Using the waiter's tip data set, perform the following analysis to understand what how tips to waiter is influenced by various parameters

Dataset Description

Filename: tips.csv

Description for individual columns are listed below

- total_bill: bill in dollars
- tip: tip in dollars
- sex: gender of the bill payer
- smoker: whether there were smokers in the party
- day: day of the week
- time: time of day
- size: size of the party

Questions

1. Calculate average tip by the following groups and visualize the same using bar charts (use subplots)

1. Gender,
2. Size of the party
3. Smoker vs Non-Smoker
4. Day of the week

2. Create box plot for tip amount column. Split the box plot by above mentioned categories (use subplots)

3. Using the above bar charts & box plots, identify which group influences the tip amount the most

4. Visualize the relationship between total bill amount vs tip amount using scatter plot. The metric of interest should always be in the Y-axis. Here we are interested in understanding the tip pattern. Hence Y-axis should be tip amount and X axis should be total bill

5. Based on the above scatter plot, what do you think the waiter will do. Will he/she make you eat more or less to get good tip?

6. Substantiate your above inference through appropriate statistical test

7. In the above scatter plot, color each circle by gender and list down your inferences