Step-by-Step Guide to Jupyter Notebook and Seaborn

1. Introduction

This document provides a clear and structured guide on how to install Jupyter Notebook and Seaborn, create a Pandas DataFrame, and generate basic data visualizations. This guide is intended for beginners in data analysis.

2. Installing Python

Step 1: Download Python from the official website: https://www.python.org

Step 2: Run the installer and check the option 'Add Python to PATH'.

Step 3: Click 'Install Now' and wait for the installation to complete.

Step 4: Verify installation by typing the following command in Command Prompt or Terminal:

```
python --version
```

3. Installing Jupyter Notebook

Step 1: Open Command Prompt or Terminal.

Step 2: Upgrade pip (recommended):

```
python -m pip install --upgrade pip
```

Step 3: Install Jupyter Notebook:

```
pip install notebook
```

Step 4: Launch Jupyter Notebook using:

```
jupyter notebook
```

4. Installing Seaborn and Required Libraries

Install Seaborn along with its dependencies by running:

```
pip install seaborn
```

This will automatically install Pandas, NumPy, and Matplotlib if they are not already installed.

5. Creating a Pandas DataFrame

Step 1: Import the Pandas library.

```
import pandas as pd
```

Step 2A: Create sample data (you can import sample csv file, refer to python documentation).

```
data = {
   "Student": ["Alice", "Bob", "Charlie", "Diana", "Evan"],
   "Math": [85, 78, 92, 88, 76],
   "Science": [90, 82, 89, 94, 80],
   "English": [88, 75, 90, 85, 78]
}
```

Step 2B: You can also use pandas dataframe to use other file formats

```
df = pd.read_csv(Sample2.csv)
```

Step 3: Convert the data into a DataFrame.

```
df = pd.DataFrame(data)
```

Step 4: Display the DataFrame by typing df in a Jupyter Notebook cell.

6. Creating Sample Plots Using Seaborn

Import Seaborn and Matplotlib:

```
import seaborn as sns
import matplotlib.pyplot as plt
```

Bar Plot – Average Scores per Subject:

```
subject_avg = df[["Math", "Science", "English"]].mean()
sns.barplot(x=subject_avg.index, y=subject_avg.values)
```

```
plt.title("Average Scores per Subject")
plt.show()
```

Line Plot – Student Performance Across Subjects:

```
df_melted = df.melt(id_vars="Student", var_name="Subject",
value_name="Score")
sns.lineplot(data=df_melted, x="Subject", y="Score", hue="Student",
marker="o")
plt.show()
```

7. Conclusion

You have successfully learned how to install Jupyter Notebook and Seaborn, create a DataFrame, and visualize data using basic plots. These skills are fundamental for data analysis and visualization projects.