CPSC 471Fall 2022

Group Project Proposal

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Canada Wide Car Rental Service

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1. Project Title

Canada Wide Car Rental Service

1. Introduction

In this project, we are proposing to develop a more user-friendly database system for a car rental company and their customers. The database will allow customers to choose and schedule vehicles to rent with more specific criteria and will also allow employees to have a better insight about the vehicle inventory and maintenance records.

Our motivation behind this project is to provide customers with a website that shows the exact details of the vehicles to rent rather than a general description of the vehicle size, as well as, to provide the employees with a more streamlined way of tracking car rentals and the vehicle locations.

Below we define our car rental company database in more detail, followed by our proposed solution, our motivation for this project and finally our conclusion. References are available at the end.

3. Problem Definition

The need for car rentals came almost at the same time when cars were gaining popularity. The earliest car rental in history was established in 1906 when the most popular vehicle at the time was the Ford Model T. Nowadays, as travelling is more convenient, the demand for car rentals grows higher. Car renting can range from a few hours for people to move homes, to a few weeks or even a few months for tourists.

With the higher demand, the company must rely on a proper management system to provide available vehicles to customers, as well as keep up to date records of their stock. In general, car rental companies allow customers to search for rental vehicles based only on the relative size of the vehicle, for example, economy, compact, standard, luxury, etc., but do not allow customers to search for vehicles based on more precise criteria such as the colour, fuel type, occupancy or fuel economy.

This problem is interesting as in an ever-changing world, some consumers are becoming more concerned with the type of fuel or fuel economy of the vehicles they drive, while others are superficial and care about only the colour of the vehicle they drive. The existing car rental websites allow customers to schedule vehicles only in terms of the size of the vehicle with no other details provided. In this project we are looking to improve the standard car rental website to show the exact details of the vehicle from the size and colour to the available features.

Included in our References section are six major car rental websites that deal with vehicle rentals in very similar ways. Our database will be similar in the sense that we will provide information on the size of the vehicles, but we will also provide more information to customers, which will also be available to the employees of the car rental company. We feel that this is an improvement to the current standard car rental website model.

4. Proposed Solution

This project database will keep track of all vehicles, which includes but is not limited to vehicle size and cargo size, colour, and interior details. By keeping records of the details, and allowing the customers to search such details, it will be easier for customers to decide which vehicle to rent. Furthermore, the employees will have access to up-to-date information about the location of rental vehicles among other details. The project will build a website that gives customers the ability to choose freely from a range of cars, from multiple locations, to rent out for a specified time. It will also give the system administrator and employees the ability to see the vehicle maintenance needs and update the company’s info. In this project, we will implement a much more refined criteria to search for vehicles, as well as detailed records for administrator and employee users to view.

5. Motivation

Our solution is important as customers are expecting more and more customization of companies to fit their specific needs. At present, major car rental companies merely offer vehicles to rent based solely on the relative size of the vehicle. We feel it is crucial to give customers more choice in the vehicle they will be renting, as well as provide employees with an easy-to-use

searchable database to see up to date records on their inventory such as where vehicles are located or their upcoming maintenance. We feel that this is the future of car rentals.

6. Conclusion

In conclusion, we propose to create a user-friendly website that not only allows the employees of the car rental company to keep more diligent records on their inventory but also allows customers much more customizable search criteria based on their needs.

An estimated timeline of our project deliverables is as follows:

Project Proposal and Team Contract:

September 30th, 2022

Detailed ERD with all of our assumptions:

October 11th, 2022

Initial Logical Relational Model

October 21st, 2022

Initial Design Draft of the functional part of our project. This will include all possible SQL statements, as well as, either UML and Sequence diagrams or HIPO and DFD diagrams.

November 10th, 2022

Complete implementation of our project ready to be demonstrated

December 5th, 2022

Final Report

December 7th, 2022

7. References

Enterprise Rent-A-Car https://www.enterprise.ca/en/home.html

Avis Car Rental https://www.avis.ca/en/cars/vehicles/ca

Hertz https://www.hertz.com/rentacar/reservation/

Budget Rent a Car https://www.budget.com/en/home

Alamo Rent a Car https://www.alamo.ca/en/home.html

National Car Rental https://www.nationalcar.ca/en/home.html

Wikipedia contributors. (2022, September 21). Car rental. In Wikipedia, The Free Encyclopedia. Retrieved 04:49, September 30, 2022, from https://en.wikipedia.org/w/index.php?title=Car_rental&oldid=1111551279