Auto Master Online

Software Engineering Project Document

Submitted by:

Group 4

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I. Project Description

1. Project Overview

Auto Master Online is an e-commerce website that helps the customer purchase car parts online through any Auto Master store. The website also offers assistance when it comes to stock management, helping the seller see the remaining stock and easily re-stock them as well as track the current financial incomes, expenses and best selling items of the month.

2. Background

Auto Master Car Accessories utilizes traditional strategies when it comes to keeping track of inventory and sales. However this can be inefficient and time consuming at times due to the use of pen and paper for tracking and managing. In addition, it is also susceptible to issues related to security and inventory (i.e. the lack of storage for storing records).

With the growing market demand for car accessories, Auto Master needs to be able to cater to the growing demand of the market as well as update their inventory system to boost efficiency. Through the development of Auto Master Online, which serves as an e-commerce as well as a pseudo inventory management system, the client is able to easily track the number of stocks remaining and re-stock them. Besides that, the client can also track their financial incomes and expenses based on the analytical reports provided in the website.

3. Purpose and Description of the Project

The project aims to give customers an accessible website to view and browse the products of automaster in a convenient way. With our project, customers will be able to view stocks, order, and reserve the items they want which reduces the need to go to the store to see which items are in stock. In addition to this, customers will be able to see on photo what the items look like without going to the store to see in person.

The project also helps branch managers with managing item stock, adding items, and managing sales statistics which could increase the efficiency of the company. Managing stock and adding items will be done by storing it into a database. The website will be able to track sales and create graphs that could give implications to the managers on what items to restock or avoid and also give an idea on what items are doing good on sales.

Our project is very well versed in dealing with sales statistics. With this data, recommendations could be given to managers on what items to restock and avoid. The website is well designed, we are focused on giving our users the best experience. With our great web design, users are able to access and browse through the website with ease.

The project is unique because most websites that involve selling are focused on a lot of stuff which makes it difficult for customers to search for what they truly like, our project is specified in one place which is about automobile accessories.

4. Objectives

In order to solve the problems with the traditional system implemented by the business, and to open new opportunities to expand and develop, the group aims to achieve the following:

- Develop a system to aid with tracking the remaining stock and orders, as well as make it easier to restock on supplies.
- Create an e-commerce platform to access the online market.
- Provide analytics to aid with business decisions.

5. Scope and Limitations

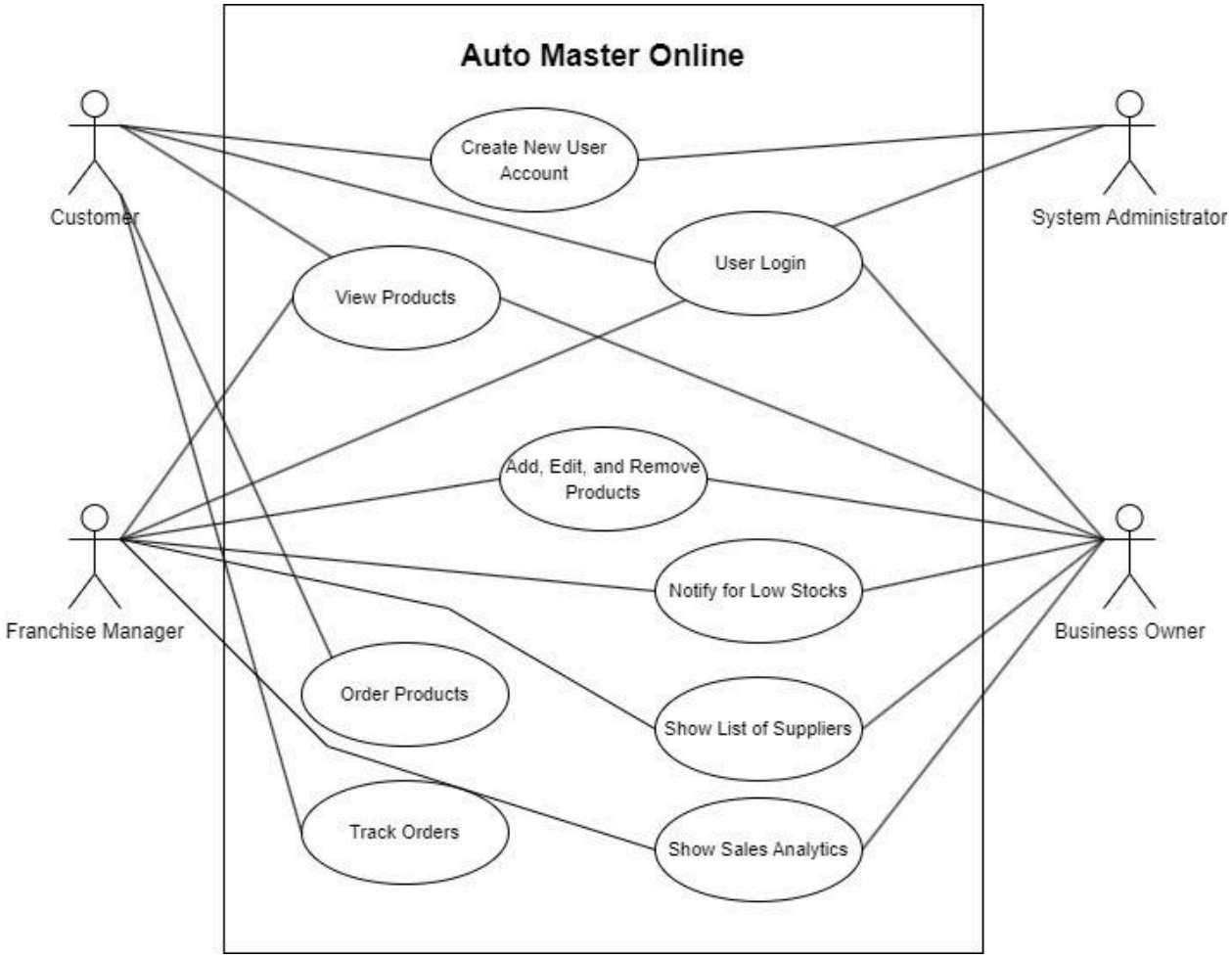
In this project, the group will only create a prototype of the program that was proposed to the client. Most of the functionalities would not be included, but the design and flow of the application for both the customer and manager would be well-defined. The group will only utilize HTML, CSS, Javascript, and MongoDB, and will not be experimenting with other languages and systems.

6. Significance

The project will significantly benefit the owner of Auto Master and their customers. Through the project, an e-commerce platform will be created for customers to view the products sold by the business. Through this, they will be able to conveniently view and buy products from Auto Master. This gives the business an edge over their competitors that do not provide online services and means of transaction. As for the owner, and franchise managers if the business decides to expand, managing their stocks will be easier and more efficient. In addition, they could also make better business decisions through the sales analytics implemented by the website.

II. System Requirements Specification and Analysis

1. Use Case Diagrams



2. Use Case Narratives

Creating an Account as a Customer:

Actor Actions	System Responses
1. User chooses to a create a new account 3. The user inputs their information such as their login name, email, password, first name, last name, and mobile number. 5. The user will input their password again to confirm its usage. 7. User confirms the account creation.	2. Shows the account creation page including the information that must be provided. 4. Check if the login name is already taken by another user. 6. Check if the passwords are the same. 8. The user's information will be stored in the database.
Alternative Scenarios	
	4. Check if the login name is already taken by another user. 5. Send an error message stating that the login name is already in use.

	6. Check if the passwords are the same 7. Send an error message stating that the passwords do not match

Creating a Franchise Manager / Business Owner Account:

Actor Actions	System Responses
1. The system administrator logs into their account. 3. The system administrator fills up all the fields. 4. System administrator clicks the add account button. 7. The system administrator adds the account. 9. Confirm account creation process.	2. Shows advanced create new user page. 5. Check if all fields were answered. 6. Checks if the mobile number and email were the correct format. 8. Shows account creation confirmation. 10. The information will be stored in the database.
Alternative Scenarios	
	5. Check if all fields were answered. 5. Send an error message stating that not all fields were answered.
	6. Check if the mobile number and email were the correct format. 7. Send an error message that the email or mobile number are of the wrong format.

Login as a user:

Actor Actions	System Responses
1. The user inputs their login name or email. 2. The user inputs their password. 3. The user clicks the login button.	4. The system scans the database for the login name or email. 5. Check if the password matches the login name or email. 6. Shows the appropriate welcome page based on account classification tied to the email.
Alternative Scenarios	
	4. The system scans the database for the login name or email. 5. Sends an error message that the email or login name does not exist.
	5. Check if the password matches the login name or email. 7. Send an error message that the password is incorrect.

View Products as a Customer:

Actor Actions	System Responses
1. The user logs into their account. 2. The user browses through the different products offered. 3. The user clicks on a product they are interested in. 5. The user clicks on the “add to cart” button. 7. The user proceeds to checkout.	2. The system shows the home page alongside the list of products offered by the business. 4. The system shows a new page containing the details of the product chosen. 6. Shows an option to proceed to checkout or to continue browsing products. 8. The order page appears.
Alternative Scenarios	
5. The user clicks returns to the home page to browse other products.	4. The system shows a new page containing the details of the product chosen. 6. Shows home page.
7. The user chooses to continue browsing products.	6. Shows an option to proceed to checkout or to continue browsing. 8. Shows home page.

View Products as a Franchise Manager:

Actor Actions	System Responses
1. The franchise manager logs into their account. 2. They click the “Products” button in the navigation tab. 4. User browses through the page. 5. User observes if the products offered on the website are aligned with the products in the physical store. 6. The user clicks on the edit product button.	3. Show the list of products offered on the website alongside their price and remaining stock. 7. The edit product option appears.
Alternative Scenarios	
6. The user clicks on the add product button.	7. The add product option appears.
6. The user clicks on the remove product button.	7. The remove product option appears.
5. User observes if the products offered on the website are aligned with the products in the physical store. 6. User does not find any problems.	

View Products as a Business Owner:

Actor Actions	System Responses
1. The business owner logs into their account 2. They click the "Products" button in the navigation tab.	
Alternative Scenarios	

Add, Edit, and Remove Products as Franchise Manager:

Actor Actions	System Responses
1. The franchise manager logs into their account 3. The franchise manager adds products to the list of items	2. The system shows the home page alongside the list of products offered by the business 4. Shows a message that displays “Products have been added”. 5. The list of products is updated with the newly added products
Alternative Scenarios	
3. The franchise manager edits products in the list of items	4. Shows a message that displays “Products have been edited”. 5. The list of products is updated with the newly edited products
3. The franchise manager removes products from the list of items	4. Shows a message that displays “Products have been removed”. 5. The list of products is updated with the removed products by the business owner

Add, Edit, and Remove Products as Business Owner:

Actor Actions	System Responses
1. The business owner logs into their account 3. The business owner adds products to the list of items	2. The system shows the home page alongside the list of products offered by the business 4. The list of products is updated with the newly added products
Alternative Scenarios	

3. The business owner edits products in the list of items	4. The list of products is updated with the newly edited products
3. The business owner removes products from the list of items	4. The list of products is updated with the removed products by the business owner

Order Products:

Actor Actions	System Responses
1. Users add or remove products to their order. 3. Users check the cart. 5. Users finalize the order and clicks the “Order Products” button 7. Users make payments upon pick-up of the order at the respective franchise store.	2. Adds/removes products to cart. 4. Shows cart contents to the user. 6. Shows the total cost of the order
Alternative Scenarios	
6. Users make an online payment after clicking the “Order Products” button	Paid status will be shown on the order status

Track Orders:

Actor Actions	System Responses
1. User clicks “Track Order” button for an active order	2. Shows the tracking order page that displays the current status of the order (processing order or ready for pick-up) along with the product name and price
Alternative Scenarios	
3. User clicks “Track Order” button for a past order	4. Shows the tracking order page that displays a “received” status along with the product name and price

Notify for Low Stocks:

Actor Actions	System Responses
2. User chooses to restock	1. System notifies the user when the stock of a particular item is low. Users are given the option to restock or not. 3. User is redirected to supplier’s contact number that supplies the particular item

Alternative Scenarios	
4. User chooses not to restock	5. System exits the current screen

Show List of Suppliers:

Actor Actions	System Responses
1. User selects supplier tab 3. Suppliers are highlighted in either yellow, orange, or red (yellow indicates supply is plenty, orange indicates low supply, and red indicates no supply.) 4. User selects a certain supplier in the list	2. Shows the list of suppliers associated with the company 5. Shows the supplier's contact number to be contacted for restocking of items
Alternative Scenarios	

Show Sales Analytics:

Actor Actions	System Responses
1. User selects sales analytics tab in the system 3. User selects "weekly" filter under the time period filter of the sales analytics and sets date parameters (e.g. 1st week of December 2023)	2. Shows the sales analytics of the company, including those of every branch or franchise. 4. Shows the sales of the business for a particular weekly period (e.g. 1st week of December 2023)
Alternative Scenarios	
5. User selects "monthly" filter under the time period filter of the sales analytics and sets date parameters (e.g. January 2024)	6. Shows the sales of the business for a particular monthly period (e.g. January 2024)
7. User selects "yearly" filter under the time period filter of the sales analytics and sets date parameters (e.g. 2023)	7. Shows the sales of the business for a particular yearly period (e.g. 2023)

3. Functional Requirements

Name	Description	Version

Functional Requirements		
Creating New User Accounts	This function allows the user to create a new account. Accounts are classified either as customer, franchise manager, or business owner. To create a new account, the user must supply the following information: ● Login Name ● Email ● Password (2x) ● First Name ● Last Name ● Mobile Number Public users can only create customer accounts. Franchise manager accounts and business owner accounts can only be created by the system administrator.	Version 0.1
User Login	This function allows the users to login to the account they created using their login name or email, and their password. The user can login as a customer, a franchise manager, or a business owner.	Version 0.1
Viewing Products	This function allows the users to view the products offered by the business. The product's name, price, and availability will be shown on the main page alongside an image of the product. The user can click the product they are interested in to open a new page and view it in more detail. The new page would include the following: ● Image of the Product ● Product Name ● Product Description ● Price ● Buy Button ● Product Reviews from other users	Version 0.1
Adding, Editing, and Removing Products	The Franchise Manager and Business Owner accounts have the option to add, edit, and	Version 0.2

	remove products offered in the website. The necessary information related to the product must be supplied when adding new products. This includes the product name, description, price, and a sample image. The aforementioned information can also be edited later on. In case products are no longer being sold by the company, they may opt to remove the product from the product list.	
Ordering Products	This function allows customers to purchase products through the website. The customer can add and remove products from their order before finalizing their purchase. The total cost of their purchase would be displayed and would be paid upon pickup.	Version 0.2
Tracking Orders	This function allows customers to view and track their active and past orders through a navigation bar. For active purchases, the status of their orders are indicated by “processing order” or “ready for pick-up”, while past orders are indicated by “received”. The status of their order is also accompanied by the product name and price.	Version 0.2
Notification for Low Stocks	This function notifies the franchise manager and business owner if the stocks of a particular item is low which gives the franchise manager or business owner the option to restock. The notification would include the product name and the remaining supply.	Version 0.3
Supplier Tab	This function lists the suppliers associated with the company. Suppliers that are recommended to be contacted due to lack of supply are highlighted in yellow, orange, or red based on the remaining supply. Yellow indicates a plenty of supply, orange indicates a very low amount of supply, and red indicates no more supply.	Version 0.3

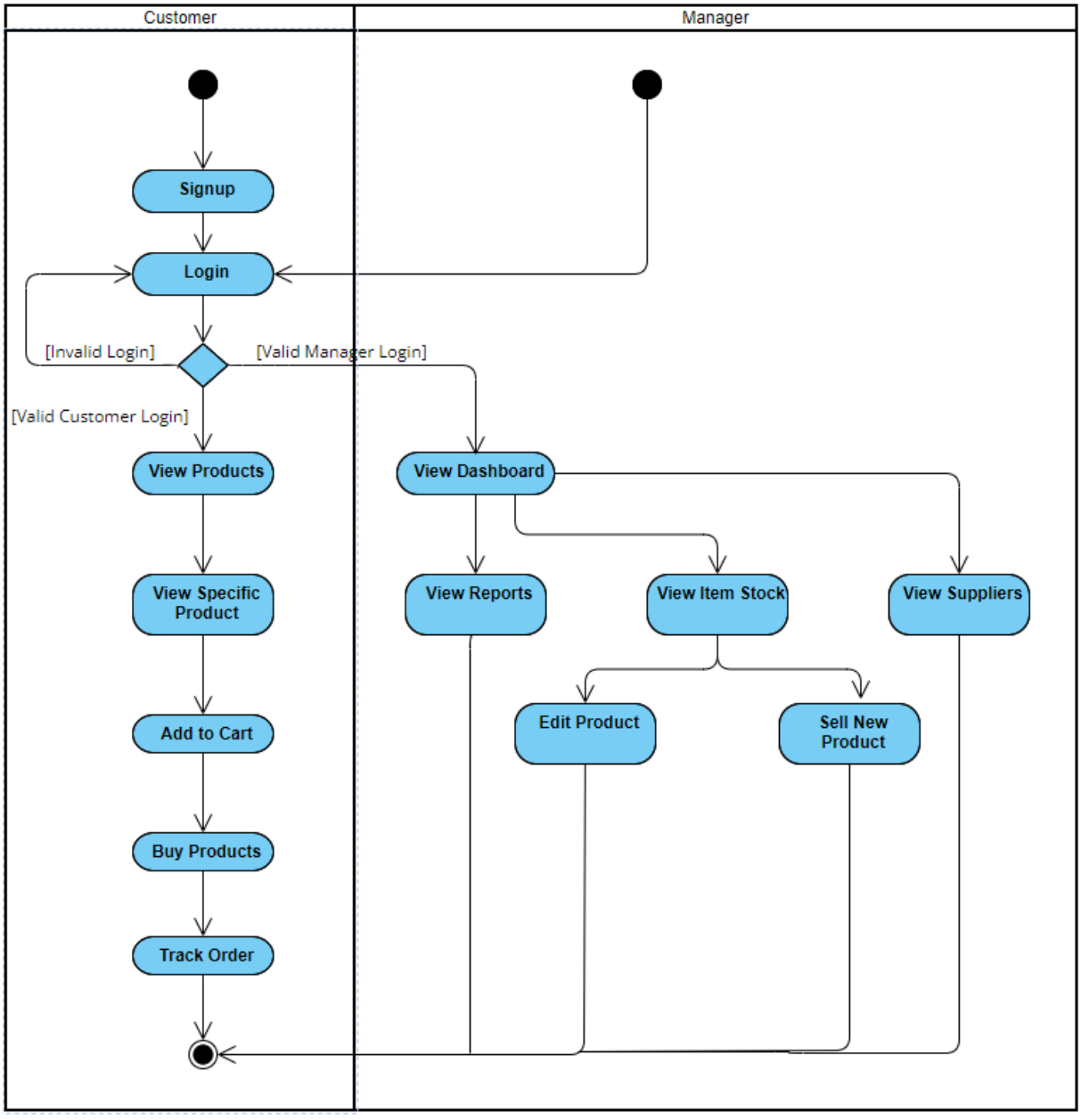
Sales Analytics	This function allows the franchise manager and business owner to view analytics of the store's sales at selected time periods such as weekly, monthly, or yearly. It also allows the system administrator to see the percentage of sales for each store branch.	Version 0.4

4. Non-Functional Requirements (choose whichever is appropriate)

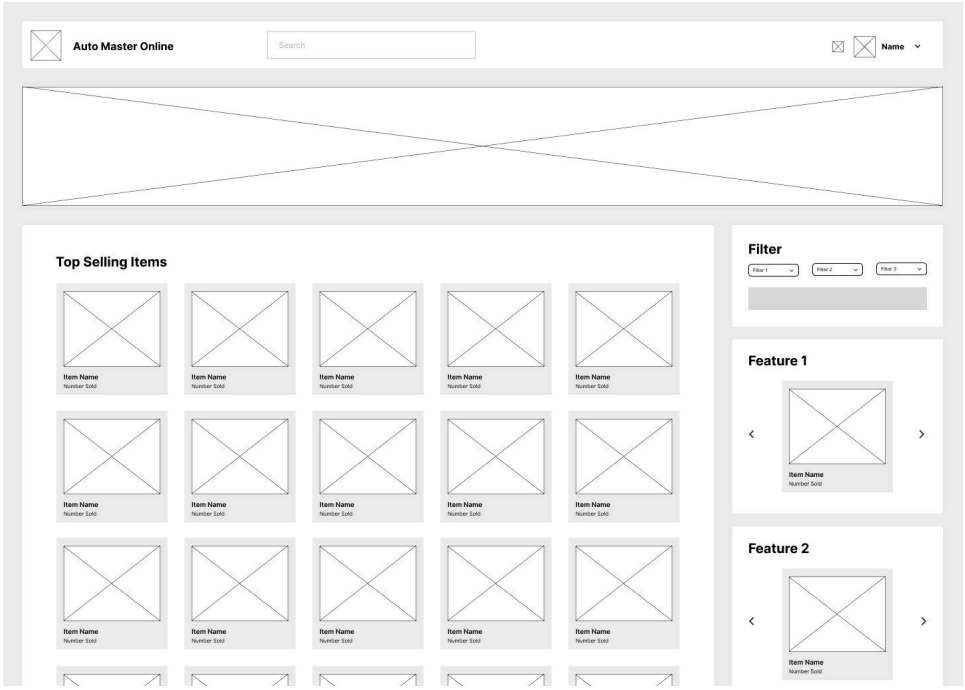
Name	**Description**	**Version**
Non-Functional Requirements		
Usability	The website would inculcate effective website design concepts to offer ease of navigation and user-friendliness. A section for frequently asked questions would also be included in the website.	Version 0.1
Security	Security will ensure that all data collected within the website will be safeguarded from any malicious attack that aims to steal user generated information.	Version 0.1
Speed and Latency	Performance aims to ensure that the quality of life of the website caters to the needs of the customers, ensuring that they will have a smooth, quick, and hassle free user experience.	Version 0.1

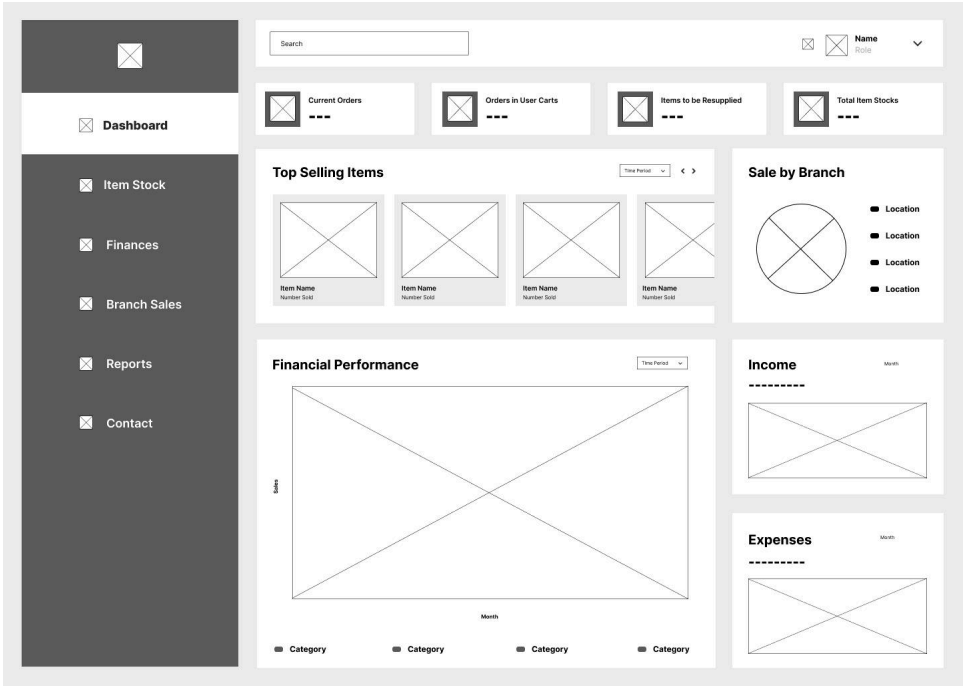
III. System Design

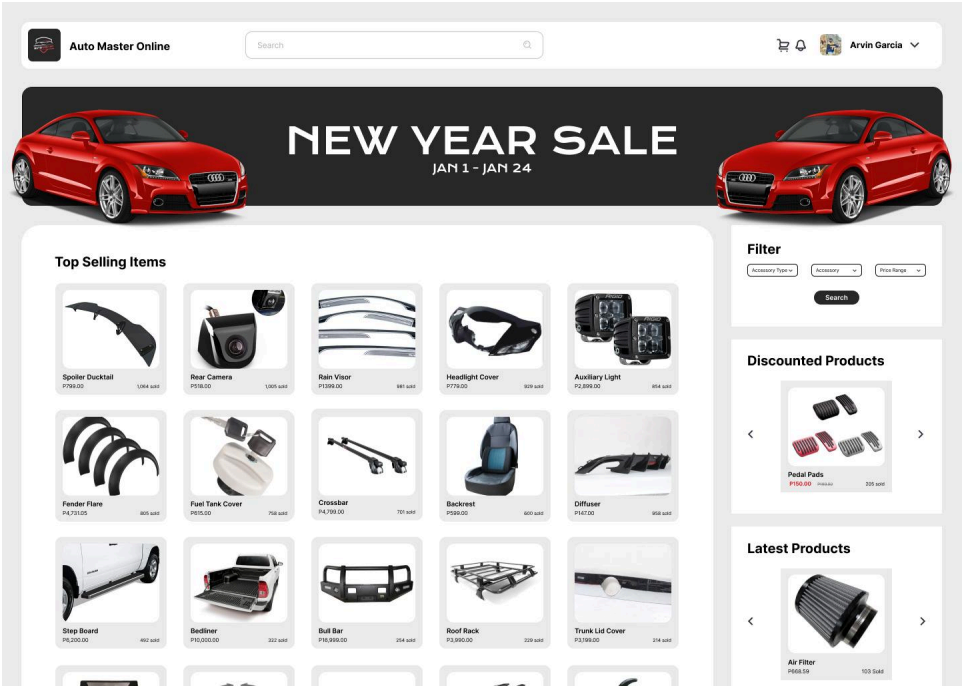
1. Proposed Software System/ Architecture

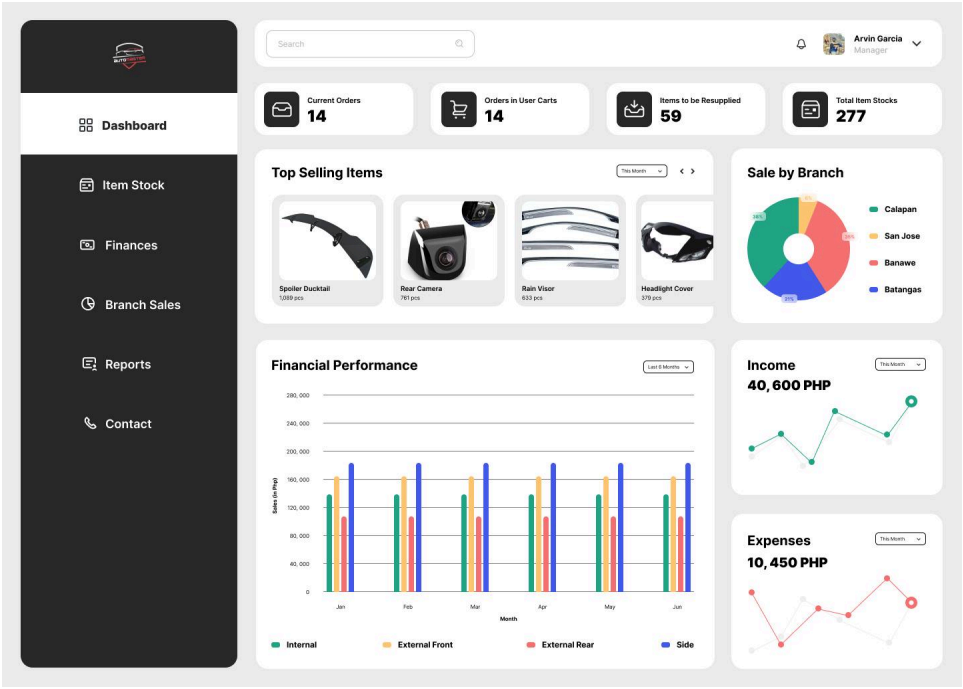


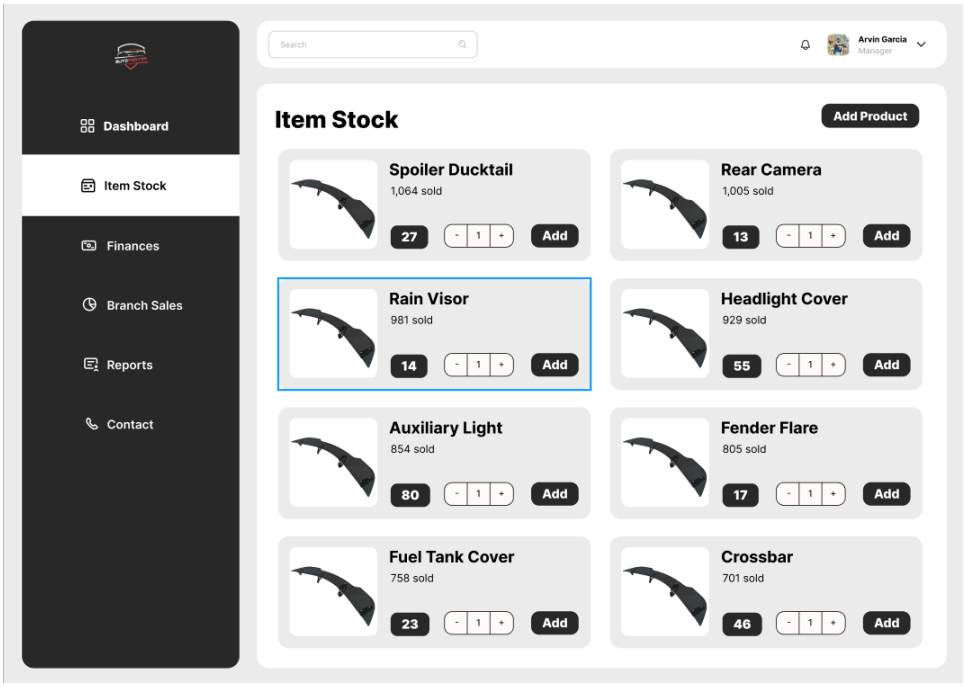
2. User Interface Design






Auto Master Online
Search
Arvin Garcia
NEW YEAR SALE
JAN 1 - JAN 24
Top Selling Items
Spoiler Ducktail
Rear Camera
Rain Visor
Headlight Cover
Auxiliary Light
Fender Flare
Fuel Tank Cover
Crossbar
Backrest
Diffuser
Step Board
Bedliner
Bull Bar
Roof Rack
Trunk Lid Cover
Filter
Search
Discounted Products
Pedal Pads
Latest Products
Air Filter


Search
Arvin Garcia
Manager
Dashboard
Item Stock
Finances
Branch Sales
Reports
Contact
Current Orders
14
Orders in User Carts
14
Items to be Resupplied
59
Total Item Stocks
277
Top Selling Items
Spoiler Ducktail
Rear Camera
Rain Visor
Headlight Cover
Sale by Branch
Calapan
San Jose
Banawe
Batangas
Financial Performance
Internal
External Front
External Rear
Side
Income
40, 600 PHP
Expenses
10, 450 PHP


Search
Arvin Garcia
Manager
Dashboard
Item Stock
Finances
Branch Sales
Reports
Contact
Item Stock
Add Product
Spoiler Ducktail
1,064 sold
27
Add
Rear Camera
1,005 sold
13
Add
Rain Visor
981 sold
14
Add
Headlight Cover
929 sold
55
Add
Auxiliary Light
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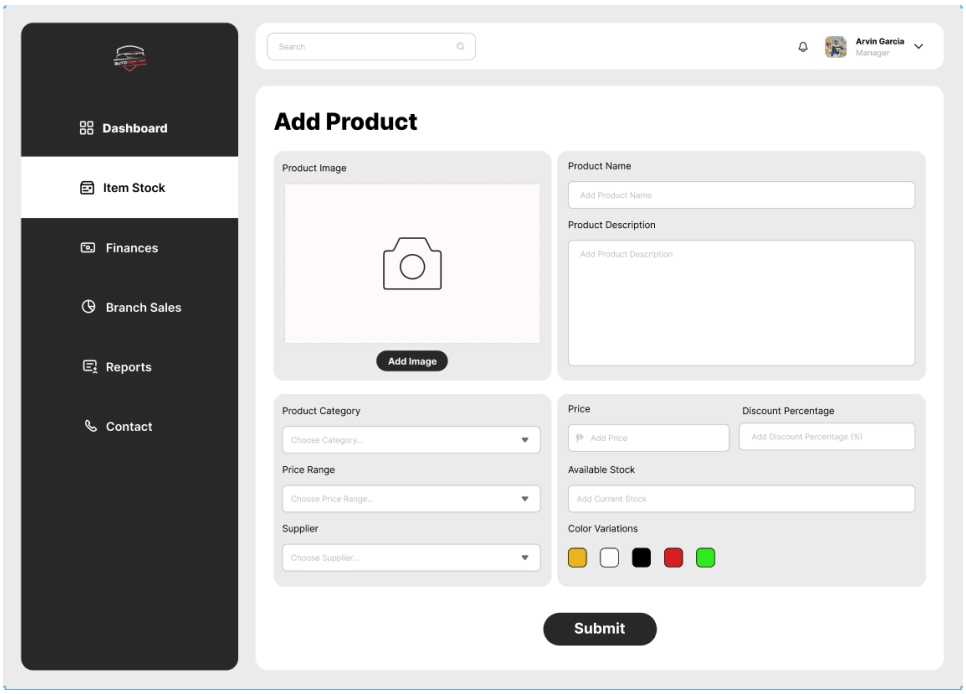
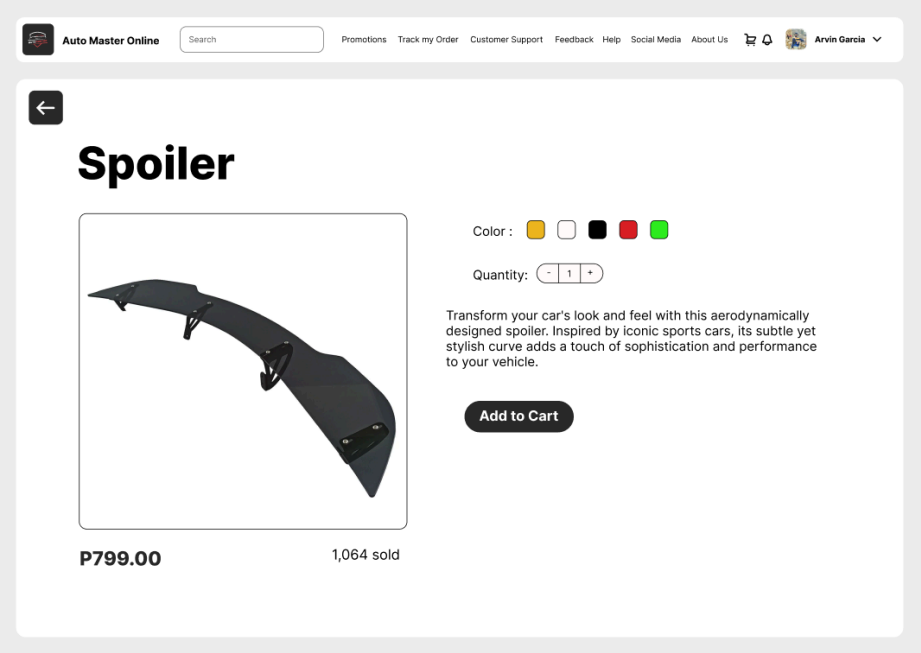
Fender Flare
805 sold
17
Add
Fuel Tank Cover
758 sold
23
Add
Crossbar
701 sold
46
Add


Search
Arvin Garcia
Manager
Dashboard
Item Stock
Finances
Branch Sales
Reports
Contact
Add Product
Product Image
Add Image
Product Name
Add Product Name
Product Description
Add Product Description
Product Category
Choose Category...
Price Range
Choose Price Range...
Supplier
Choose Supplier...
Price
Add Price
Discount Percentage
Add Discount Percentage (%)
Available Stock
Add Current Stock
Color Variations
Submit



IV. System Implementation

1. Software Tools

- HTML and CSS - we used these tools because as a pair, they have a wide variety of functions that can design our webpage with different styles and little functions. They are also much easier to understand than the other choices
- JavaScript - we used these to make some HTML functions work like our quantity box which increments and decrements the number.
- VScode - this is used to compile the needed codes for HTML, CSS, and JS. We also used a live server extension to see the webpage created live.

2. Hardware

- Laptop- we used this tool due to its portability being able to do our project on the go.

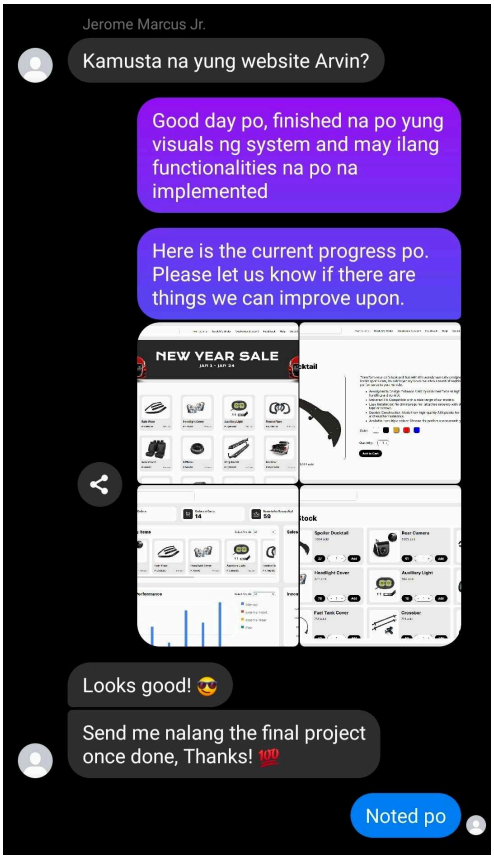
3. Application Modules

- Sign Up Module - This module is used to sign up for a new customer account.
- Login Module - This module is used to login to either a customer account or a manager account.
- View Products Module - This module is used to display products in the home page of the system’s customer side.

- Add to Cart Module - This module is used to add products to the cart based on the selections of the user.
- Buy Products Module -This module allows the user to buy products being displayed at the website.
- Track Order Module- This module allows the user to see the current location of the product they ordered.
- Sell New Products Module- This module allows the manager to add new products to be displayed at the website.
- Analytics Module- This module allows the user to see the revenue as well as the expenses of the company each month.
- Item Stock Module- THis module lets the user see the amount of items currently in stock.

APPENDIX:

A. Proof of Client Interaction



Client's Signature