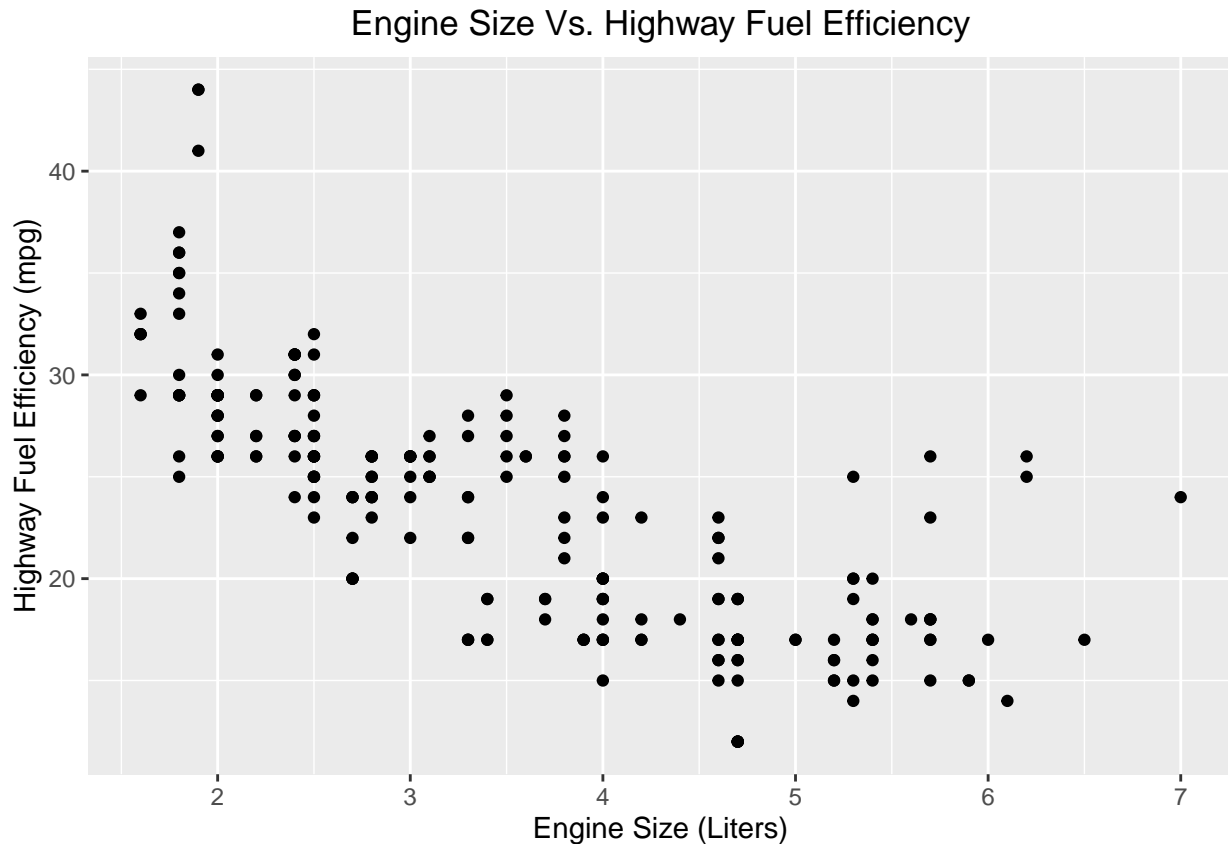


SSC 442 Lab 01

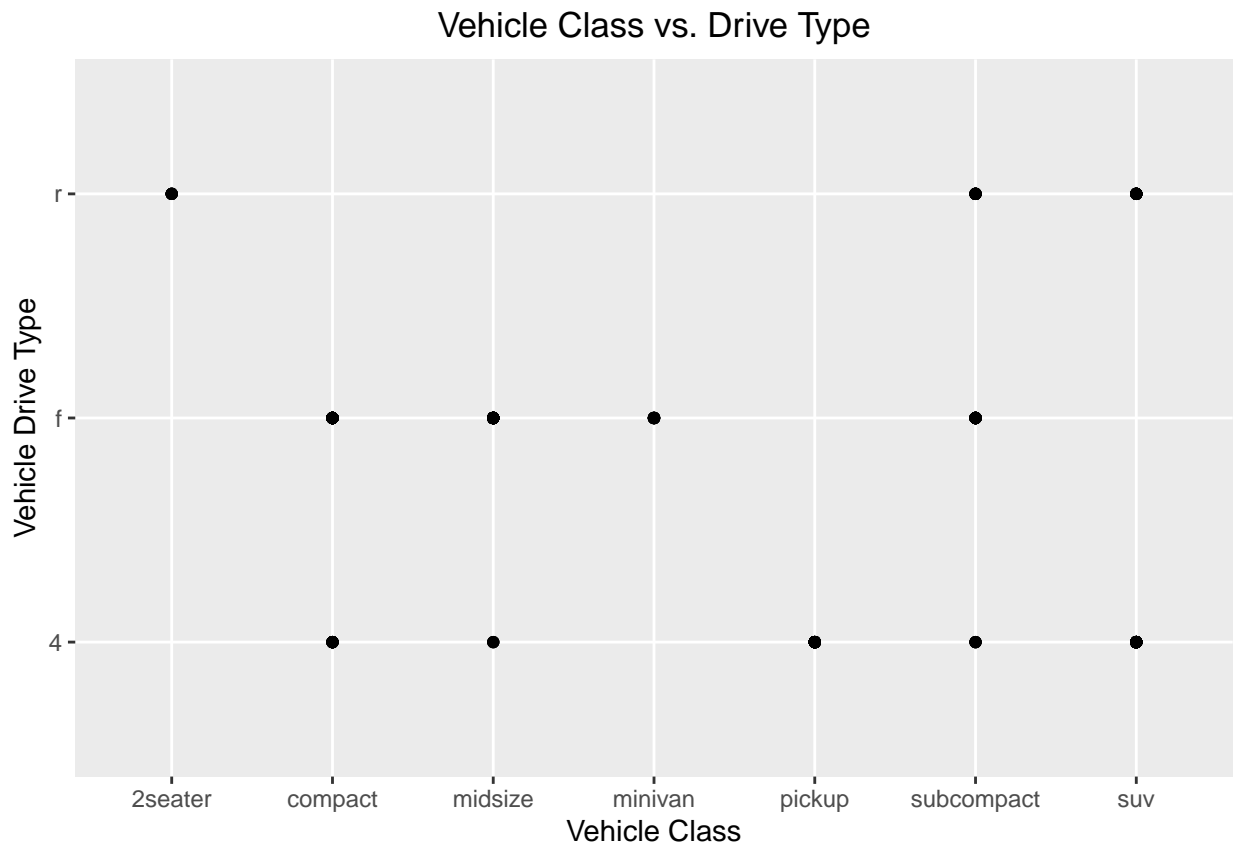
Team 7

1/16/2020

Exercise 1:

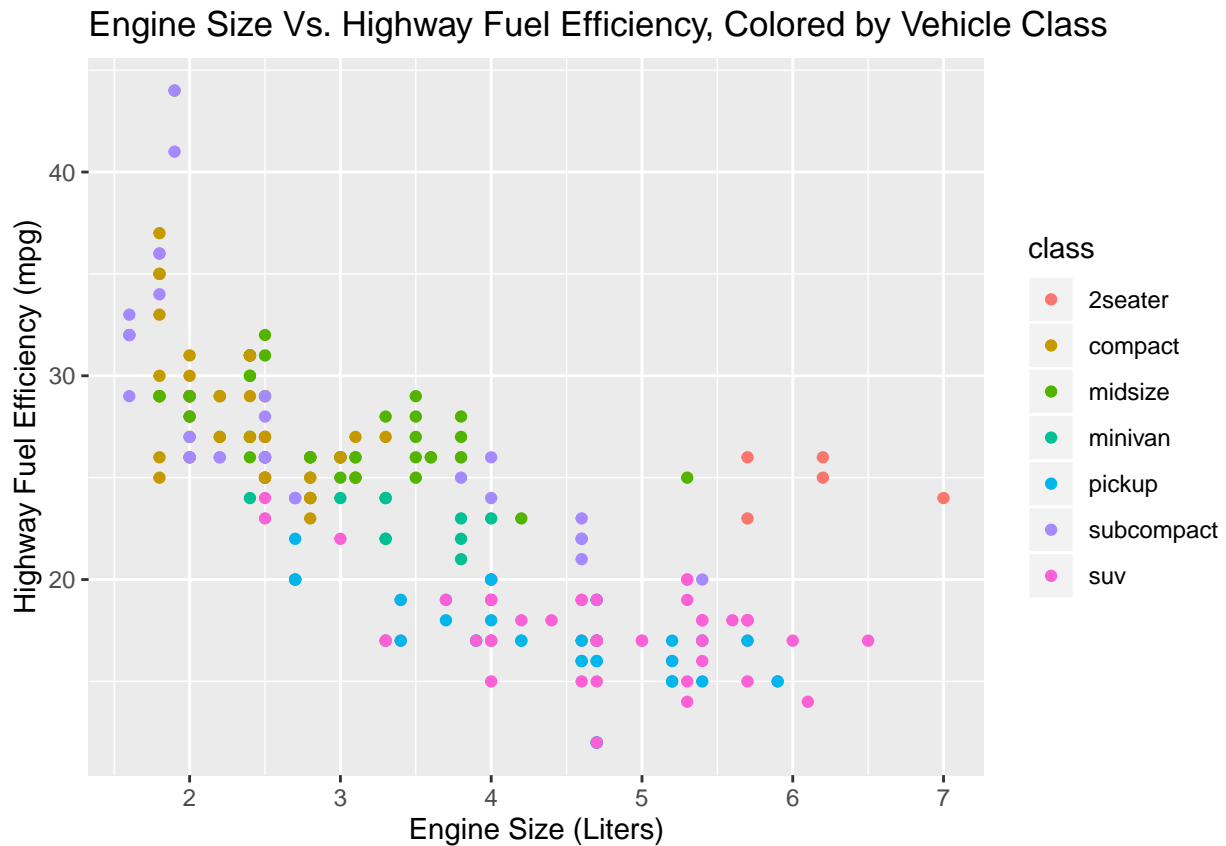


This scatter plot of Engine Size vs. Highway Fuel Efficiency suggests a negative correlation between engine size and highway fuel efficiency. In other words, the data demonstrates a general trend that as engine size (disp) increases, highway fuel efficiency will decrease. Of course, this relationship is expected, as one can hypothesize that as the size of the engine increases, the engine will use more gasoline, thus leading to a lower highway fuel efficiency.



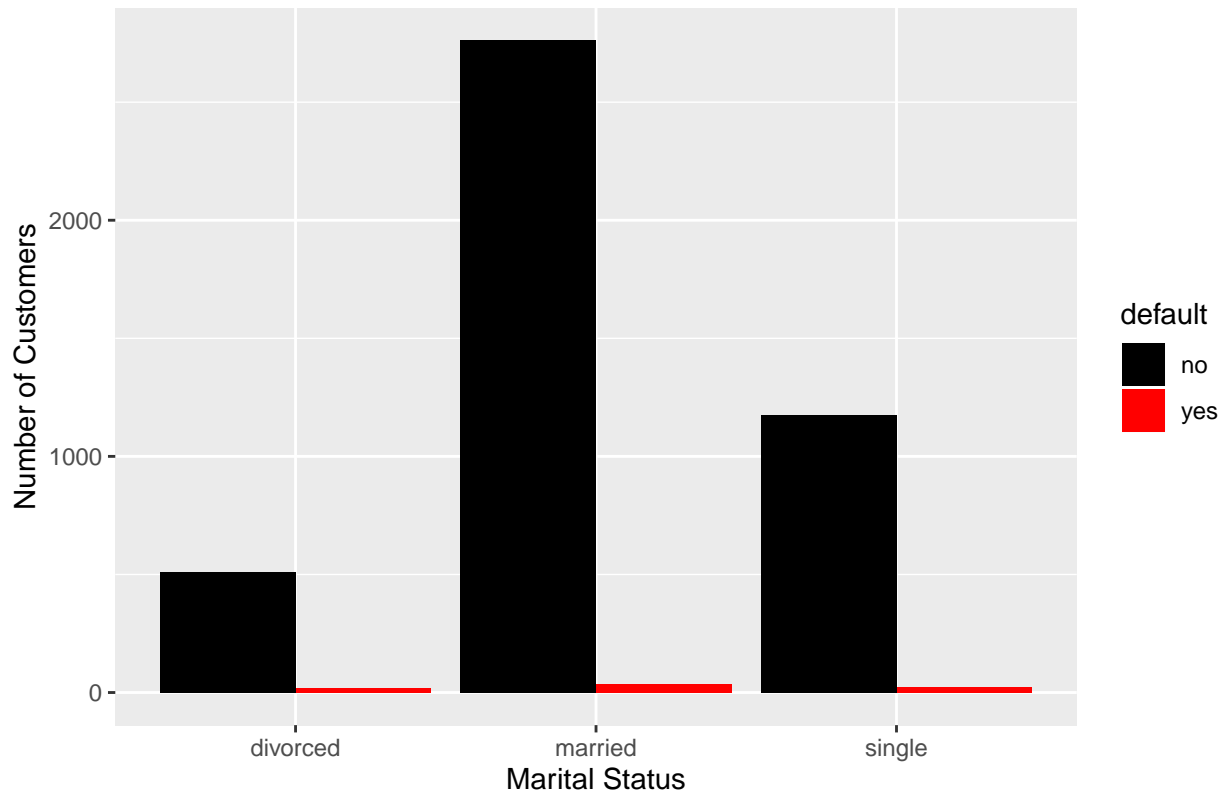
This scatter plot of Vehicle Class vs. Drive Type is not useful, due to the fact that there is no observable relationship between the two variables. The vehicle class generally dictates what drive type the vehicle may have, and there are far too few data points to make any reasonable conclusions.

Exercise 1b:



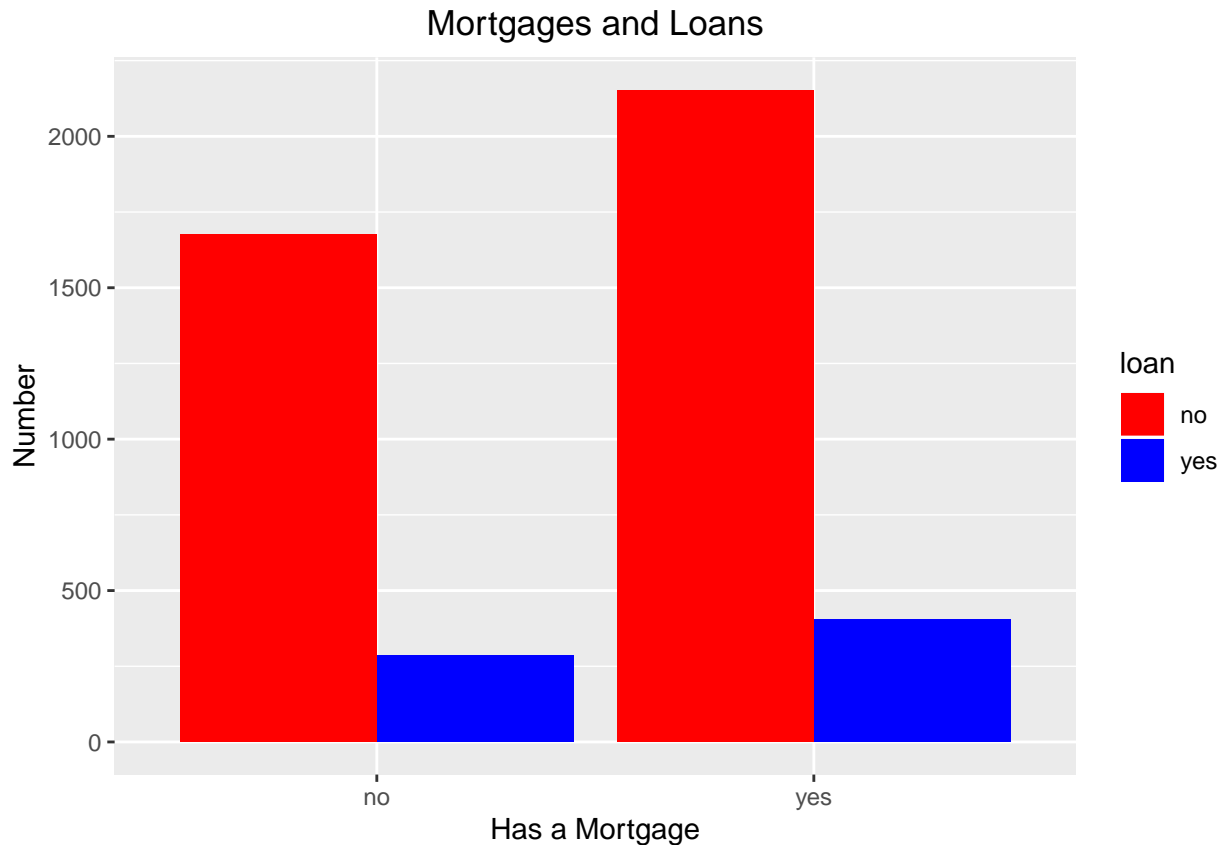
Exercise 2:

Marital Status and Default Rates with Education Levels



	totalNumCustomers	totalNumCustomersDefaulted	percentageDefaulted
Divorced	528	18	3.409091
Married	2797	36	1.287093
Single	1196	22	1.839465
Total	4521	76	1.681044

The above figures indicate how customer marital status is related to the rate at which they default on their loans or mortgages. It is also worth noting that in general, a very small proportion (approximately 1.7%) of all customers, across all marital statuses, default on the loans/mortgages they hold. Furthermore, the table demonstrates that divorcees are the most at-risk population for defaulting on their loan/mortgage, while married couples are the population with the lowest risk of defaulting.



	Number of Customers	Percentage
Neither a Mortgage nor a Loan	1677	37.093563
Only a Mortgage	2153	47.622208
Only a Loan	285	6.303915
Both a Mortgage and a Loan	406	8.980314

These figures display data on customers who have neither a loan nor a mortgage, only a mortgage, only a loan, or both. The graph illustrates that the largest population has only a mortgage, but the smallest population has both a loan and a mortgage. The table breaks these populations down into percentages, and it is clear that roughly half of all customers hold mortgages, while the next largest population is customers who have neither a mortgage nor a loan. Thus, from a business perspective, one of the best approaches to increasing revenues for the bank would be to entice the large population of customers (approximately 37%) who do not have a mortgage or a loan to take out a mortgage or loan. Another possible strategy to increase revenue would be to target the population of customers who only have a loan or a mortgage, and propose that they either take out another or take out a new type.