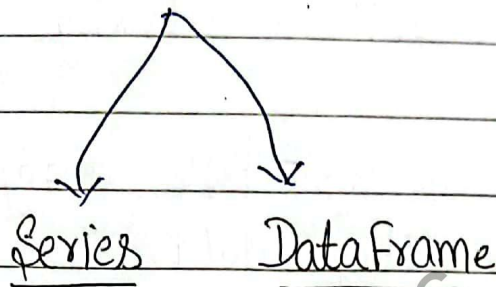
After installing, you need to import the library.

```
import pandas as pd
```

→ pd is an alias for the Pandas.
✓ The Good Paper

* Data Structures in Pandas Library

- It generally provide two data structures for manipulating data.



Pandas Series

- A Pandas Series is like a column in a table.
- It is a One-dimensional array holding data of any type. We can easily convert the list, tuple, and dictionary into series using "series" method.

for example

0	'palvi'
1	26
2	7.5
3	False

dtype : object

- Here, the series has two columns, labels (0,1,2,3) and data ('palvi', 26, 7.5, false).
- python Series can store elements of different data type.
- It uses a concept called `dtype` (data type) to manage and represent the underlying data in a series.

Creating Pandas Series

- (i) Create an Empty Series: We can easily create an empty series in Pandas, which means it will not have any value.

Example

```
import pandas as pd
a = pd.Series()
print(a)
```

Output:-

```
Series([], dtype: float64)
```



default datatype.

- (ii) In the real world, a Pandas Series will be created by loading the datasets from existing

#JPNotus

Storage, Storage can be SQL Database, CSV file and Excel file.

ciii) Creating Series from input:- Series can be created in different ways such as lists, dictionary and from a scalar value etc.

→ Creating a series from list :- We have to first create a list after that we can create a series from list.

```
import pandas as pd
list = ['p', 'a', 'l', 'v', 'i']
a = pd.Series(list)
print(a)
```



output:-

```
0    p
1    a
2    l
3    v
4    i
```

dtype : object

Notes by :-
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→ Creating a Series from dictionary: we can also create a Pandas Series from a Python dictionary.

Example

```
import pandas as pd
marks = {"Bca": 75, "Mca": 85, "Bsc": 95}
a = pd.Series(marks)
print(a)
```

Output

Bca 75

Mca 85

Bsc 95

dtype: float64

→ Create a Series from Scalar: If we provide a single scalar value as data to the `Pd.Series()` constructor with specified index labels. Then that single value will be repeated to match the length of provided index object.

Example

```
import pandas as pd
import numpy as np
a = pd.Series ( 4, index = [0, 1, 2, 3])
print (a)
```

Output:-

0	4
1	4
2	4
3	4

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