Deliverable 2: Project Proposal

Introduction

Background information: I chose the car sales data set because I can use it to find new information using the data available within the data set. I will also find it interesting how car prices depreciate over time, especially from what brand. For example, how much a Porsche from 2008 compares to a Ford.

Purpose: The purpose of this project is to find the average price of cars from each decade, then take the average price from each decade to determine the rate at which prices fall on vehicles.

Significance: I found this interesting after realizing how cheap cars are from 20-30 years ago are today by looking at the data set. I also am interested in seeing what the depreciation is like on a sports car over an economy car.

Objectives

Primary Objective: To determine the rate at which cars go gown in value over the year. I will be taking the average cost of a car from each decade then analyze the difference and divide it over the difference in years to find the rate of depreciation.

Secondary Objectives: I want to find the depreciation rate of a sports car and compare that to an economy car to see how much more or less they go down in value.

Methodology

Approach: The way I will tackle this project is that I will read in the data set, then get years that are within a one-decade range and assign each decade to its own with the cars and info into their own data frame. Then I will find the average cost for a car in that decade and do the same for the following decade. I will take the difference and divide it by the difference in years. I will take the same approach to find the depreciation value of a sports car over an economy car except filter my data set to only include certain car brands for each decade then I can compare each rate of change.

Tools and Resources: For this project I will need R, and RStudio Which I will be working in to create the project, and the car sales dataset which I will be getting the data from.

Timeline:

Week 1: Create a data frame that shows the average cost of cars from each decade.

Week 2: Find the rate of change of each decade sequentially, then add each value to the data frame in chronological order.

Week 3: I will make a data frame for the average cost of car brands like and Porsche

Week 4: Add to the data frame the rate of change in prices between the two kinds of vehicles.

Week 5: I will use the rates of change collected through this data to find the average to determine the rate of change a car will experience as its ages through the decades.

Week 6: Refining the project or a grace period if I still need time to work it out.

Week 7: Turn in week, make sure everything works as intended and is finalized by the 16th of October.

Expected Outcomes

Deliverables: The project will be a sofware that can be viewed when clicked on. The project will take you to an html site to view the data sets.

Success Outcome: I would classify a success as being able to find and set rates of change of each decade to a data frame to be able to analyze.

Challenges and Limitations

Potential Challenges: I could run into issues with my code getting to messy or difficult to understand. I may also run into issues with the data that may not line with what I am trying to achieve and will require time to work around.

Limiting factors: I could be limited by my lack of experience in using R or using the libraries to analyze data with which could push the project further or cut some content out.

Conclusion

Summary: With this project I want to be able to find how much cars depreciate over the years. For this I will need to know how to use libraries like "dplyr" and "tidyverse" to analyze data and create new data and data frames.

Call to Action: This project will be crusial for fully understanding all concepts that were covered in the semester so far and create a better understanding of topics I need refining. I will also be introduced to making very surface level trends from data, as I will be using rates of change to find how cars appreciate or depreciate in value over the years.