Name - Dharati Manoharrao Thakare
Course Id - AIBIA-A1
Batch Time - 9.30 AM
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Simple Student Project: "Student Performance Dashboard"

Goal:

Analyze and visualize student grades using Pandas, Matplotlib, Seaborn.

Project Summary

📘 Used a sample dataset with student scores.
🔢 Calculated averages.
🏆 Found top performer.
📊 Created visual dashboards:
*Bar chart for average scores.
*Boxplot for score distribution.

Step 1: Dataset

Create a small CSV file or DataFrame manually.

```
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
data = {
    'Students': ['Sanika', 'Pallavi', 'Dharati', 'Aarav', 'Meera'],
    'Sub1': [85, 78, 92, 70, 88],
    'Sub2': [88, 74, 90, 65, 82],
    'Sub3': [90, 80, 85, 72, 95]
}
df = pd.DataFrame(data)
print(df)
```

```
  Students  Sub1  Sub2  Sub3
0   Sanika    85    88    90
1  Pallavi    78    74    80
2  Dharati    92    90    85
3    Aarav    70    65    72
4    Meera    88    82    95
```

Step 2: Data Analysis

1. Average score of each student.

```
df['Average'] = df[['Sub1', 'Sub2', 'Sub3']].mean(axis=1)
print(df['Average'])
```

```
0    87.666667
1    77.333333
2    89.000000
3    69.000000
4    88.333333
Name: Average, dtype: float64
```

2. Which student has the highest average?

```
top3 = df.sort_values(by='Average', ascending=False).head(3)
print("Top Performers:\n", top3[['Students', 'Average']])
```

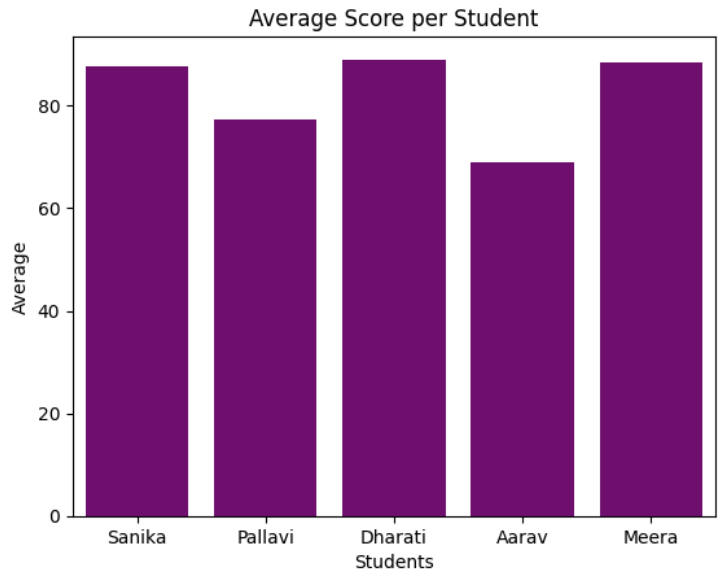
```
Top Performers:
   Students    Average
2  Dharati  89.000000
```

```
4    Meera  88.333333
0   Sanika  87.666667
```

Step 3: Visualizations

1. Bar Plot of Student Averages

```
sns.barplot(x='Students', y='Average', data=df,color="purple")
plt.title("Average Score per Student")
plt.show()
```



2. Boxplot of Subject Scores

```
df_melted = df.melt(id_vars='Students', value_vars=['Sub1', 'Sub2', 'Sub3'],
                    var_name='Subjects', value_name='Marks')

sns.boxplot(x='Subjects', y='Marks', data=df_melted,color="pink")
plt.title("Score Distribution per Subject")
plt.show()
```