| 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]
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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]
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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]
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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]
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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.