EXPERIMENT-2

```
import pandas as pd
import sqlite3
import requests
from sqlalchemy import create_engine
import os
from io import StringIO
# Load CSV
df_csv = pd.read_csv(r"C:\Users\REC\Downloads\college_student_placement_dataset.csv")
print(" CSV Data:\n", df_csv)
```

```
 CSV Data:
      College_ID   IQ  Prev_Sem_Result  CGPA  Academic_Performance  \
0       CLG0030  107             6.61  6.28                     8
1       CLG0061   97             5.52  5.37                     8
2       CLG0036  109             5.36  5.83                     9
3       CLG0055  122             5.47  5.75                     6
4       CLG0004   96             7.91  7.69                     7
...         ...  ...              ...   ...                   ...
9995    CLG0021  119             8.41  8.29                     4
9996    CLG0098   70             9.25  9.34                     7
9997    CLG0066   89             6.08  6.25                     3
9998    CLG0045  107             8.77  8.92                     3
9999    CLG0060  109             9.41  9.77                     8

     Internship_Experience  Extra_Curricular_Score  Communication_Skills  \
0                       No                       8                     8
1                       No                       7                     8
2                       No                       3                     1
3                      Yes                       1                     6
4                       No                       8                    10
...                    ...                     ...                   ...
9995                    No                       1                     8
9996                    No                       0                     7
9997                   Yes                       3                     9
9998                    No                       7                     5
9999                    No                       3                     5

      Projects_Completed Placement
0                      4        No
1                      0        No
2                      1        No
3                      1        No
4                      2        No
...                  ...       ...
9995                   0       Yes
9996                   2        No
9997                   5        No
9998                   1        No
9999                   5        No

[10000 rows x 10 columns]
```

```
# Create and Save Excel
df_csv.to_excel("data.xlsx", index=False)


# Load Excel
df_excel = pd.read_excel("data.xlsx")
print("\n📘 Excel Data:\n", df_excel)
```

```
📘 Excel Data:
     College_ID   IQ  Prev_Sem_Result  CGPA  Academic_Performance  \
0       CLG0030  107             6.61  6.28                     8
1       CLG0061   97             5.52  5.37                     8
2       CLG0036  109             5.36  5.83                     9
3       CLG0055  122             5.47  5.75                     6
4       CLG0004   96             7.91  7.69                     7
...         ...  ...              ...   ...                   ...
9995    CLG0021  119             8.41  8.29                     4
9996    CLG0098   70             9.25  9.34                     7
9997    CLG0066   89             6.08  6.25                     3
9998    CLG0045  107             8.77  8.92                     3
9999    CLG0060  109             9.41  9.77                     8

     Internship_Experience  Extra_Curricular_Score  Communication_Skills  \
0                       No                       8                     8
1                       No                       7                     8
2                       No                       3                     1
3                      Yes                       1                     6
4                       No                       8                    10
...                    ...                     ...                   ...
9995                    No                       1                     8
9996                    No                       0                     7
9997                   Yes                       3                     9
9998                    No                       7                     5
9999                    No                       3                     5

      Projects_Completed Placement
0                      4        No
1                      0        No
2                      1        No
3                      1        No
4                      2        No
...                  ...       ...
9995                   0       Yes
9996                   2        No
9997                   5        No
9998                   1        No
9999                   5        No

[10000 rows x 10 columns]
```

```
# Read from SQL
engine = create_engine('sqlite:///example.db')
df_sql = pd.read_sql("SELECT * FROM students", con=engine)
print("\n🧮 SQL Data:\n", df_sql)
```

```
🧮 SQL Data:
   id     name  marks
0   1    Alice     88
1   2      Bob     92
2   3  Charlie     78
3   4    Alice     88
4   5      Bob     92
5   6  Charlie     78
6   7    Alice     88
7   8      Bob     92
8   9  Charlie     78
```

```
url = "https://www.worldometers.info/world-population/population-by-country/"
headers = {
    "User-Agent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64)"
}

# Step 2: Download HTML
response = requests.get(url, headers=headers)
html = response.text

# Step 3: Parse tables using pandas
tables = pd.read_html(html)

# Step 4: Use the first table (main data)
df_web = tables[0]
print("\n🌍 Web Scraped Data (Top 5 Rows):")
print(df_web.head())
```

```
🌎 Web Scraped Data (Top 5 Rows):
   # Country (or dependency)  Population 2025 Yearly Change  Net Change  \
0  1                   India       1463865525         0.89%    12929734
1  2                   China       1416096094        -0.23%  -3,225,184
2  3           United States        347275807         0.54%     1849236
3  4               Indonesia        285721236         0.79%     2233305
4  5                Pakistan        255219554         1.57%     3950390

   Density (P/Km²)  Land Area (Km²) Migrants (net)  Fert. Rate  Median Age  \
0              492         2973190       -495,753        1.94        28.8
1              151         9388211       -268,126        1.02        40.1
2               38         9147420        1230663        1.62        38.5
3              158         1811570        -39,509        2.10        30.4
4              331          770880     -1,235,336        3.50        20.6

  Urban Pop % World Share
0       37.1%      17.78%
1       67.5%      17.20%
2       82.8%       4.22%
3       59.6%       3.47%
4       34.4%       3.10%
```

data_dict = {'Name': ['David', 'Eve'], 'Age': [22, 24], 'Dept': ['Design', 'QA']}

df_dict = pd.DataFrame(data_dict)

print("\n📦 Dictionary Data:\n", df_dict)

```
📦 Dictionary Data:
    Name  Age    Dept
0  David   22  Design
1    Eve   24      QA
```

json_data = [

{"Name": "Avi", "Age": 29, "Department": "Finance"},

{"Name": "Nina", "Age": 26, "Department": "Legal"}

]

Save to JSON file

import json

with open("data.json", "w") as f:

json.dump(json_data, f)

Load JSON

df_json = pd.read_json("data.json")

print("\n📜 JSON Data:\n", df_json)

```
📜 JSON Data:
    Name  Age Department
0   Avi   29    Finance
1  Nina   26      Legal
```

```
print("\n🎓 CGPA List:\n", df_csv[['College_ID', 'CGPA']])
```

```
🎓 CGPA List:
      College_ID  CGPA
0        CLG0030  6.28
1        CLG0061  5.37
2        CLG0036  5.83
3        CLG0055  5.75
4        CLG0004  7.69
...          ...   ...
9995     CLG0021  8.29
9996     CLG0098  9.34
9997     CLG0066  6.25
9998     CLG0045  8.92
9999     CLG0060  9.77

[10000 rows x 2 columns]
```

```
# Export to Excel
df_sql.to_excel("students_output.xlsx", index=False)
print("\n✅ SQL Data exported to 'students_output.xlsx'")
```

```
✅ SQL Data exported to 'students_output.xlsx'
```