7. Visualize the data using Python libraries matplotlib, seaborn by plotting the graphs

for tips dataset.( Charts : Line chart, Barplot, Heatmap, Scatterplot, histogram,

boxplot, violin, timeseries chart)

---------no need to upload csv file-----------

import seaborn as sns

df = sns.load\_dataset('tips')

import pandas as pd

import seaborn as sns

import matplotlib.pyplot as plt

df = sns.load\_dataset('tips')

sns.set(style="whitegrid")

----------------# Line chart: average total\_bill by day-----------------

plt.figure(figsize=(8, 5))

df.groupby('day')['total\_bill'].mean().plot(marker='o')

plt.title('Average Total Bill by Day')

plt.xlabel('Day')

plt.ylabel('Average Total Bill')

plt.grid(True)

plt.show()

-----------------# Barplot: average tip by gender---------------

plt.figure(figsize=(6, 5))

sns.barplot(x='sex', y='tip', data=df)

plt.title('Average Tip by Gender')

plt.show()

-------------# Heatmap: correlation between numeric features-----------

plt.figure(figsize=(8, 6))

sns.heatmap(df.corr(numeric\_only=True), annot=True, cmap='coolwarm')

plt.title('Correlation Heatmap')

plt.show()

OR

import pandas as pd

import seaborn as sns

import matplotlib.pyplot as plt

# Load dataset

file\_path = "heart - 6 charts .csv" # Or use "tip.csv" if working with that

df = pd.read\_csv(file\_path)

# Select only numeric columns

numeric\_df = df.select\_dtypes(include='number')

# Create correlation heatmap

plt.figure(figsize=(8, 6))

sns.heatmap(numeric\_df.corr(), annot=True, cmap='coolwarm', fmt=".2f", square=True)

plt.title('Correlation Heatmap of Numeric Features')

plt.tight\_layout()

plt.show()

------------# Scatterplot: tip vs. total\_bill---------

plt.figure(figsize=(7, 5))

sns.scatterplot(x='total\_bill', y='tip', hue='sex', data=df)

plt.title('Tip vs. Total Bill')

plt.show()

OR

import pandas as pd

import seaborn as sns

import matplotlib.pyplot as plt

# Load the tips dataset

file\_path = "tip.csv" # Make sure the path matches your file

df = pd.read\_csv(file\_path)

# Create scatterplot

plt.figure(figsize=(7, 5))

sns.scatterplot(x='total\_bill', y='tip', hue='sex', data=df)

plt.title('Scatterplot: Tip vs. Total Bill')

plt.xlabel('Total Bill')

plt.ylabel('Tip')

plt.tight\_layout()

plt.show()

-------------# Histogram: distribution of total\_bill----------

plt.figure(figsize=(6, 4))

sns.histplot(df['total\_bill'], bins=20, kde=True)

plt.title('Distribution of Total Bill')

plt.show()

OR

import pandas as pd

import seaborn as sns

import matplotlib.pyplot as plt

# Load the dataset

file\_path = "tip.csv"

df = pd.read\_csv(file\_path)

# Plot histogram using distplot (deprecated in newer versions but works in older)

plt.figure(figsize=(6, 4))

sns.distplot(df['total\_bill'], bins=20, kde=True, color='skyblue')

plt.title('Distribution of Total Bill')

plt.xlabel('Total Bill')

plt.ylabel('Density')

plt.tight\_layout()

plt.show()

------------# Boxplot: tip by smoker---------------

plt.figure(figsize=(6, 5))

sns.boxplot(x='smoker', y='tip', data=df)

plt.title('Tip Distribution by Smoker Status')

plt.show()

---------------# Violin plot: tip by day-------------

plt.figure(figsize=(8, 5))

sns.violinplot(x='day', y='tip', data=df)

plt.title('Tip Distribution by Day')

plt.show()

----------# Time series chart: total\_bill across entries (simulated as time series)---------

plt.figure(figsize=(10, 4))

plt.plot(df['total\_bill'])

plt.title('Total Bill Over Entries')

plt.xlabel('Index (simulated time)')

plt.ylabel('Total Bill')

plt.show()