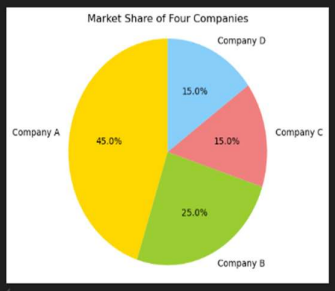
Task 5 matplotlib 10 questions

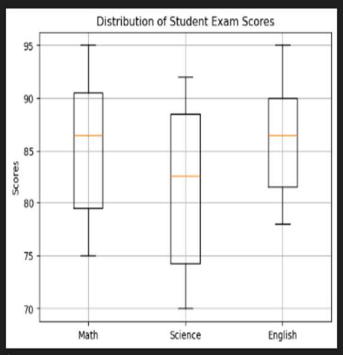
```
import matplotlib.pyplot as plt
print("Plotting Pie Chart...")
companies = ['Company A', 'Company B', 'Company C', 'Company D']
market_share = [45, 25, 15, 15]
explode = (0, 0, 0, 0)
plt.pie(market_share, explode=explode, labels=companies, autopct='%1.1f%%', startangle=90, colors=['gold', 'yellowgreen', 'lightcoral', 'lightskyblue'])
plt.axis('equal')
plt.title('Market Share of Four Companies')
plt.show()
```

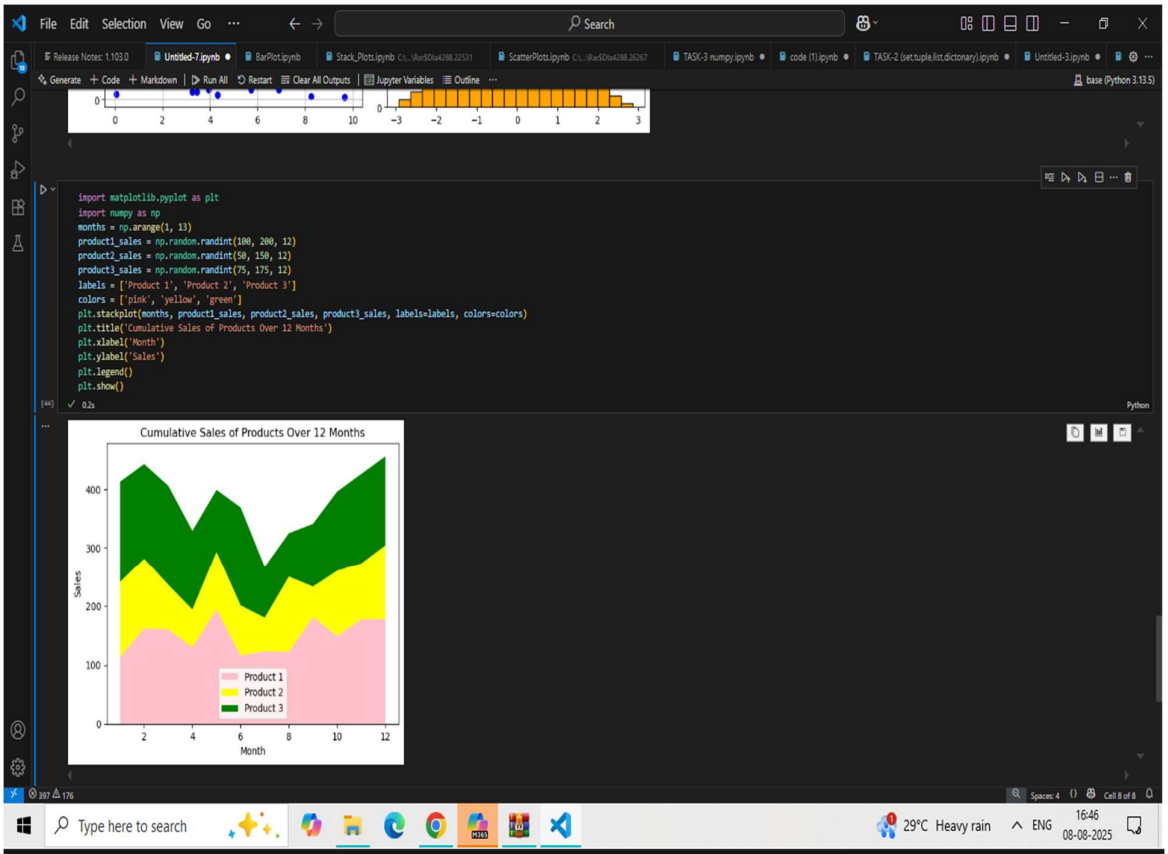
```
Plotting Pie Chart...
```




```
import matplotlib.pyplot as plt
import pandas as pd
data_boxplot = {
    'Math': [85, 90, 78, 92, 88, 75, 95, 80],
    'Science': [70, 85, 90, 88, 72, 80, 92, 75],
    'English': [90, 88, 95, 82, 78, 85, 90, 80]
}
df = pd.DataFrame(data_boxplot)
plt.boxplot([df['Math'], df['Science'], df['English']], tick_labels=['Math', 'Science', 'English'])
plt.title('Distribution of Student Exam Scores')
plt.ylabel('Scores')
plt.grid()
plt.show()
```

```
Plotting Boxplot...
```




File Edit Selection View Go
Search
Untitled-7.ipynb
Generate + Code + Markdown | Run All Restart Clear All Outputs | Jupyter Variables Outline
base (Python 3.13.5)
import matplotlib.pyplot as plt
import numpy as np
months = np.arange(1, 13)
product1_sales = np.random.randint(100, 200, 12)
product2_sales = np.random.randint(50, 150, 12)
product3_sales = np.random.randint(75, 175, 12)
labels = ['Product 1', 'Product 2', 'Product 3']
colors = ['pink', 'yellow', 'green']
plt.stackplot(months, product1_sales, product2_sales, product3_sales, labels=labels, colors=colors)
plt.title('Cumulative Sales of Products Over 12 Months')
plt.xlabel('Month')
plt.ylabel('Sales')
plt.legend()
plt.show()
0.2s
Python
Cumulative Sales of Products Over 12 Months
Sales
Month
Product 1
Product 2
Product 3
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29°C Heavy rain
ENG
16:46
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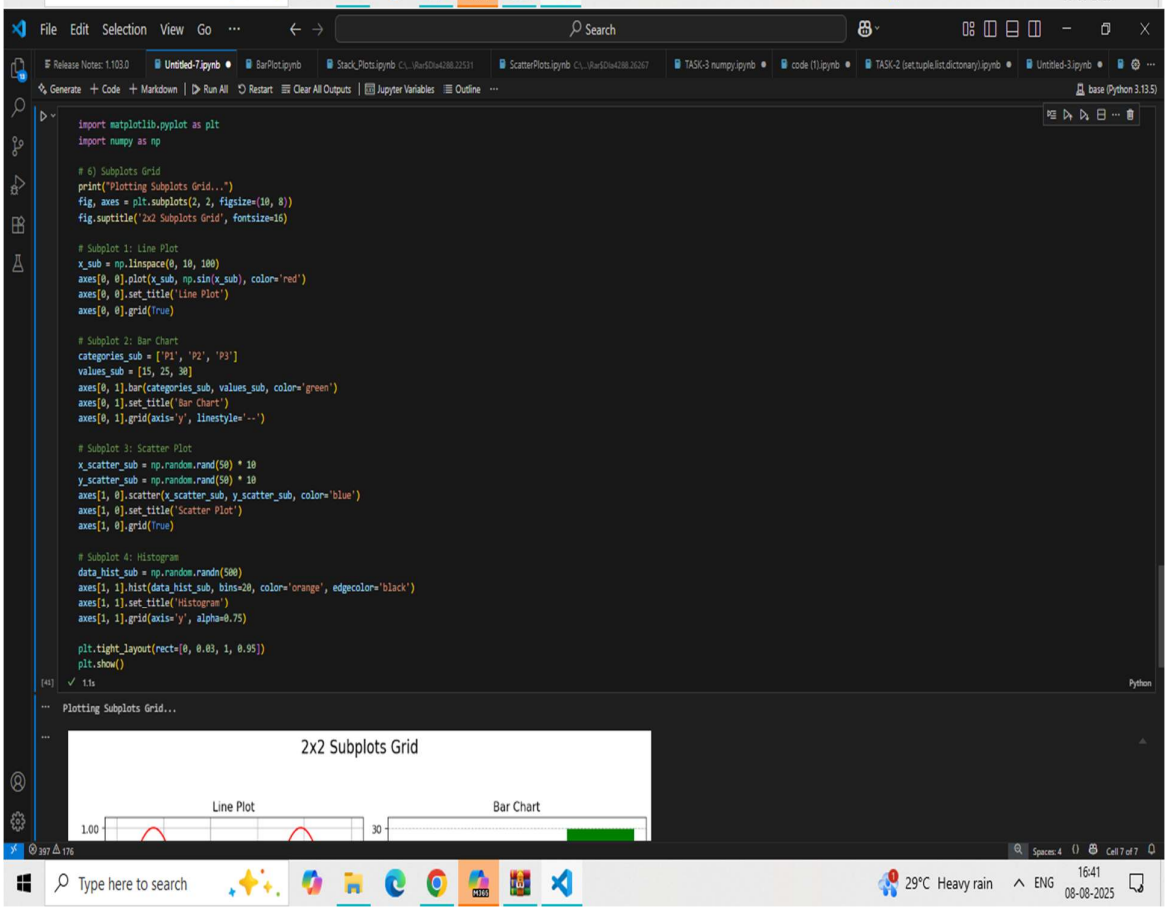
File Edit Selection View Go
Search
Untitled-7.ipynb
Generate + Code + Markdown | Run All Restart Clear All Outputs | Jupyter Variables Outline
base (Python 3.13.5)
import matplotlib.pyplot as plt
import numpy as np
# 6) Subplots Grid
print("Plotting Subplots Grid...")
fig, axes = plt.subplots(2, 2, figsize=(10, 8))
fig.suptitle('2x2 Subplots Grid', fontsize=16)
# Subplot 1: Line Plot
x_sub = np.linspace(0, 10, 100)
axes[0, 0].plot(x_sub, np.sin(x_sub), color='red')
axes[0, 0].set_title('Line Plot')
axes[0, 0].grid(True)
# Subplot 2: Bar Chart
categories_sub = ['P1', 'P2', 'P3']
values_sub = [15, 25, 30]
axes[0, 1].bar(categories_sub, values_sub, color='green')
axes[0, 1].set_title('Bar Chart')
axes[0, 1].grid(axis='y', linestyle='--')
# Subplot 3: Scatter Plot
x_scatter_sub = np.random.rand(50) * 10
y_scatter_sub = np.random.rand(50) * 10
axes[1, 0].scatter(x_scatter_sub, y_scatter_sub, color='blue')
axes[1, 0].set_title('Scatter Plot')
axes[1, 0].grid(True)
# Subplot 4: Histogram
data_hist_sub = np.random.randn(500)
axes[1, 1].hist(data_hist_sub, bins=20, color='orange', edgecolor='black')
axes[1, 1].set_title('Histogram')
axes[1, 1].grid(axis='y', alpha=0.75)
plt.tight_layout(rect=[0, 0.03, 1, 0.95])
plt.show()
1.1s
Python
Plotting Subplots Grid...
2x2 Subplots Grid
Line Plot
Bar Chart
Type here to search
29°C Heavy rain
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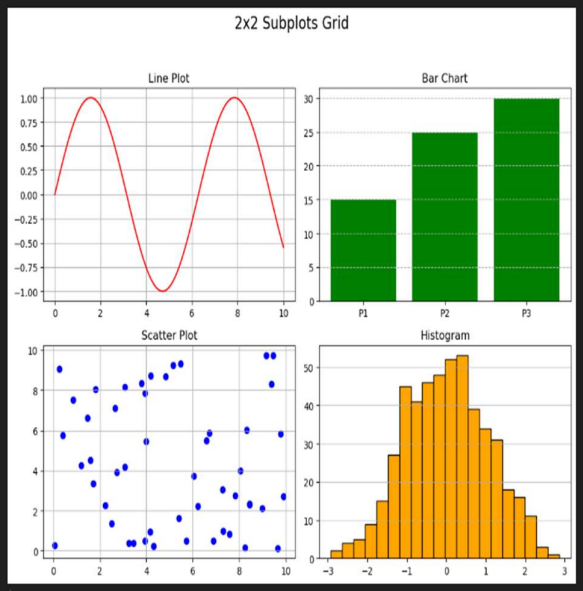
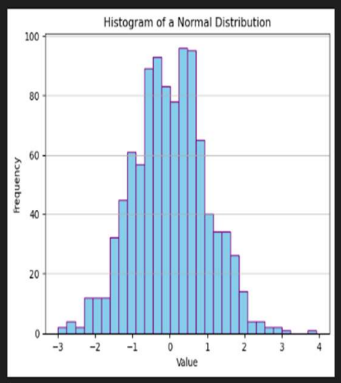
```
plt.tight_layout(rect=[0, 0.03, 1, 0.95])
plt.show()
```

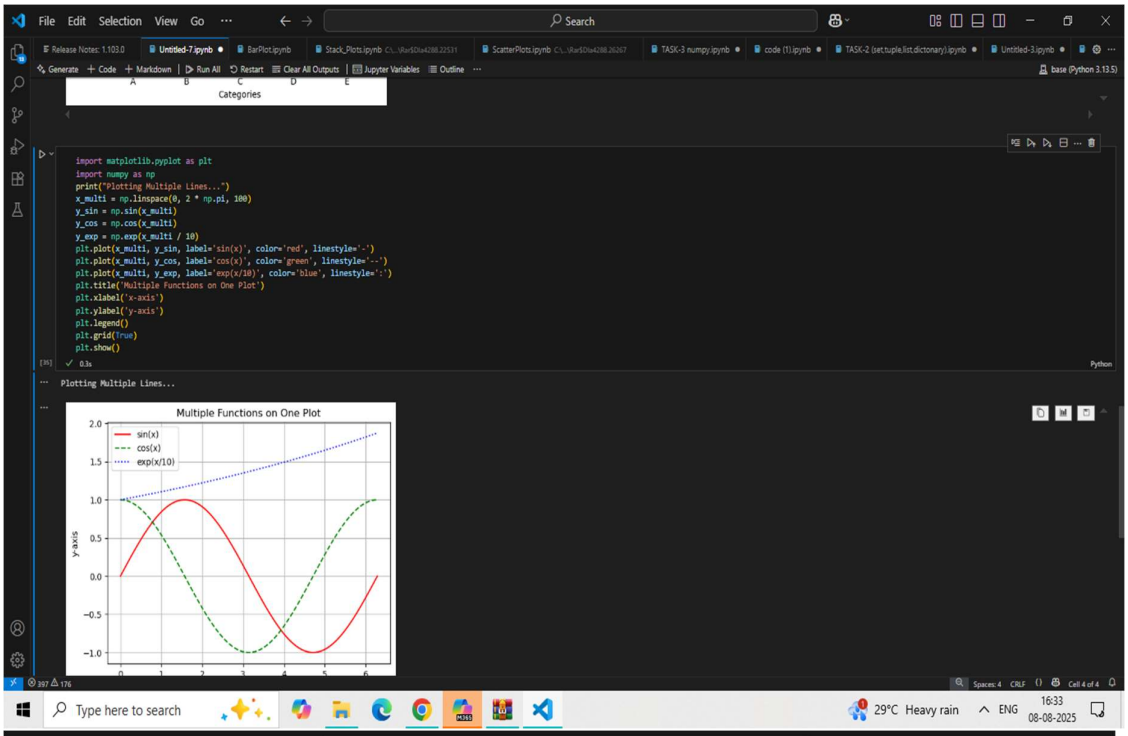
```
Plotting Subplots Grid...
```

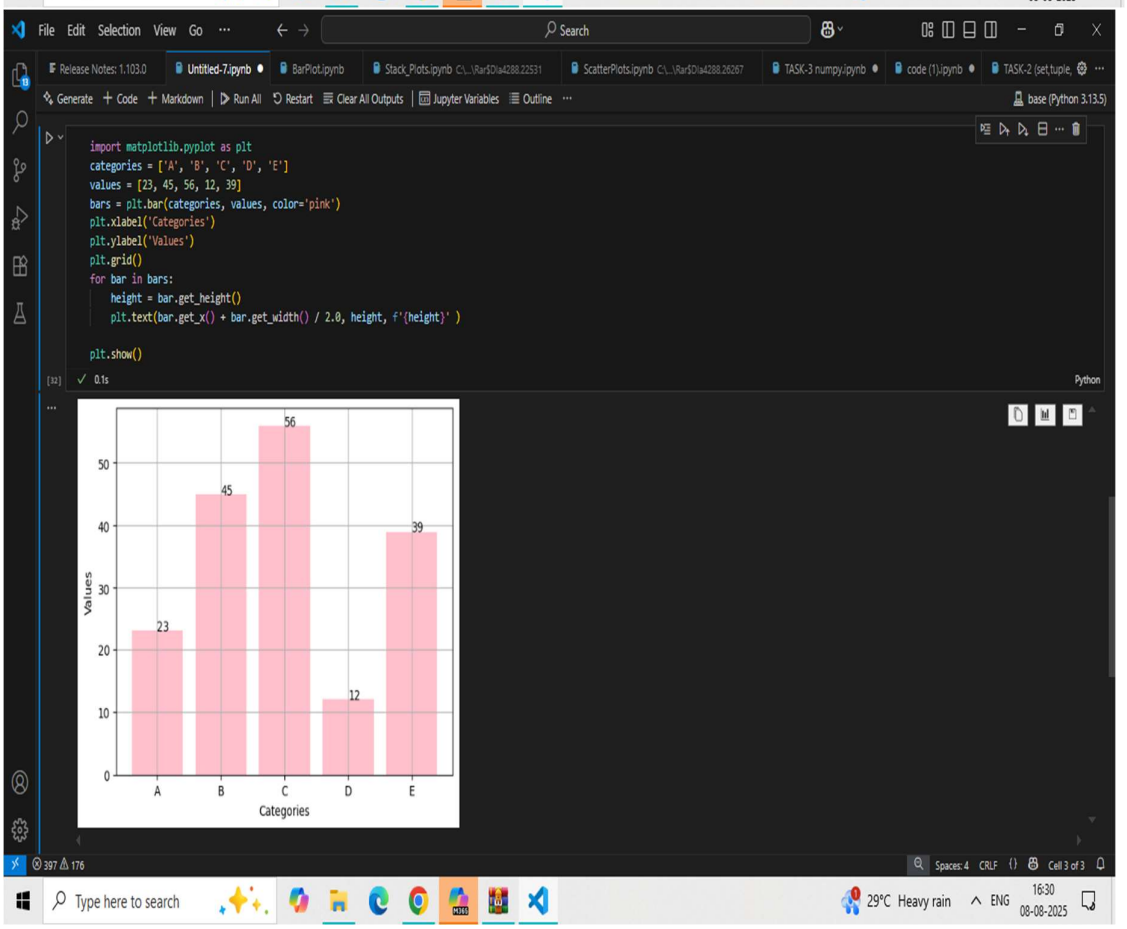



```
import matplotlib.pyplot as plt
import numpy as np
print("Plotting Histogram...")
data_hist = np.random.randn(1000)
plt.hist(data_hist, bins=30, color='skyblue', edgecolor='purple')
plt.title('Histogram of a Normal Distribution')
plt.xlabel('Value')
plt.ylabel('Frequency')
plt.grid(axis='y', alpha=0.75)
plt.show()
```

```
Plotting Histogram...
```

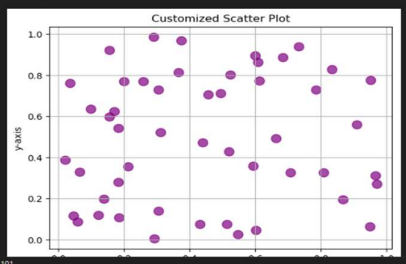



Categories
import matplotlib.pyplot as plt
import numpy as np
print("Plotting Multiple Lines...")
x_multi = np.linspace(0, 2 * np.pi, 100)
y_sin = np.sin(x_multi)
y_cos = np.cos(x_multi)
y_exp = np.exp(x_multi / 10)
plt.plot(x_multi, y_sin, label='sin(x)', color='red', linestyle='-')
plt.plot(x_multi, y_cos, label='cos(x)', color='green', linestyle='--')
plt.plot(x_multi, y_exp, label='exp(x/10)', color='blue', linestyle=':')
plt.title('Multiple Functions on One Plot')
plt.xlabel('x-axis')
plt.ylabel('y-axis')
plt.legend()
plt.grid(True)
plt.show()
Plotting Multiple Lines...
Multiple Functions on One Plot
sin(x)
cos(x)
exp(x/10)
y-axis

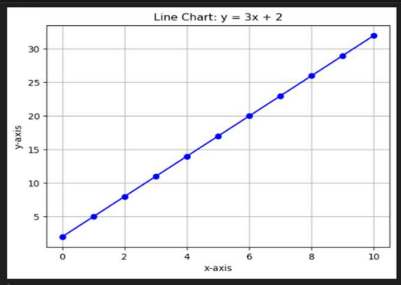

import matplotlib.pyplot as plt
categories = ['A', 'B', 'C', 'D', 'E']
values = [23, 45, 56, 12, 39]
bars = plt.bar(categories, values, color='pink')
plt.xlabel('Categories')
plt.ylabel('Values')
plt.grid()
for bar in bars:
height = bar.get_height()
plt.text(bar.get_x() + bar.get_width() / 2.0, height, f'{height}')
plt.show()
Values
Categories

```
import matplotlib.pyplot as plt
import numpy as np
print("Plotting Scatter Plot...")
np.random.seed(42)
x_scatter = np.random.rand(50)
y_scatter = np.random.rand(50)
plt.scatter(x_scatter, y_scatter, color='purple', s=100, alpha=0.7)
plt.title('Customized Scatter Plot')
plt.xlabel('x-axis')
plt.ylabel('y-axis')
plt.grid(True)
plt.show()
```

```
Plotting Scatter Plot...
```

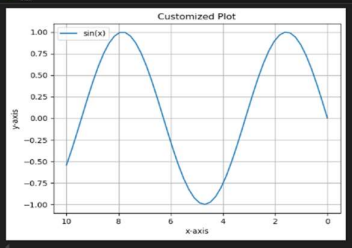



```
import matplotlib.pyplot as plt
import numpy as np
x = np.arange(0, 11, 1)
y = 3 * x + 2
plt.plot(x, y, color='blue', marker='o')
plt.title('Line Chart: y = 3x + 2')
plt.xlabel('x-axis')
plt.ylabel('y-axis')
plt.grid(True)
plt.show()
```

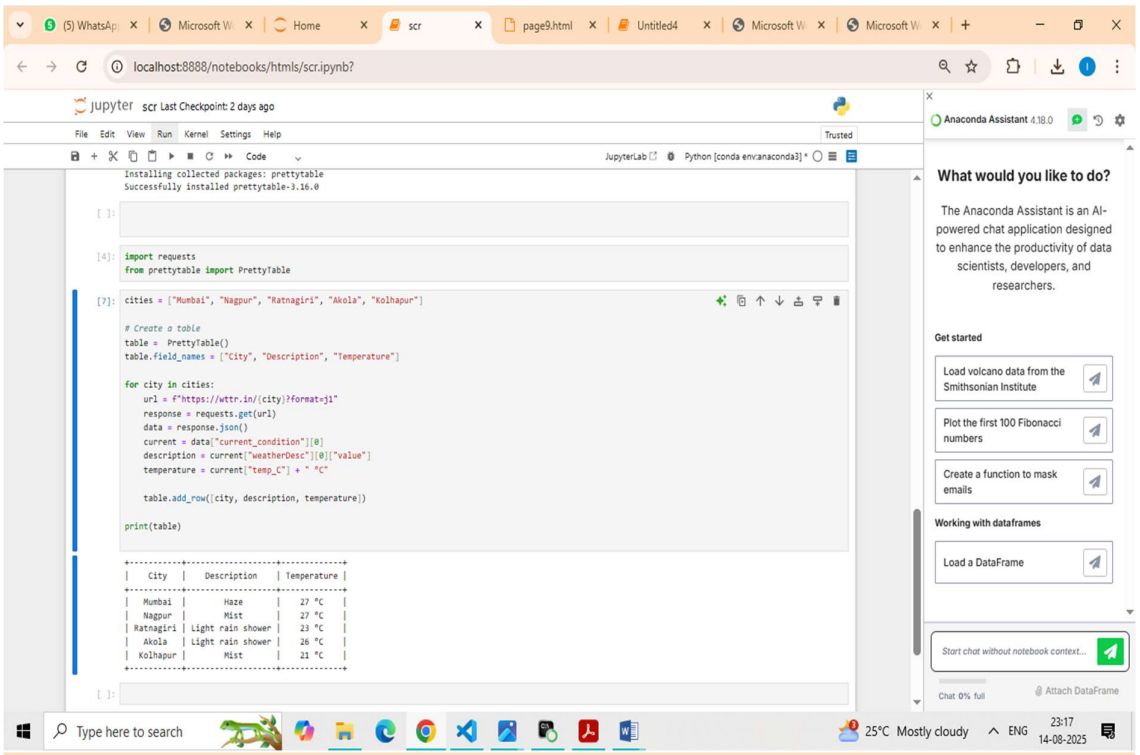


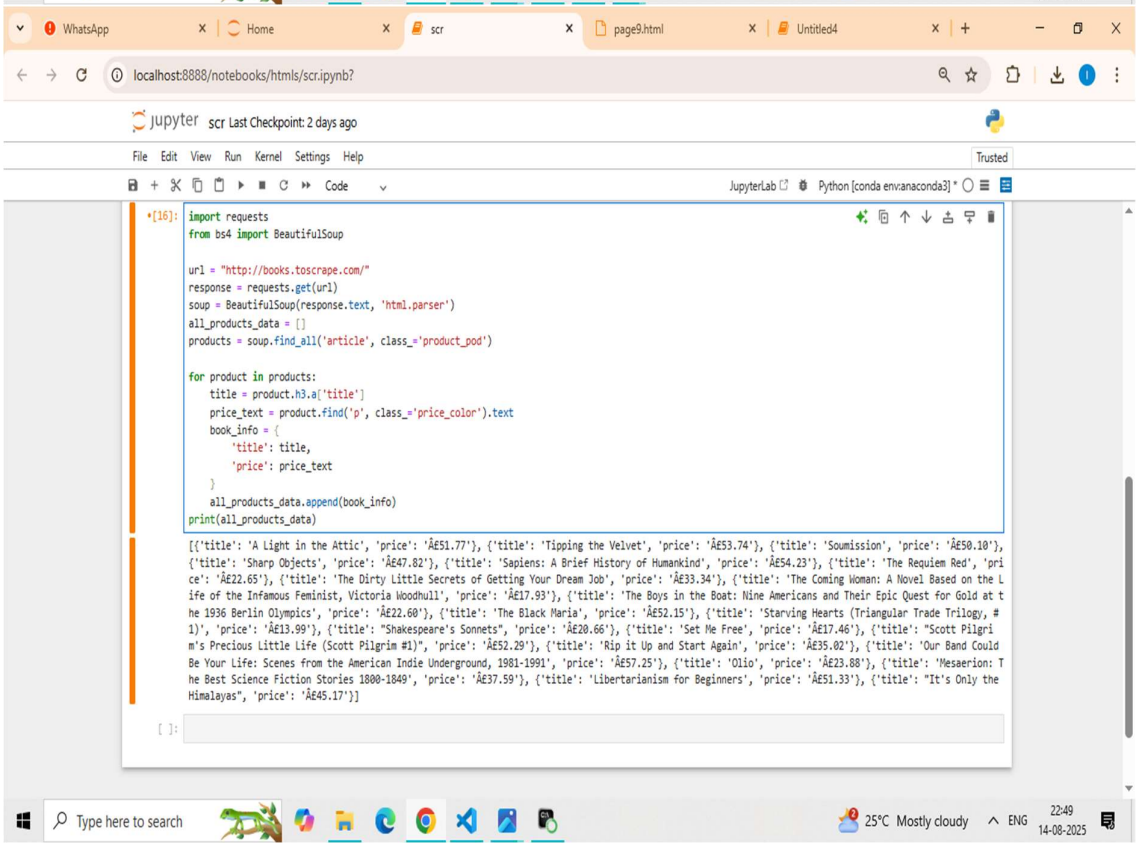
Company B

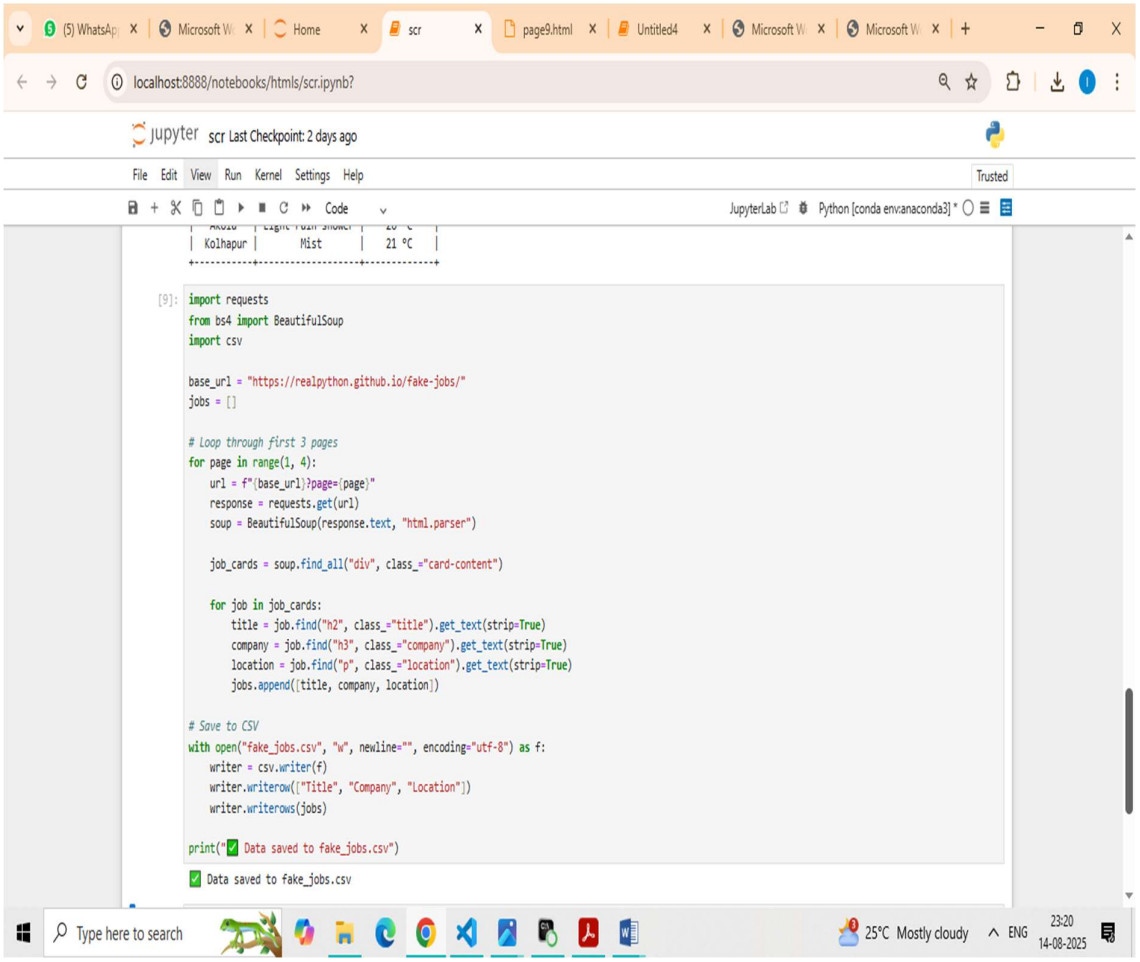
```
import matplotlib.pyplot as plt
import numpy as np
x_cust = np.linspace(0, 10, 50)
y_cust = np.sin(x_cust)
plt.plot(x_cust, y_cust, label='sin(x)')
plt.title('Customized Plot')
plt.xlabel('x-axis')
plt.ylabel('y-axis')
plt.gca().invert_xaxis()
plt.legend()
plt.grid(True)
plt.show()
```



Task 6 scrape






(5) WhatsAp
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Microsoft W
Microsoft W
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jupyter scr Last Checkpoint: 2 days ago
File Edit View Run Kernel Settings Help
Trusted
Code
JupyterLab
Python [conda env:anaconda3]
| Kolhapur | Mist | 21 °C |
[9]:
import requests
from bs4 import BeautifulSoup
import csv
base_url = "https://realpython.github.io/fake-jobs/"
jobs = []
# Loop through first 3 pages
for page in range(1, 4):
url = f"{base_url}?page={page}"
response = requests.get(url)
soup = BeautifulSoup(response.text, "html.parser")
job_cards = soup.find_all("div", class_="card-content")
for job in job_cards:
title = job.find("h2", class_="title").get_text(strip=True)
company = job.find("h3", class_="company").get_text(strip=True)
location = job.find("p", class_="location").get_text(strip=True)
jobs.append([title, company, location])
# Save to CSV
with open("fake_jobs.csv", "w", newline="", encoding="utf-8") as f:
writer = csv.writer(f)
writer.writerow(["Title", "Company", "Location"])
writer.writerows(jobs)
print("✅ Data saved to fake_jobs.csv")
✅ Data saved to fake_jobs.csv
Type here to search
25°C Mostly cloudy
ENG
23:20
14-08-2025