**EX.NO: 8 DATE:**

**Create Pandas Series and Data Frame from various inputs.**

**AIM:**

To create Pandas Series and DataFrames from different input sources such as lists, dictionaries, and NumPy arrays.

**Procedure:**

**Import the Pandas Library**:

* Import the Pandas library to use its functionalities.

**Creating a Pandas Series:**

* Create a Series from a list.
* Create a Series from a dictionary.
* Create a Series from a NumPy array.

**Creating a Pandas DataFrame:**

* Create a DataFrame from a dictionary of lists.
* Create a DataFrame from a 2D NumPy array.
* Create a DataFrame from a list of dictionaries.

**PROGRAM:**

import pandas as pd import numpy as np

**# 1. Creating a Pandas Series # From a list**

list\_data = [10, 20, 30, 40, 50] series\_from\_list = pd.Series(list\_data) print("Series from list:\n", series\_from\_list)

**# From a dictionary**

dict\_data = {'a': 100, 'b': 200, 'c': 300} series\_from\_dict = pd.Series(dict\_data) print("\nSeries from dictionary:\n", series\_from\_dict) **# From a NumPy array**

numpy\_array = np.array([1.5, 2.5, 3.5]) series\_from\_numpy = pd.Series(numpy\_array) print("\nSeries from NumPy array:\n", series\_from\_numpy) **# 2. Creating a Pandas DataFrame**

**# From a dictionary of lists**

data\_dict = {

'Name': ['Alice', 'Bob', 'Charlie'], 'Age': [25, 30, 35],

'City': ['New York', 'Los Angeles', 'Chicago']

}

dataframe\_from\_dict = pd.DataFrame(data\_dict)

print("\nDataFrame from dictionary of lists:\n", dataframe\_from\_dict)

**# From a 2D NumPy array**

numpy\_2d\_array = np.array([ [1, 'Alice', 25],

[2, 'Bob', 30],

[3, 'Charlie', 35]

])

dataframe\_from\_numpy = pd.DataFrame(numpy\_2d\_array, columns=['ID', 'Name', 'Age']) print("\nDataFrame from 2D NumPy array:\n", dataframe\_from\_numpy)

**# From a list of dictionaries**

data\_list\_of\_dicts = [

{'Name': 'Eve', 'Age': 28, 'City': 'Miami'},

{'Name': 'Frank', 'Age': 32, 'City': 'Houston'}

]

dataframe\_from\_list\_of\_dicts = pd.DataFrame(data\_list\_of\_dicts) print("\nDataFrame from list of dictionaries:\n", dataframe\_from\_list\_of\_dicts)

**OUTPUT:**

**Series from list:**

0 10

1 20

2 30

3 40

4 50

**dtype:** int64

**Series from dictionary:**

a 100

b 200

c 300

**dtype:** int64

**Series from NumPy array:**

0 1.5

1 2.5

2 3.5

**dtype:** float64

**DataFrame from dictionary of lists:**

|  |  |  |
| --- | --- | --- |
| **Name** | **Age** | **City** |
| 0 Alice | 25 | New York |
| 1 Bob | 30 | Los Angeles |
| 2 Charlie | 35 | Chicago |

**DataFrame from 2D NumPy array:**

|  |  |  |
| --- | --- | --- |
| ID | Name | Age |
| 0 1 | Alice | 25 |
| 1 2 | Bob | 30 |
| 2 3 | Charlie | 35 |

**DataFrame from list of dictionaries:**

Name Age City

1. Eve 28 Miami
2. Frank 32 Houston\

**RESULT:**

The program successfully created Pandas Series from various inputs (list, dictionary, and NumPy array) and created DataFrames from different sources (dictionary of lists, 2D NumPy array, and list of dictionaries).