*import* pandas *as* pd

*import* matplotlib.pyplot *as* plt

# *Load the dataset*

data = pd.read\_csv("Traffic\_Violations.csv")

# *I. Who has been caught in maximum for speeding violation (Male or Female)?*

# *Filter dataset for speeding violations*

speeding\_violations = data[data["Violation Type"] == "SPEEDING"]

# *Count speeding violations by gender*

speeding\_counts = speeding\_violations["Driver Gender"].value\_counts()

# *Determine the gender with maximum speeding violations*

max\_speeding\_gender = speeding\_counts.idxmax()

print(f"The gender caught in maximum for speeding violation is: {max\_speeding\_gender}")

# *II. How many female drivers were being stopped for drug-related issues?*

# *Filter dataset for drug-related violations*

drug\_related\_violations = data[data["Violation Type"].str.contains("DRUG")]

# *Further filter dataset for female drivers*

female\_drug\_related\_violations = drug\_related\_violations[drug\_related\_violations["Driver Gender"] == "Female"]

# *Count drug-related violations for female drivers*

female\_drug\_related\_count = len(female\_drug\_related\_violations)

print(f"The number of female drivers stopped for drug-related issues is: {female\_drug\_related\_count}")

# *Visualization*

plt.figure(figsize=(10, 5))

# *Bar plot for speeding violations by gender*

plt.subplot(1, 2, 1)

speeding\_counts.plot(kind='bar', color=['blue', 'orange'])

plt.title('Speeding Violations by Gender')

plt.xlabel('Gender')

plt.ylabel('Count')

# *Pie chart for proportion of female drivers stopped for drug-related issues*

plt.subplot(1, 2, 2)

labels = ['Female Drug Related', 'Others']

sizes = [female\_drug\_related\_count, len(data) - female\_drug\_related\_count]

plt.pie(sizes, labels=labels, autopct='%1.1f%%', colors=['orange', 'lightgray'])

plt.title('Proportion of Female Drivers Stopped for Drug-Related Issues')

plt.tight\_layout()

plt.show()

