

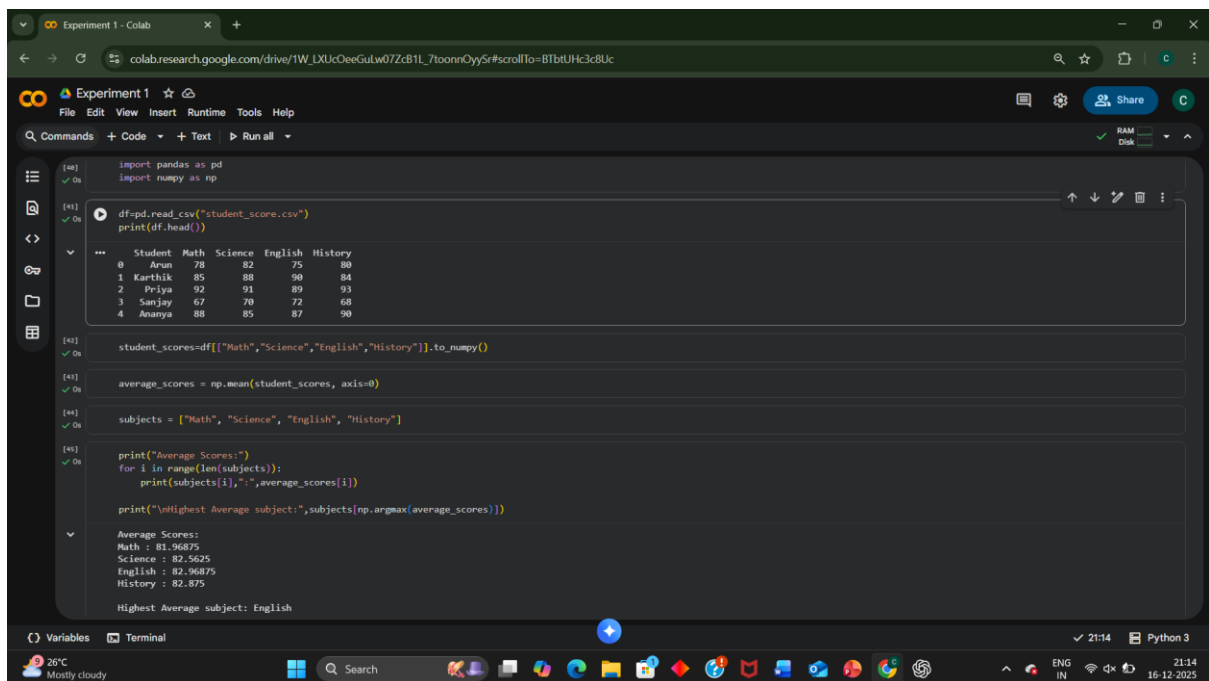
DAY-1 LAB EXPERIMENTS

Name : L ARAVIND

Reg No: 192424080

Date : 16/12/2025

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"]

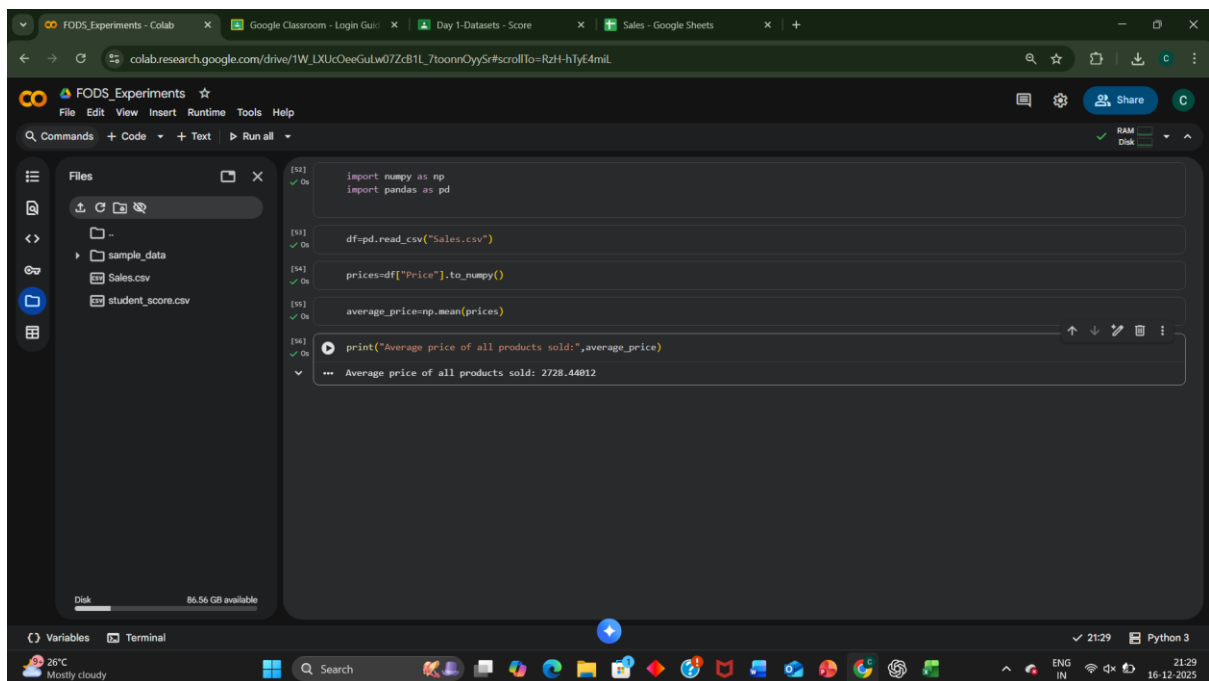
[45] print("Average Scores:")
for i in range(len(subjects)):
    print(subjects[i],":",average_scores[i])

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")

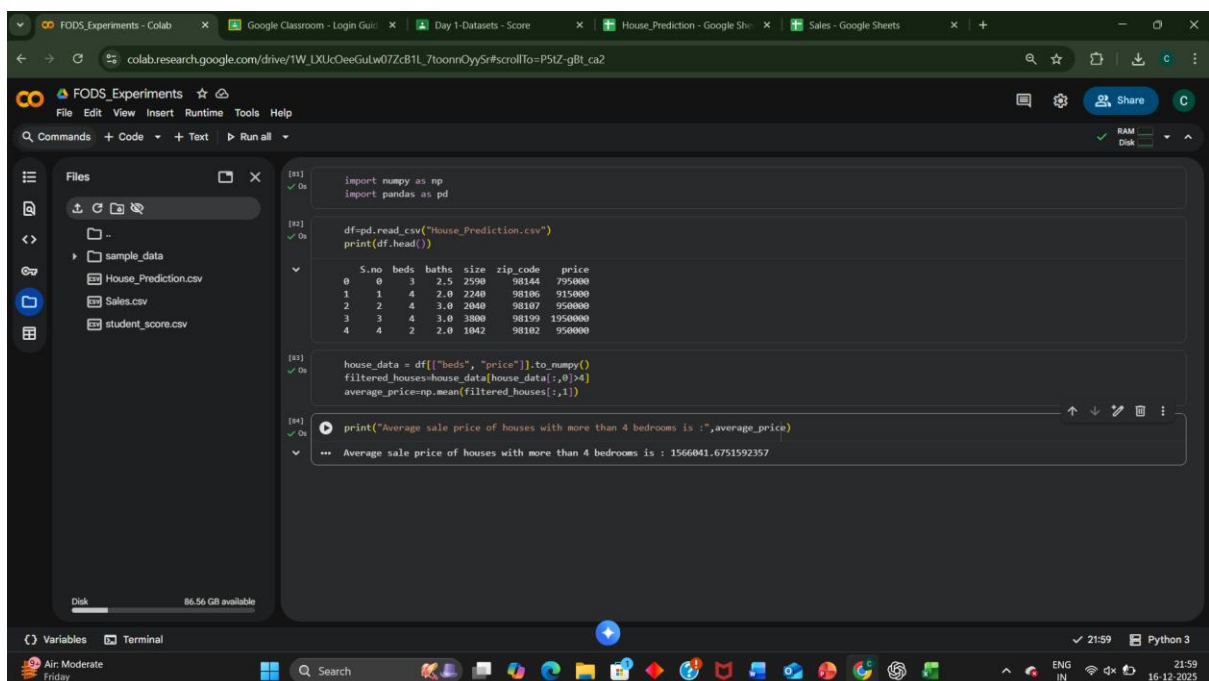
[54] prices=df[["Price"]].to_numpy()

[55] average_price=np.mean(prices)

[56] print("Average price of all products sold:",average_price)
Average price of all products sold: 2728.44812
```

The notebook interface includes a file explorer on the left showing 'sample_data', 'Sales.csv', and 'student_score.csv'. The bottom status bar indicates '26°C Mostly cloudy' and '21:29 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

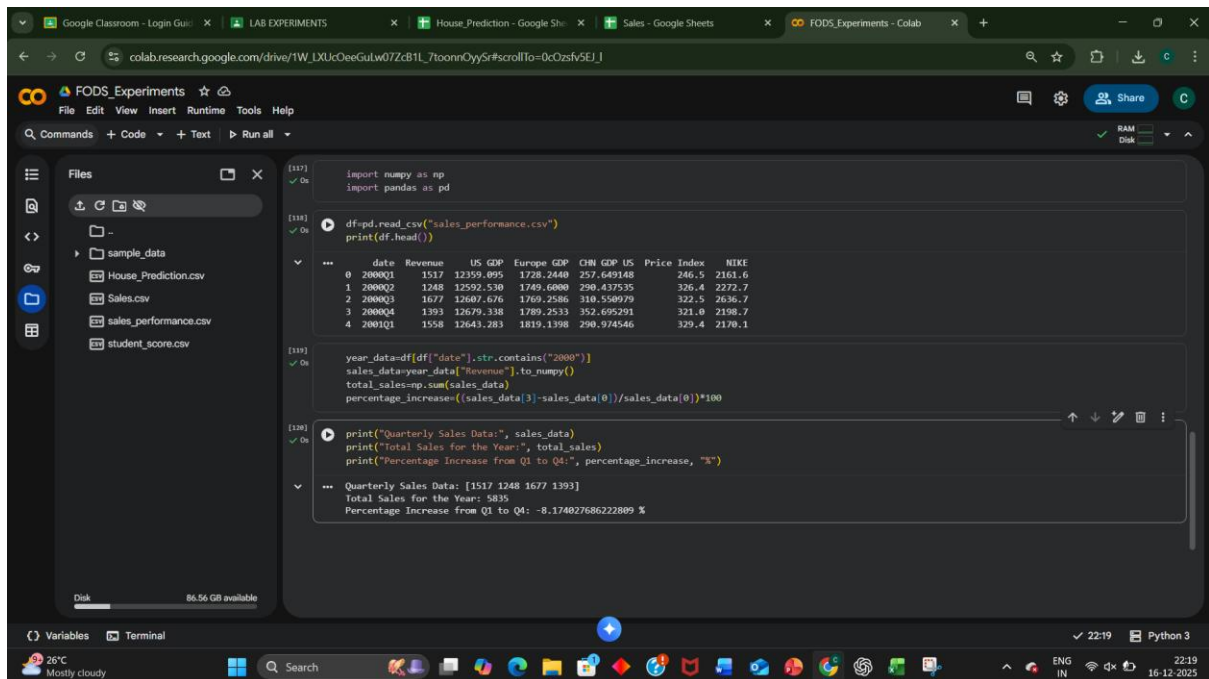
[82] df=pd.read_csv("House_Prediction.csv")
print(df.head())
   S.no  beds  baths  size  zip_code  price
0      0     3    2.5  2590   98144  795000
1      1     4    2.0  2240   98106  915000
2      2     4    3.0  2040   98187  950000
3      3     4    3.0  3800   98199  1950000
4      4     2    2.0  1042   98182  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 notebook interface includes a file explorer on the left showing 'sample_data', 'House_Prediction.csv', 'Sales.csv', and 'student_score.csv'. The bottom status bar indicates 'Air: Moderate Friday' and '21:59 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] import numpy as np
import pandas as pd

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

***
   date  Revenue  US GDP  Europe GDP  CHN GDP  US Price Index  NIKE
0  2000Q1    1517  12359.095    1728.2440    257.649148    246.5    2161.6
1  2000Q2    1248  12592.530    1749.6080    290.437535    326.4    2272.7
2  2000Q3    1677  12607.676    1769.2546    310.550979    322.5    2636.7
3  2000Q4    1393  12679.338    1789.2533    352.695291    321.8    2198.7
4  2001Q1    1558  12643.283    1819.1398    290.974546    329.4    2170.1

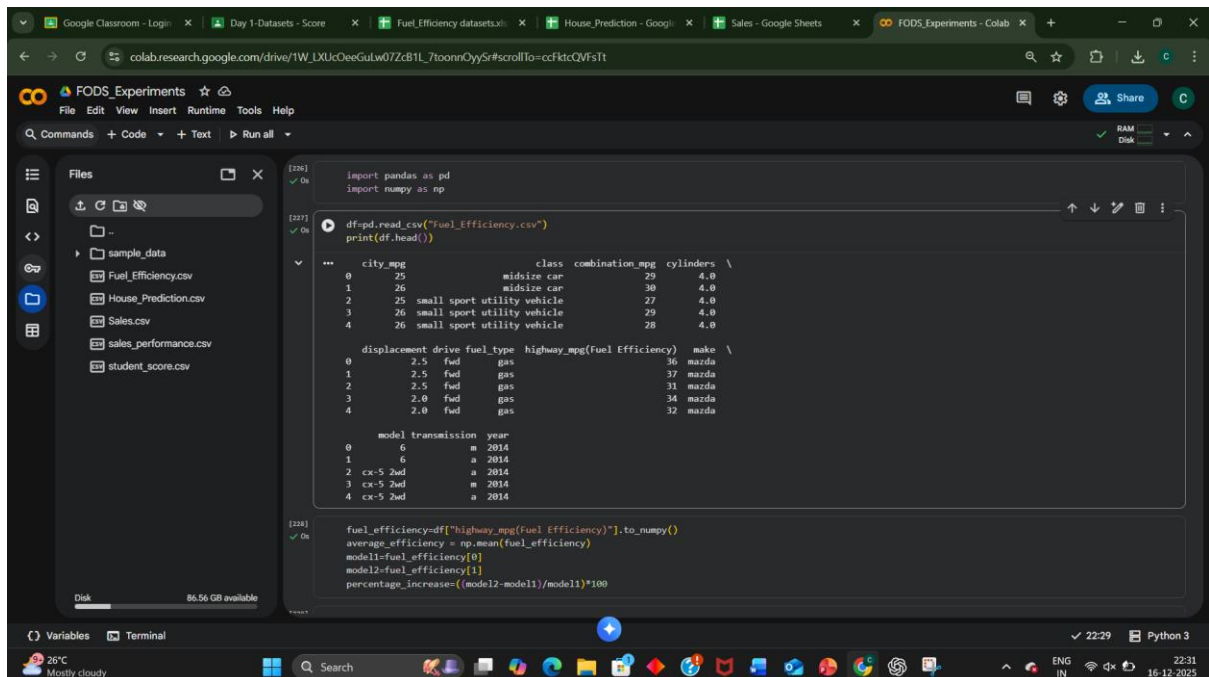
[1319] year_data=df[df["date"].str.contains("2000")]
sales_data=year_data["Revenue"].to_numpy()
total_sales=np.sum(sales_data)
percentage_increase=((sales_data[3]-sales_data[0])/sales_data[0])*100

[1320] 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 bottom status bar shows 'Variables', 'Terminal', '26°C Mostly cloudy', and 'Python 3'.

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] import pandas as pd
import numpy as np

[1227] df=pd.read_csv("Fuel_Efficiency.csv")
print(df.head())

***
   city_mpg  displacement  drive  fuel_type  highway_mpg(fuel Efficiency)  make  \
0         25          2.5      fwd      gas                                36  mazda
1         26          2.5      fwd      gas                                37  mazda
2         25          2.5      fwd      gas                                31  mazda
3         26          2.0      fwd      gas                                38  mazda
4         26          2.0      fwd      gas                                32  mazda

   model transmission  year
0         6          m    2014
1         6          a    2014
2      cx-5 2wd      a    2014
3      cx-5 2wd      m    2014
4      cx-5 2wd      a    2014

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

The bottom status bar shows 'Variables', 'Terminal', '26°C Mostly cloudy', and 'Python 3'.

