DAY-1 LAB EXPERIMENTS

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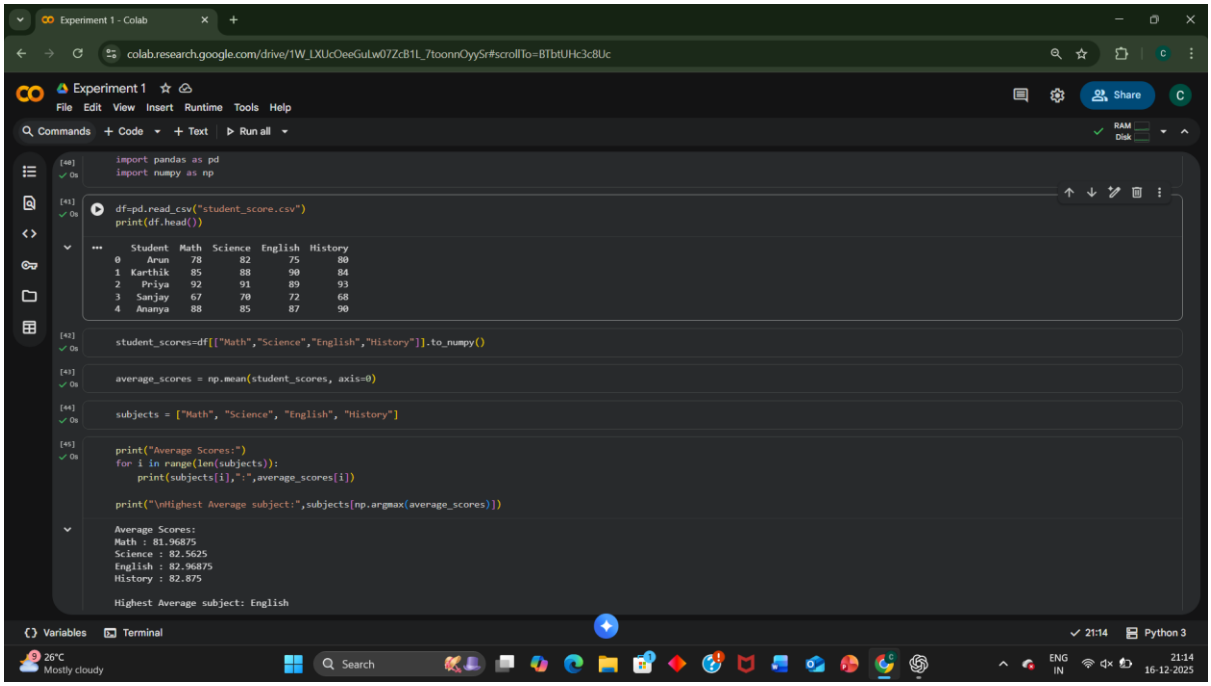
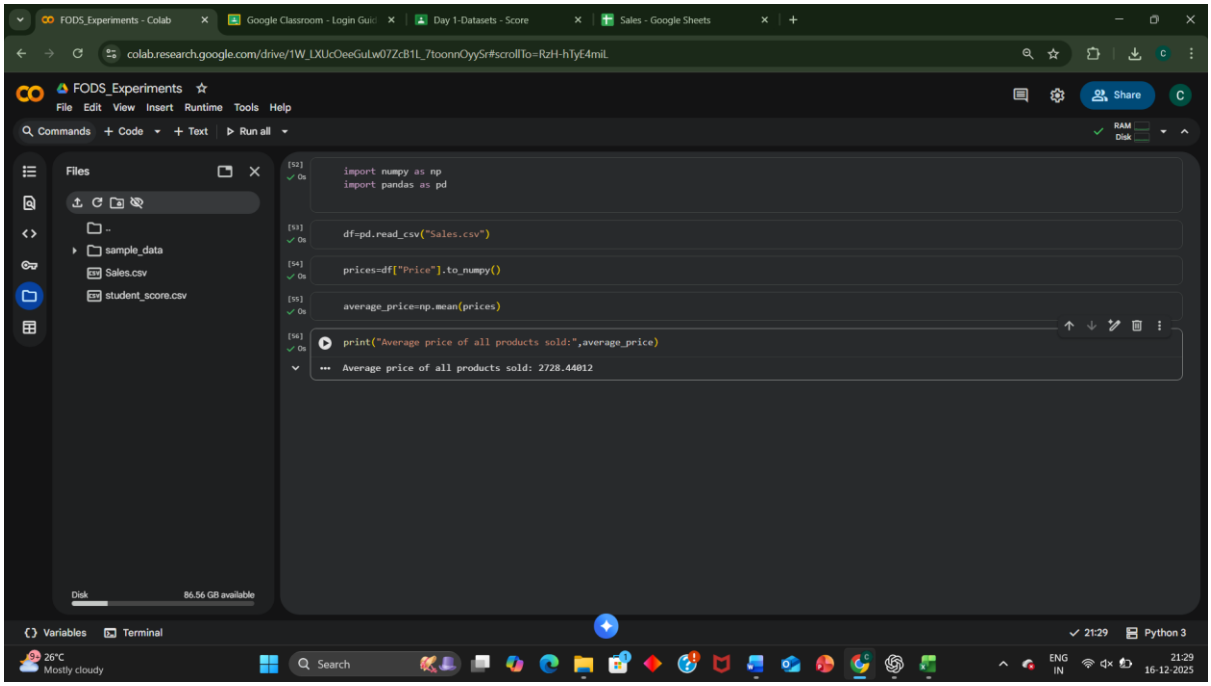
Date : 16/12/2025

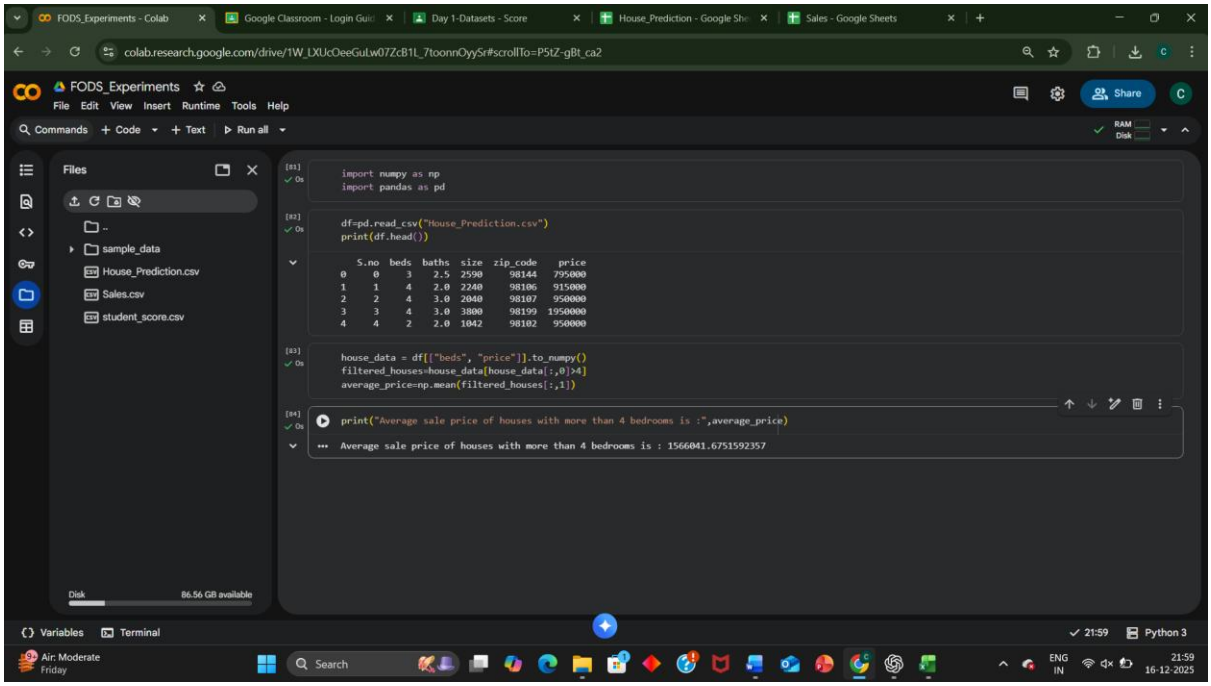
EXP_1 Analysing Student Performance Data



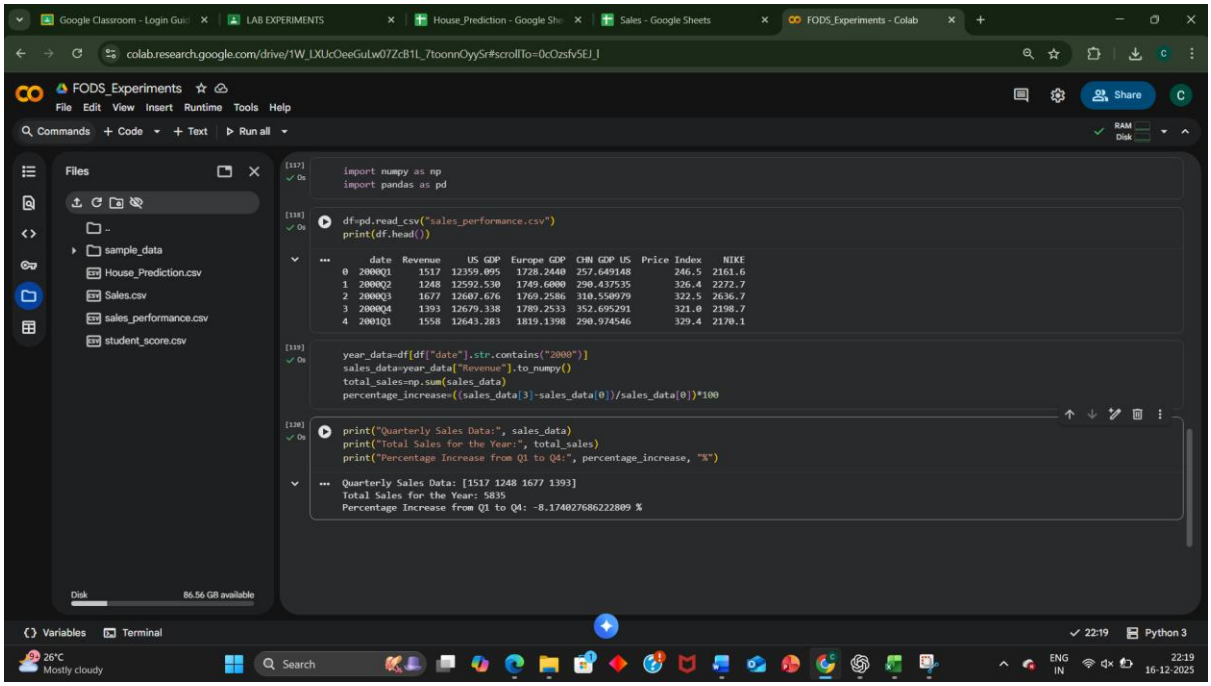
EXP_2 Analysing Sales Data



EXP_3 Analysing Dataset Containing Information about Houses in a Neighbourhood.



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



```
import numpy as np
import pandas as pd
```

```
df=pd.read_csv("sales_performance.csv")
print(df.head())
```

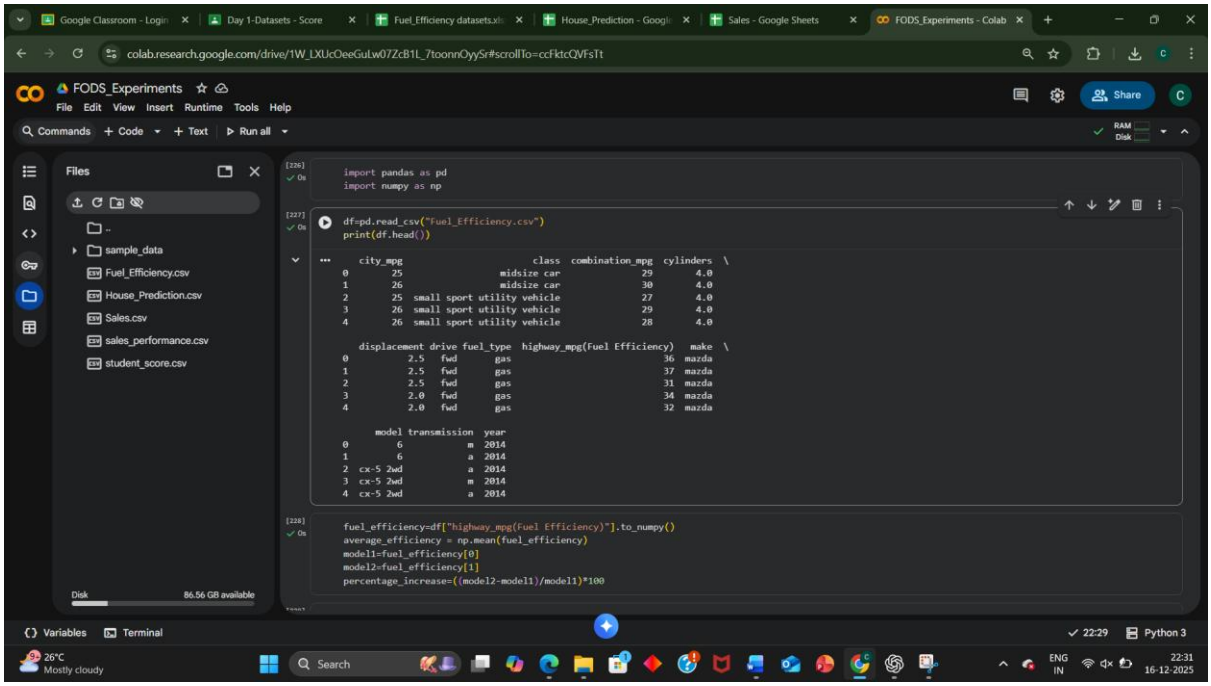
```
     date  Revenue     US GDP  Europe GDP  CHN GDP US  Price Index    NIKE
0  2000Q1     1517  12359.095   1728.2440  257.649148        246.5  2161.6
1  2000Q2     1248  12592.530   1749.6000  290.437535        326.4  2272.7
2  2000Q3     1677  12607.676   1769.2586  310.550979        322.5  2636.7
3  2000Q4     1393  12679.338   1789.2533  352.695291        321.0  2198.7
4  2001Q1     1558  12643.283   1819.1398  290.974546        329.4  2170.1
```

```
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
```

```
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 %
```

EXP_5 Analysis of Fuel Efficiency of Different Car Models



```
import pandas as pd
import numpy as np
```

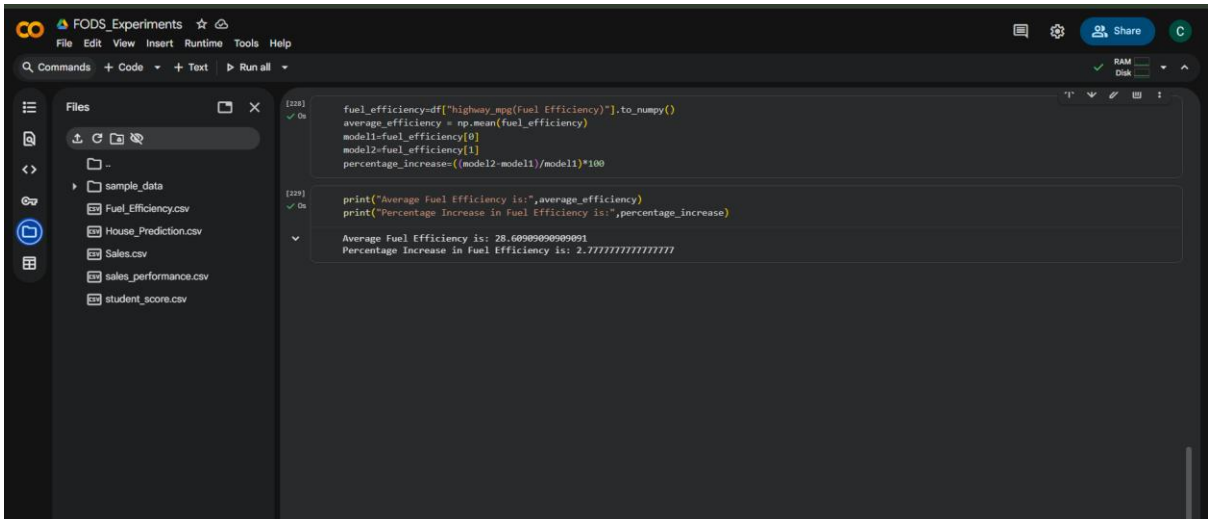
```
df=pd.read_csv("Fuel_Efficiency.csv")
print(df.head())
```

```
   city_mpg                    class  combination_mpg  cylinders  \
0        25             midsize car               29        4.0
1        26             midsize car               30        4.0
2        25  small sport utility vehicle          27        4.0
3        26  small sport utility vehicle          29        4.0
4        26  small sport utility vehicle          28        4.0

   displacement drive fuel_type  highway_mpg(Fuel Efficiency)   make  \
0           2.5   fwd       gas                            36  mazda
1           2.5   fwd       gas                            37  mazda
2           2.5   fwd       gas                            31  mazda
3           2.0   fwd       gas                            34  mazda
4           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
```

```
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
```


FODS_Experiments
File Edit View Insert Runtime Tools Help
Share
Commands + Code + Text Run all
RAM
Disk
Files
..
sample_data
Fuel_Efficiency.csv
House_Prediction.csv
Sales.csv
sales_performance.csv
student_score.csv
[228] 0s
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
[229] 0s
print("Average Fuel Efficiency is:",average_efficiency)
print("Percentage Increase in Fuel Efficiency is:",percentage_increase)
Average Fuel Efficiency is: 28.6090909090909091
Percentage Increase in Fuel Efficiency is: 2.777777777777777