

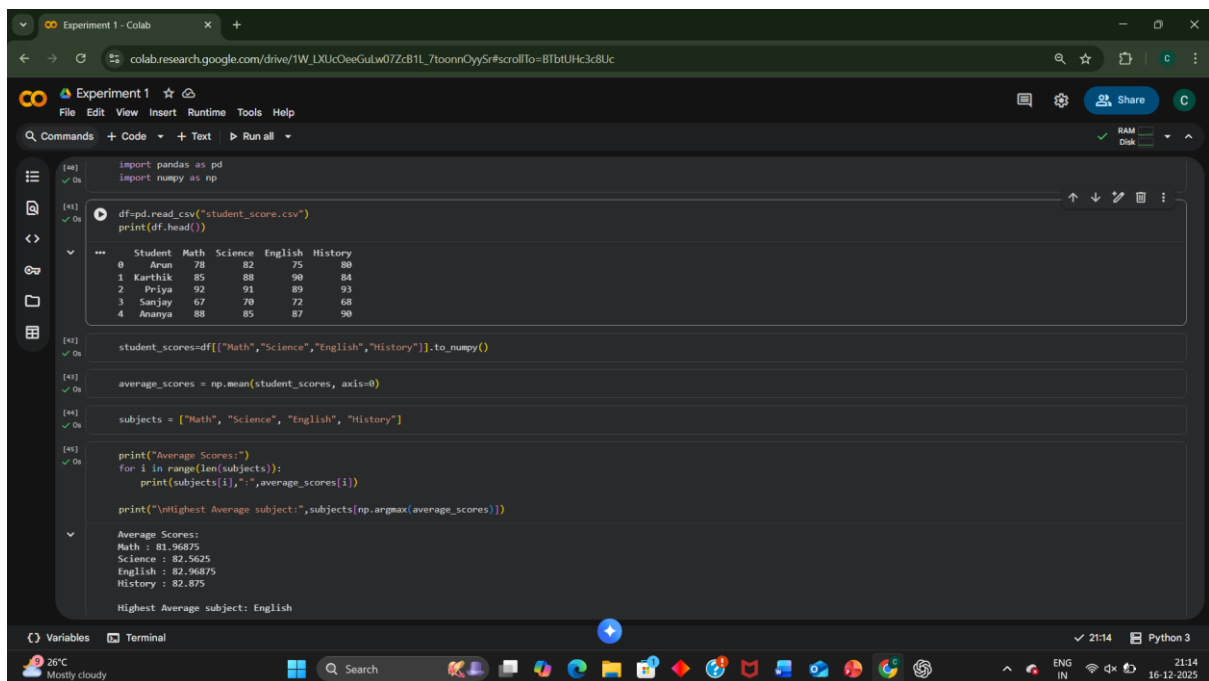
DAY-1 LAB EXPERIMENTS

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EXP_1 Analysing Student Performance Data



```
[40] import pandas as pd
import numpy as np

[41] df=pd.read_csv("student_score.csv")
print(df.head())

***
   Student  Math  Science  English  History
0      Arun    78      82      75      80
1  Karthik    85      88      90      84
2    Priya    92      91      89      93
3  Sanjay    67      70      72      68
4  Ananya    88      85      87      90

[42] student_scores=df[["Math","Science","English","History"]].to_numpy()

[43] average_scores = np.mean(student_scores, axis=0)

[44] subjects = ["Math", "Science", "English", "History"]

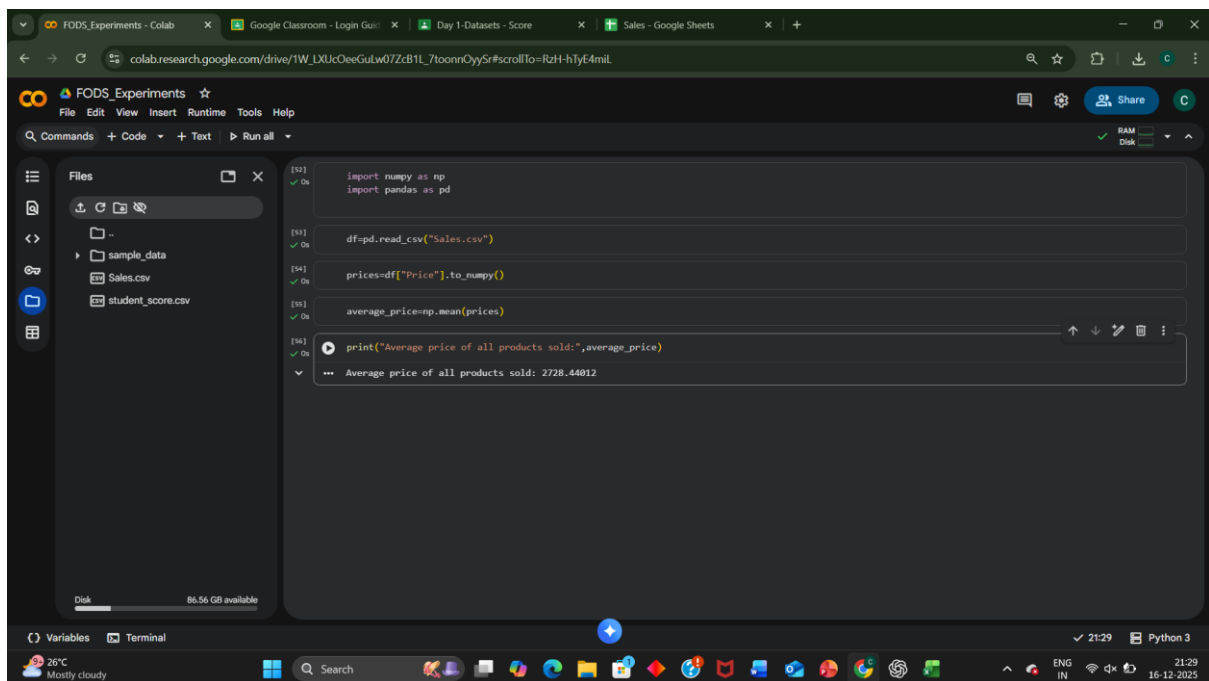
[45] print("Average Scores:")
for i in range(len(subjects)):
    print(subjects[i],":",average_scores[i])

print("\nHighest Average subject:",subjects[np.argmax(average_scores)])

Average Scores:
Math : 81.96875
Science : 82.5625
English : 82.96875
History : 82.875

Highest Average subject: English
```

EXP_2 Analysing Sales Data



The screenshot shows a Google Colab notebook with the following code and output:

```
[52] import numpy as np
import pandas as pd

[53] df=pd.read_csv("Sales.csv")

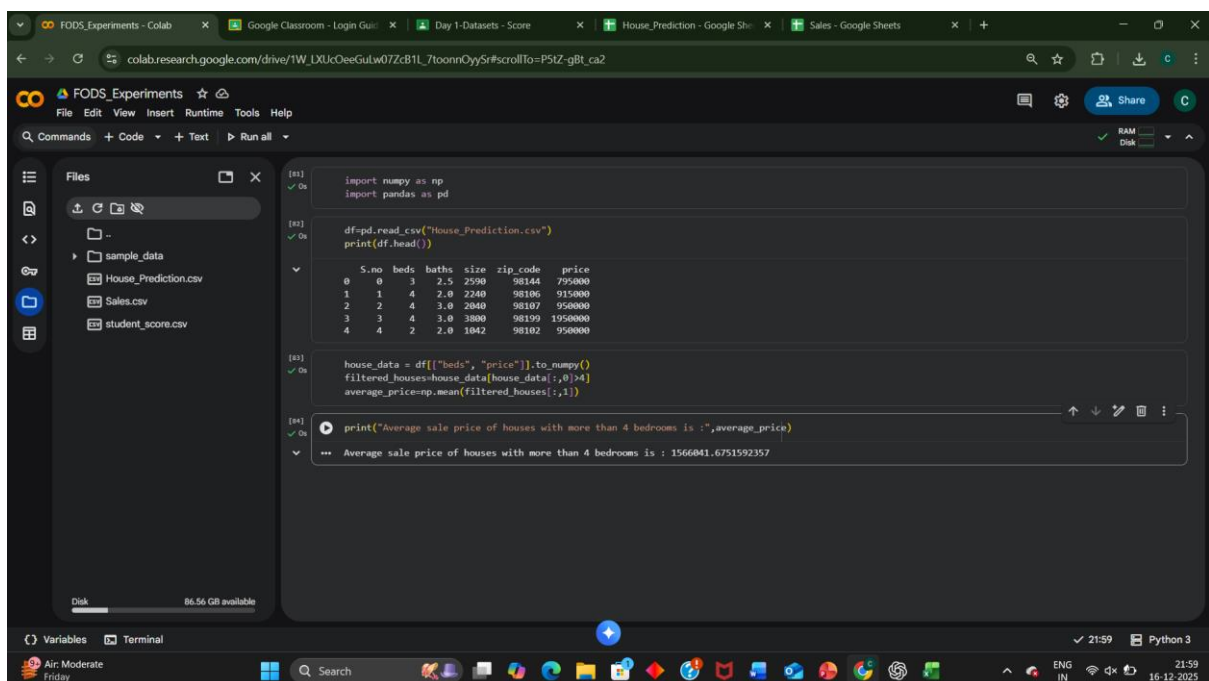
[54] prices=df[["Price"]].to_numpy()

[55] average_price=np.mean(prices)

[56] print("Average price of all products sold:",average_price)
Average price of all products sold: 2728.44012
```

The file explorer on the left shows a folder named 'sample_data' containing 'Sales.csv' and 'student_score.csv'. The bottom status bar indicates 'Python 3' and '16-12-2025'.

EXP_3 Analysing Dataset Containing Information about Houses in a Neighbourhood.



The screenshot shows a Google Colab notebook with the following code and output:

```
[81] import numpy as np
import pandas as pd

[82] df=pd.read_csv("House_Prediction.csv")
print(df.head())

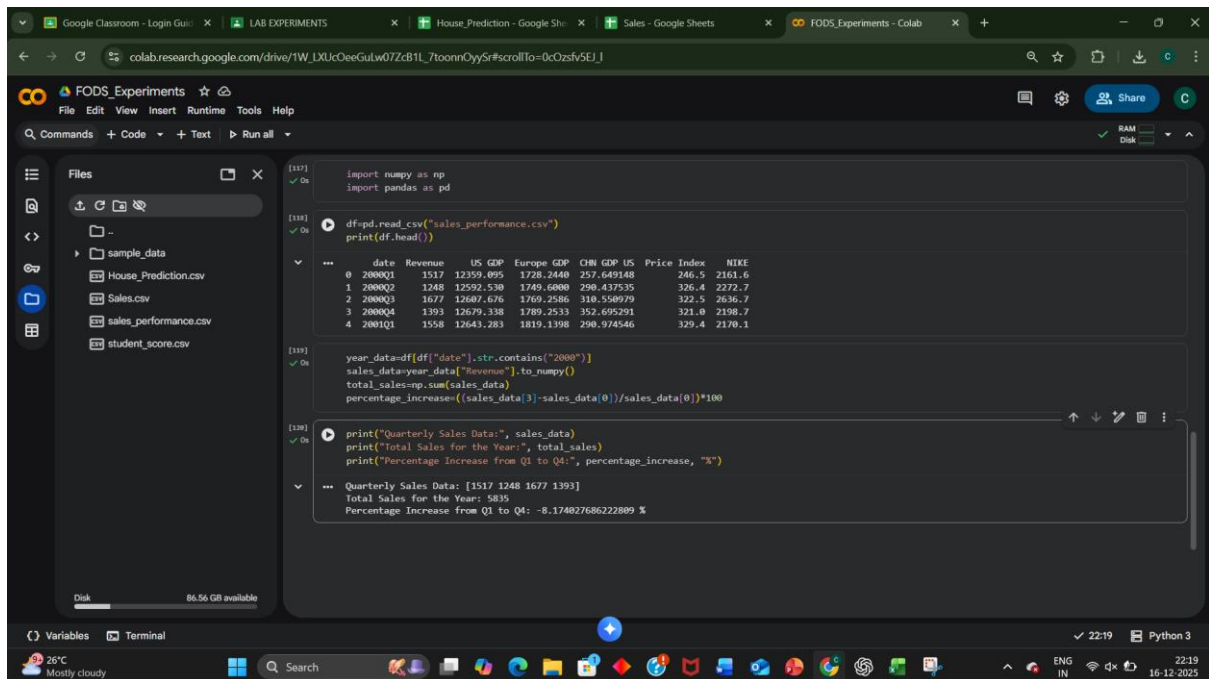
      S.no  beds  baths  size  zip_code  price
0         0     3    2.5  2590   98144  795000
1         1     4    2.0  2240   98106  915000
2         2     4    3.0  2040   98107  950000
3         3     4    3.0  3800   98199  1950000
4         4     2    2.0  1042   98102  950000

[83] house_data = df[["beds", "price"]].to_numpy()
filtered_houses=house_data[house_data[:,0]>4]
average_price=np.mean(filtered_houses[:,1])

[84] print("Average sale price of houses with more than 4 bedrooms is :",average_price)
Average sale price of houses with more than 4 bedrooms is : 1566041.6751592357
```

The file explorer on the left shows a folder named 'sample_data' containing 'House_Prediction.csv', 'Sales.csv', and 'student_score.csv'. The bottom status bar indicates 'Python 3' and '16-12-2025'.

EXP_4 Sales Performance of a Company over the Past Four Quarters.



The screenshot shows a Google Colab notebook titled 'FODS_Experiments'. The left sidebar displays a file explorer with a 'sample_data' folder containing 'House_Prediction.csv', 'Sales.csv', 'sales_performance.csv', and 'student_score.csv'. The main code area contains the following Python code:

```
[1317] ✓ On
import numpy as np
import pandas as pd

[1318] ✓ On
df=pd.read_csv("sales_performance.csv")
print(df.head())

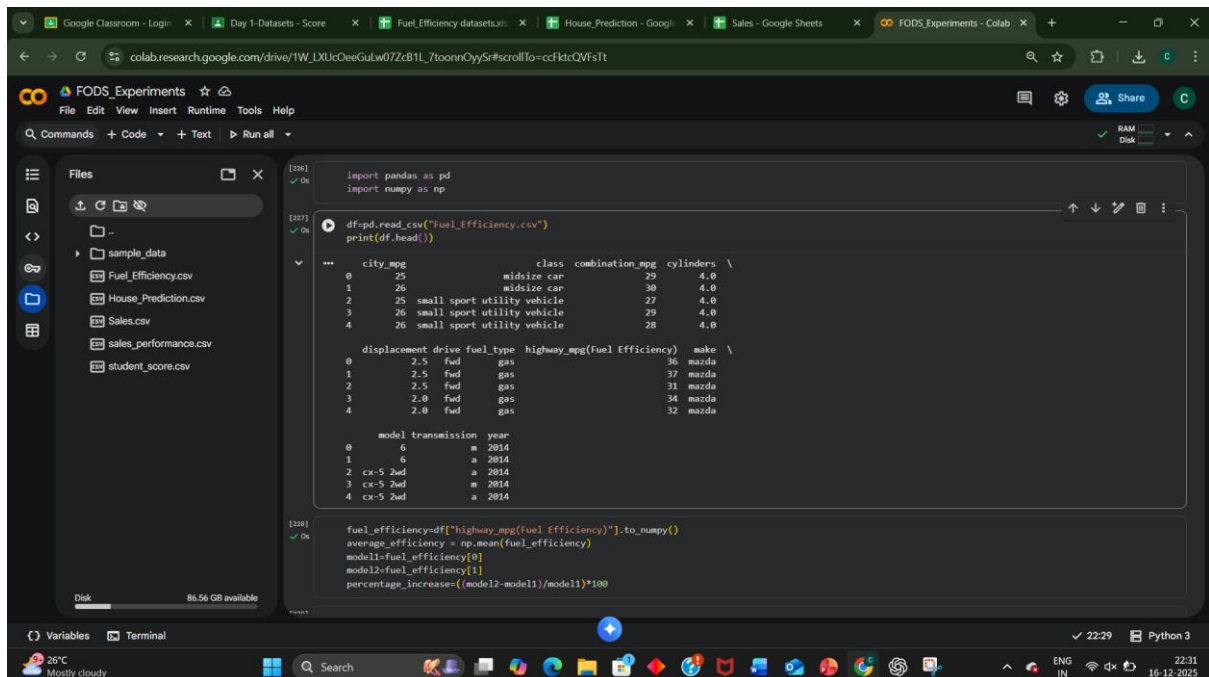
[1319] ✓ On
year_data=df[df["date"].str.contains("2000")]
sales_data=year_data["Revenue"].to_numpy()
total_sales=np.sum(sales_data)
percentage_increase=((sales_data[3]-sales_data[0])/sales_data[0])*100

[1320] ✓ On
print("Quarterly Sales Data:", sales_data)
print("Total Sales for the Year:", total_sales)
print("Percentage Increase from Q1 to Q4:", percentage_increase, "%")

Quarterly Sales Data: [1517 1248 1677 1393]
Total Sales for the Year: 5835
Percentage Increase from Q1 to Q4: -8.174027686222809 %
```

The output of the code shows a table of quarterly sales data for the year 2000, with columns for date, Revenue, US GDP, Europe GDP, CHN GDP, US Price Index, and NIKE. The output also shows the total sales for the year and the percentage increase from Q1 to Q4.

EXP_5 Analysis of Fuel Efficiency of Different Car Models



The screenshot shows a Google Colab notebook titled 'FODS_Experiments'. The left sidebar displays a file explorer with a 'sample_data' folder containing 'Fuel_Efficiency.csv', 'House_Prediction.csv', 'Sales.csv', 'sales_performance.csv', and 'student_score.csv'. The main code area contains the following Python code:

```
[1226] ✓ On
import pandas as pd
import numpy as np

[1227] ✓ On
df=pd.read_csv("fuel_efficiency.csv")
print(df.head())

[1228] ✓ On
fuel_efficiency=df[["highway_mpg(fuel Efficiency)", "make \
average_efficiency = np.mean(fuel_efficiency)
model1=fuel_efficiency[0]
model2=fuel_efficiency[1]
percentage_increase=((model2-model1)/model1)*100
```

The output of the code shows a table of fuel efficiency data for different car models, with columns for city_mpg, class, combination_mpg, cylinders, displacement, drive, fuel_type, highway_mpg(fuel Efficiency), make, model, transmission, and year. The output also shows the average fuel efficiency for the first two models and the percentage increase from model1 to model2.

