# Importing required libraries

import seaborn as sns

import matplotlib.pyplot as plt

# Que 1: Five plots using Seaborn and their uses

plots\_and\_uses = """

1. Line Plot: Used to visualize the relationship between two continuous variables, often showing trends over time.

2. Box Plot: Used to display the distribution of data and identify outliers, quartiles, and median values.

3. Histogram: Used to display the frequency distribution of a single variable.

4. Pair Plot: Used to visualize pairwise relationships in a dataset, particularly useful for multivariate analysis.

5. Heatmap: Used to display data values as a matrix with color encoding, often used for correlation matrices.

"""

# Que 2: Line Plot for "fmri" dataset

fmri\_data = sns.load\_dataset("fmri")

plt.figure(figsize=(10, 6))

sns.lineplot(data=fmri\_data, x="timepoint", y="signal", hue="event", style="region")

plt.title("Line Plot for 'fmri' Dataset")

plt.show()

# Que 3: Box Plots for "titanic" dataset

titanic\_data = sns.load\_dataset("titanic")

plt.figure(figsize=(10, 6))

plt.subplot(1, 2, 1)

sns.boxplot(data=titanic\_data, x="pclass", y="age")

plt.title("Box Plot of Age by Pclass")

plt.subplot(1, 2, 2)

sns.boxplot(data=titanic\_data, x="pclass", y="fare")

plt.title("Box Plot of Fare by Pclass")

plt.tight\_layout()

plt.show()

# Que 4: Histogram for "diamonds" dataset

diamonds\_data = sns.load\_dataset("diamonds")

plt.figure(figsize=(10, 6))

sns.histplot(data=diamonds\_data, x="price", hue="cut", kde=True)

plt.title("Histogram of Price by Cut")

plt.show()

# Que 5: Pair Plot for "iris" dataset

iris\_data = sns.load\_dataset("iris")

sns.pairplot(data=iris\_data, hue="species")

plt.suptitle("Pair Plot for 'iris' Dataset", y=1.02)

plt.show()

# Que 6: Heatmap for "flights" dataset

flights\_data = sns.load\_dataset("flights").pivot("month", "year", "passengers")

plt.figure(figsize=(10, 8))

sns.heatmap(flights\_data, annot=True, fmt="d", cmap="coolwarm")

plt.title("Heatmap for 'flights' Dataset")

plt.show()