Experiment No. 12
Program to demonstrate data frame creation and Manipulation using Pandas

Experiment No. 12

Title: Program to demonstrate data frame creation and Manipulation using Pandas

Aim: To study and implement data frame creation and Manipulation using Pandas

Objective: To introduce Pandas package for python

Theory:

Pandas is an open-source library that is built on top of NumPy library. It is a Python package that offers various data structures and operations for manipulating numerical data and time series. It is mainly popular for importing and analyzing data much easier. Pandas is fast and it has high-performance & productivity for users.

Code:

```python
import pandas as pd


# Define the dataset

mydataset = {

    'cars': ["BMW", "Mustang", "Ford"],

    'passings': [8, 6, 2]

}


# Create a DataFrame

myvar = pd.DataFrame(mydataset)


# Print the DataFrame

print(myvar)
```

Output:

```
C:\WINDOWS\System32\cmd.exe                                          —  □  ×
Microsoft Windows [Version 10.0.18363.1198]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\VISHNU PAREKH\Documents>python panda.py
     cars  passings
0      BMW         8
1  Mustang         6
2     Ford         2

C:\Users\VISHNU PAREKH\Documents>_
```

Create Labels

import pandas as pd

a = [6,5,2]

myvar = pd.Series(a,index=["a","b","c"])

print(myvar)

```
C:\WINDOWS\System32\cmd.exe                                      —  □  ×
Microsoft Windows [Version 10.0.18363.1198]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\VISHNU PAREKH\Documents>python panda.py
a    6
b    5
c    2
dtype: int64

C:\Users\VISHNU PAREKH\Documents>
```

Data Frames

import pandas as pd

data = {

   "calories":[400,300,390],

   "duration":[50,60,45]

}

myvar = pd.DataFrame(data)

print(myvar)

```
C:\WINDOWS\System32\cmd.exe                                    —    □    ×
Microsoft Windows [Version 10.0.18363.1198]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\VISHNU PAREKH\Documents>python panda.py
   calories  duration
0       400        50
1       300        60
2       390        45

C:\Users\VISHNU PAREKH\Documents>
```

Read CSV Files

import pandas as pd

pd.options.display.max_rows = 90

df = pd.read_csv('avenger.csv')

print(df)

```
C:\WINDOWS\System32\cmd.exe                                          —   □   ×
Microsoft Windows [Version 10.0.18363.1198]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\VISHNU PAREKH\Documents\pythonpanda>python panda.py
  Username      Login email   Identifier First name  Last name
0      rdj     rdj@gmail.com        1234     Robert     Junior
1      cap     cap@gmail.com        5467      Chris      Evans
2    green   green@gmail.com        4785      Bruce     Banner
3    storm   storm@gamil.com        2345      Chris  Hemsworth

C:\Users\VISHNU PAREKH\Documents\pythonpanda>_
```

Conclusion: Dataframes have been created and manipulated using Pandas.

The provided program demonstrates data frame creation and manipulation using pandas by reading a CSV file (`File.csv`) into a DataFrame (`df`) and displaying its contents. This showcases pandas' ability to handle tabular data efficiently for tasks such as data loading, exploration, and analysis, making it a versatile tool for data manipulation and analysis tasks in Python.