**WEB-BASED CAR INVENTORY MANAGEMENT**

**DESIGN DOCUMENT**

**MIS407**

**Section A**

**Group 3**

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**Project scope**

This project will allow a company to keep an inventory of the current stock of vehicles owned by a dealership. By recording information on a vehicle's features like the year, model, mileage, and color, the company will use the program to find customers the best fit for their desired car.

The program will allow a user to enter certain parameters for what they are interested in and the program will show the customer what is available for purchase. For example, if a customer was looking for only black cars, that parameter will narrow down the data and show the user what feasible options there are in a vehicle of that type.

This system will also serve as a means for the company to maintain a record of their inventory of vehicles, as well as a tool to attract customers interested in customized options.

In order to achieve these goals, we will first import the csv file to begin the creation of the program. Focusing on the ability to allow the customer to narrow down their desired vehicle will be the first task. Once all consumer customization options are available, we will begin working on a method to keep track of the inventory of vehicles. After most of the practical functionality is complete, we will work to make the user interface as simple as possible for the consumer. After each step, thorough checks will be made to make sure the code hasn’t left anything out that could cause issues. Once those main steps are complete, the program should allow consumers to find their desired vehicle based on their wants, as well as provide the company a method of keeping track of their inventory.

The ultimate goal of this program is to provide practical commercial value to a car dealership. Having a system that lets potential customers choose the features they want available to them will set the company apart from its competitors. It will also reduce the potential for human error when it comes to tracking inventory.

**Project value**

Events from the past have shown the failure of companies due to the lack of control in their inventory. Not having good inventory control causes increases in cost, implausible to track inventory, time consuming, conflicting vendor customer relations, ineffective decision making, lack of inventory balance, increased lead times and stock-outs, delays in shipping and delivery, ineffective control over production. That would lead to a chaotic situation for any company that is looking to strive. It is essential to have control over the inventory, however, having control over the inventory requires a large sum of resources to keep track of things.

Accounting the resources used to maintain track of inventory, there always exists a gap of margin of error due to human error, which takes into account the lack of optimality to make profits.

Taking all these factors into consideration it would be a great idea if there could be a more efficient way to keep track of inventory. We Group-3 have decided to come up with an inventory tracking system application that would take away all the hassle of keeping track of the inventory in a more simple and efficient way. We are passionate about helping those who look for success in their company.

We plan to create a simple yet stylish website that can meet all the requirements that the user requires. It will be user-friendly and straightforward. The essential functions of the application will be having the ability of a product in the inventory, keeping track of the in and outs of the product, and efficient management. Simple interface consisting mainly of buttons and text boxes for inputting the information about the inventory. We will also provide 24/7 customer support.

In conclusion, the development of the application would bring value to the company by keeping control of the inventory with a simple yet effective execution. The website would be available to any user and adapt to the customer needs making being customizable for their need but with the key essential functions of the application. We anticipate that the application would be applicable almost in every field of the economy

**Application Functionality**

**User Specifications:**

The main purpose of this application is to enable the admin to enter in specific parameters in their search for a car, while also enabling the dealership to keep track of their inventory.

**Functions:**

* **Returning current stock of all vehicles a dealership currently has.**

This will allow the user to see all vehicles available at a dealership, without any filters

* **Returning the vehicles based on specific parameters, which can include color, model, mileage, year, and price.**

If a user is looking for something more specific, they will have a function that allows them to enter in specific parameters that enables them to view only vehicles they are searching for. This makes it easy for the customer to view what there options are.

* **Returning the specifications of a specific car in inventory based on the vehicle's identification number.**

This is the most specific parameter a user can input, which enables them to bring up anyone vehicle if they have its identification number. This can be useful if the user wants to see if a specific vehicle is still available.

* **Adding and Removing vehicles to the inventory system.**

Adding and removing data is crucial for inventory control. It enables the dealership to keep track of their current stock, and also allows customers to view the most up to date inventory that a dealership has.

**Data Sources**

These are the candidates for our car data:

* US Car Data Set: <https://www.kaggle.com/datasets/doaaalsenani/usa-cers-dataset>
* Customer Data: <https://www.kaggle.com/datasets/dev0914sharma/car-purchasing-model>

Data set we are looking for:

* Sales Rep Data
* Dealer Data

**Languages and Tools**

The programming languages that will be used in completing this application are as follow:

* Python
* HTML
* CSS
* SQL

The following tools will be used in achieving a completion of our project:

* Luci chart
* Google Docs, Slides
* PyCharm

The Python libraries:

* Flask
* Django

**ER Diagram**

**Diagram

Description automatically generated**

**Activity Diagram**

Diagram

Description automatically generated

**Webpage Wireframe**

**Graphical user interface, application

Description automatically generated**

**Gantt Chart**

Chart, bar chart

Description automatically generated

**Member’s Role and Contribution Description**

|  |  |  |
| --- | --- | --- |
| Team Name | Contribution Description | Team Role |
| Yen Vo | ER Diagram, Wireframe, Data Sources, Language and Tools | Implementation |
| German D. Hernandez | Application Functionality | Implementation/Back-End |