Jon Organ

CS677

Homework 10, Tips

**Question 1:**

Average lunch tip as a percentage of meal cost: 15.89%

Average dinner tip as a percentage of meal cost: 14.92%

**Question 2:**

Average Thur tip as a percentage of meal cost: 15.67%

Average Fri tip as a percentage of meal cost: 15.94%

Average Sat tip as a percentage of meal cost: 14.64%

Average Sun tip as a percentage of meal cost: 15.2%

**Question 3:**

Highest tips:

Time: lunch

Day: Fri

Average tip: 18.88%

**Question 4:**

Correlation between tips and meal prices: 0.67573

**Question 5:**

The correlation between tips and size of group is 0.4893. This is slightly less related to one another than tips and meal prices.

**Question 6:**

35.73% of customers are smokers.

**Question 7:**

After applying linear regression to each day, and taking the average of the slope of each day it would appear that tips are increasing each day with an average slope coefficient of 0.009151243612178034

**Question 8:**

Yes, there is a difference in correlation between smokers and non-smokers.

Smokers:

Correlation between tip and total bill : 0.4882179411628103

Correlation between tip and size : 0.3322267000431811

Non-smokers:

Correlation between tip and total bill : 0.822182625705083

Correlation between tip and size : 0.5801065981707028