LAB - 01

3/3/25

Different ways of importing datasets:

Method-1: Initialise values directly into dataframe

```
import pandas as pd
data = {
    "USN": ["1BM23CS417", "1BM22CS215", "1BM22CS227", "1BM22CS220",
            "1BM22CS214"],
    "Name": ["Rohit", "Rahul", "Gajanana", "Revanth", "Raghavendra"],
    "Marks": [85, 90, 78, 88, 92]
}
df = pd.DataFrame(data)
print(df)
```

Output:

	USN	Name	Marks
0	1BM23CS417	Rohit	85
1	1BM22CS215	Rahul	90
2	1BM22CS227	Gajanana	78
3	1BM22CS220	Revanth	88
4	1BM22CS214	Raghavendra	92

Method-2: Importing datasets from sklearn.datasets

```
from sklearn.datasets import load_diabetes
import pandas as pd
diabetes = load_diabetes()
df = pd.DataFrame(diabetes.data, columns = diabetes.feature_names)
df['target'] = diabetes.target
print(df.head())
```

Output:

	age	sex	s1	s2	target
0	0.038	0.050	-0.044	-0.034	151.0
1	-0.001	-0.044	-0.088	-0.019	75.0
2	0.085	0.050	-0.045	-0.034	141.0
3	-0.089	-0.044	0.012	0.024	206.0
4	0.005	-0.044	0.003	0.015	135.0

Method-3: Importing datasets from specific .csv file

```
import pandas as pd
df = pd.read_csv('/content/diabetes.csv')
print(df.head())
```

Output:

	ID	Gender	Age	BMI	CLASS
0	502	F	50	24.0	N
1	735	M	26	23.0	N
2	420	F	50	24.0	N
3	680	F	50	24.0	N
4	504	M	33	21.0	N

☆ Analysing the Dataset:

```
import yfinance as yf
import pandas as pd
import matplotlib.pyplot as plt
tickers = ["HDFCBANK.NS", "ICICIBANK.NS", "KOTAKBANK.NS"]
data = yf.download(tickers, start="2024-01-01", end="2024-12-30",
                   group_by='ticker')
print("First 5 rows of the dataset:")
print(data.head())
print("shape of dataset:")
print(data.shape)
print("Column names:")
print(data.columns)

hdfc_data = data['HDFCBANK.NS']
print("\n Summary stats for HDFC Bank:")
print(hdfc_data.describe())
hdfc_data['Daily Return'] = hdfc_data['Close'].pct_change()
hdfc_data['Daily Return'] = hdfc_data['Close'].pct_change()

icici_data = data['ICICIBANK.NS']
print("Summary stats for ICICI Bank:")
print(icici_data.describe())
icici_data['Daily Return'] = icici_data['Close'].pct_change()
icici_data['Daily Return'] = icici_data['Close'].pct_change()
```

```
kotak_data = data['KOTAKBANK.NS']
print("summary stats for KOTAK Bank:")
print(kotak_data.describe())
kotak_data['Daily Return'] = kotak_data['Close'].pct_change()
kotak_data['Daily Return'] = kotak_data['Close'].pct_change()

plt.figure(figsize=(12,6))
plt.subplot(2,1,1)
hdfc_data['Close'].plot(title="HDFC Bank-Closing Price")
plt.subplot(2,1,2)
hdfc_data['Daily Return'].plot(title="HDFC Bank - Daily Return",
                               color='orange')

plt.tight_layout()
plt.show()
hdfc_data.to_csv('hdfc_stock_data.csv')
print("HDFC stock data saved to 'hdfc_stock_data.csv'.")
```

10/10

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3/3/25