import pandas as pd

import matplotlib.pyplot as plt

import seaborn as sns

def draw\_line\_plot():

# Importing data

df = pd.read\_csv("fcc-forum-pageviews.csv", parse\_dates=["date"], index\_col="date")

# Cleaning data

df\_clean = df[(df["value"] >= df["value"].quantile(0.025)) & (df["value"] <= df["value"].quantile(0.975))]

# Plotting

fig, ax = plt.subplots(figsize=(10, 5))

ax.plot(df\_clean.index, df\_clean["value"], color="r", linewidth=1)

ax.set\_title("Daily freeCodeCamp Forum Page Views 5/2016-12/2019")

ax.set\_xlabel("Date")

ax.set\_ylabel("Page Views")

plt.savefig("line\_plot.png")

plt.close()

def draw\_bar\_plot():

# Importing data

df = pd.read\_csv("fcc-forum-pageviews.csv", parse\_dates=["date"])

# Cleaning data

df["year"] = df["date"].dt.year

df["month"] = df["date"].dt.month\_name()

df\_grouped = df.groupby(["year", "month"])["value"].mean().unstack()

# Plotting

fig = df\_grouped.plot(kind="bar", figsize=(10, 5)).get\_figure()

plt.xlabel("Years")

plt.ylabel("Average Page Views")

plt.legend(title="Months", labels=df\_grouped.columns)

plt.xticks(rotation=90)

plt.savefig("bar\_plot.png")

plt.close()

def draw\_box\_plot():

# Importing data

df = pd.read\_csv("fcc-forum-pageviews.csv", parse\_dates=["date"])

# Cleaning data

df["year"] = df["date"].dt.year

df["month"] = df["date"].dt.month\_name()

# Plotting

fig, axes = plt.subplots(1, 2, figsize=(10, 5))

sns.boxplot(x="year", y="value", data=df, ax=axes[0])

axes[0].set\_title("Year-wise Box Plot (Trend)")

axes[0].set\_xlabel("Year")

axes[0].set\_ylabel("Page Views")

sns.boxplot(x="month", y="value", data=df, ax=axes[1],

order=["January", "February", "March", "April", "May", "June",

"July", "August", "September", "October", "November", "December"])

axes[1].set\_title("Month-wise Box Plot (Seasonality)")

axes[1].set\_xlabel("Month")

axes[1].set\_ylabel("Page Views")

plt.tight\_layout()

plt.savefig("box\_plot.png")

plt.close()

# Testing the functions

draw\_line\_plot()

draw\_bar\_plot()

draw\_box\_plot()