Report 1 – Full Report: Vehicle Sales

CSCI441: Software Engineering

Group: Team E

September 7, 2025

Repository URL: https://github.com/wyatt4543/vehicle_sales

Team E Group Members

Moussa Mballo

Wyatt McDonnell

Mamadou Oumar Ndiaye

William Steele

Colin Showalter

Individual Contributions Breakdown

Report 1 – Part 1

Wyatt worked on the problem statement, decomposition into sub-problems, and a glossary of terms.

Moussa worked on the Goals, Requirements, and Analysis - (System Requirements and Analysis).

Report 1 – Part 2

Mamadou worked on Stakeholders & Actors and Goals.

William worked on Use Cases & System Sequence Diagrams

Colin Showalter worked on Preliminary Design & User Effort Information with some assistance from Wyatt

Report 1 – Part 3

Wyatt worked on the entirety of 5. System Architecture and System Design

We are planning on having the people assigned to each report alternate between team members, but all team members have contributed equally.

Table of Contents

Work Assignment

William and Colin have been assigned to front-end development. Moussa and Mamadou have been assigned to back-end development. Wyatt has been assigned to front-end development and back-end functionality.

Individual Student Competencies

Moussa Mballo: Senior CS student at FHSU, advanced programmer in python, java, and databases. My main interest is in cloud computing, and virtual environments.

Wyatt McDonnell (Team Leader): Skills in programming include Python, C++, C#, JavaScript, Java, HTML/CSS, and Lua. Proficient at learning new programming languages within a week. Technical writing skills include documentation, communicating technical concepts through diagrams, and summarizing ideas in text form. My main interest is in game development.

Mamadou Oumar Ndiaye: Senior undergraduate in Computer Science, skills in programming with diverse languages like Java, Python, HTML/CSS and JavaScript. My main interest is in data security and privacy

William Steele: Current CS student at FHSU. I have used several programming languages such as C++, Java, HTML and CSS but haven't had much experience with them outside of classwork. My main interest is game development.

Colin Showalter: Junior FHSU CS major. Experience in C++, Python, Java, JS, and HTML. I am mainly interested in Software Engineering and Game Development

1. Customer Problem Statement

1a. Problem Statement

In many cities throughout the United States, you need a vehicle to be able to travel safely to various locations. Those who cannot successfully walk to their destination are usually forced to purchase a vehicle. Even people outside of cities may require vehicles. Those who live in small towns may want a vehicle for traveling to various destinations for groceries. The most prominent option for any customer is either a private dealer or a car dealership. Generally, these two options are a hassle for people.

At a car dealership or when buying from a private dealer there may be pressure on the buyer caused by their presence. The private dealer may not always give an up-front price. Along with this, the condition of the vehicle may not always be fully provided. There are customers who may need to travel a great distance to a car dealership if they live in a small town. Even if a potential customer does not live in a small town, they may not want to travel to purchase a vehicle.

These inconveniences show that a web application for vehicle sales would provide a more convenient service for purchasing a vehicle. The website would display as a catalogue full of vehicles that shows its image, name, price, and stock. Along with this, the customer can get their vehicle delivered or for pick-up. Accounts will allow any information provided at checkout to be changed.

To better understand the struggles of those who are purchasing vehicles, some potential customer stories are provided below:

Molly

Molly is the manager of a local restaurant. She lives in a small town of 500 people. This restaurant is visited by many of the locals for almost every meal. Every so often she needs to buy ingredients to allow how restaurant to keep running. She takes a van which can contain those ingredients to a nearby city every week. After years of use, her car had finally broken down beyond repair. Molly is now a customer in the market for a new vehicle.

Molly's van being unusable is an issue. Normally, she would be able to drive great distances. The reason it is an issue is because the nearest car dealership is 30 miles away. Along with this, every used vehicle in her town is being sold at a higher price than if the car was new. The used vehicles are outside of Molly's budget, so she would like an alternative option.

Molly would really like a way to have a vehicle delivered to her. Her current situation raises the issue of needing a new way to have ingredients delivered to her. This would likely be costly for Molly's business, and the added management issues would take up more of her time. The increased amount of time spent on her business would not give her much time to purchase a new vehicle. In the past, Molly has used computers while running her business, but she has had difficulties with navigating unintuitive applications. These applications were made to help calculate the cost of meals, but the labels for each button used were often confusing. Eventually, she decided that she would do the work manually due to how unintuitive the applications were.

Also, Molly has often made mistakes while entering information. These mistakes are often not able to be corrected, and this causes Molly to feel frustrated.

John

John is a businessman who needs to budget his money wisely. Even though he would be able to spend money outside of his budget, he would likely have to tighten certain aspects of it. John keeps a record of every purchase he makes, and he does this to make budgeting easier for himself. John lives in the middle of a city, and he finds it very convenient to drive anywhere he needs to go. John usually travels a few miles for groceries every week, and on the weekends, he loves to go to the bar or an arcade. John has not purchased a new vehicle in years, so he believes that his car should be replaced soon.

John does not trust private sellers, so he decides to go to a car dealership. John has a general budget in mind for which type of vehicle he wants to buy. As soon as he gets to the car dealership, he is greeted by someone. He tells them what his general budget is, and that he is looking for a minivan. Even though he explicitly stated he was on a budget, they still showed him around to all of the expensive vehicles in the store. The seller at that dealership was pressuring John to make a purchase every time they went up to a new vehicle. This pressure caused John to purchase a vehicle outside of his budget. He loved how functional his new vehicle was, but he was unable to have as much fun on the weekends due to spending money outside of his budget. John would have rather stayed within his budget.

John likes picking up cars because he does not trust other people with anything he purchases. He would have rather been within his budget and not have the presence of another person to influence him to spend money outside of his budget. In the past, he has bought expensive things due to the influence of other people. It would be convenient for him to have a way to purchase a vehicle with minimal human interaction. John has had no issue with navigating computers in the past, but he has found certain websites to have an inconvenient interface occasionally. He works with computers while at his job, and he mainly uses excel due to his job requiring him to work with numbers. John would like purchase details to be communicated with him in as many ways as possible. Having purchase details communicated to him allows him to budget more accurately. This accuracy comes from having back-ups for if he does something like losing a physical copy of purchase records.

Mark

Mark is a college student with a part-time job as a custodian. He receives an allowance from his parents, and his parents are paying for his education. As a college student, he mainly focuses on his schoolwork to not disappoint his parents. His part-time job leaves him with only his weekends to spend his free time. He lives on-campus, so there are businesses like grocery stores and fast-food places throughout his city. While many of these businesses are within walking distance, it is much safer for him to use a vehicle to go to any of these locations. For this reason, he would like to purchase a vehicle.

He decides to look for a used car on Craigslist. The reason for this is because he wants to purchase something within his budget. He finds someone that is selling a used car listed with various parts repaired including the transmission. After messaging the seller, they both come to an agreement on where to meet. Mark takes the time to walk all the way to the seller's house about 5 miles from campus. While there the seller tries to make him pay more than the initial price listed on the seller’s page. Mark attempts to dismiss the seller’s price hiking, but he fails to

do so and pays for the car at a higher price than was listed. He drives the vehicle back to his campus's parking lot, and he parks the vehicle normally. The next day, he attempts to start his car and fails to do so. He checks under his car's hood and realizes that the transmission had been incorrectly replaced. Mark is forced to replace his transmission and spends more money than if he had purchased a new car.

Mark likes having things delivered, but this situation has made him trust people less. For this reason, he would rather pick up any future vehicles. This was not the first time Mark had been scammed. He was once scammed out of his money while trying to buy an online currency for his favorite video game, but that had not left a lasting impact on his opinion of other people. It would be convenient for him to have a price that does not change as well as a guarantee of the quality of a vehicle. He would like to pick up future vehicles to look at their quality in person. Mark has had access to computers since he was a small child, and he has had access to a phone since he was a teenager. Whether he was on a website or using an application, a horrible user interface always caused him to delete that application or close out of a website. Mark would like to have his data secure as he does not want to have any future problems with any person.

1b. Decomposition into Sub-problems

Individual Customers Like Molly:

1. Customers want to have a car delivered due to the distance to a car dealership being inconvenient to travel to.
2. Customers want a convenient user interface to navigate, so they will not waste their time while purchasing a vehicle.
3. Customers want an up-front price, so they can budget for a vehicle appropriately.
4. Customers would like an account system to be able to correct any mistakes they might have made when entering any information.

Individual Customers Like John:

1. Customers want to have a way to pick-up a vehicle due to the possibility of the vehicle being damaged
2. Customers want a convenient user interface to navigate, so they will not waste their time while purchasing a vehicle.
3. Customers want a way to have minimal interaction with another person
4. Customers would like multiple sources for purchase details for budgeting purposes

Individual Customers Like Mark:

1. Customers want to have a way to pick-up a vehicle due to the possibility of the vehicle not being of the quality stated
2. Customers want a convenient user interface to navigate, so they will not waste their time while purchasing a vehicle.
3. Customers want an up-front price, so they can budget for a vehicle appropriately.
4. Customers want a way to have minimal interaction with another person
5. Customers want a secure system, so none of their information is provided to someone they do not trust

1c. Glossary of Terms

Catalog: The digital listing of all available vehicles.

Stock: Number of units available for each vehicle model.

Pick-up Code: A unique identifier provided to customers who choose in-store collection, used for verification.

Delivery Option: The method where the purchased vehicle is delivered to the customer's provided address.

Verification: The process of confirming customer identity and validating payment before finalizing a purchase.

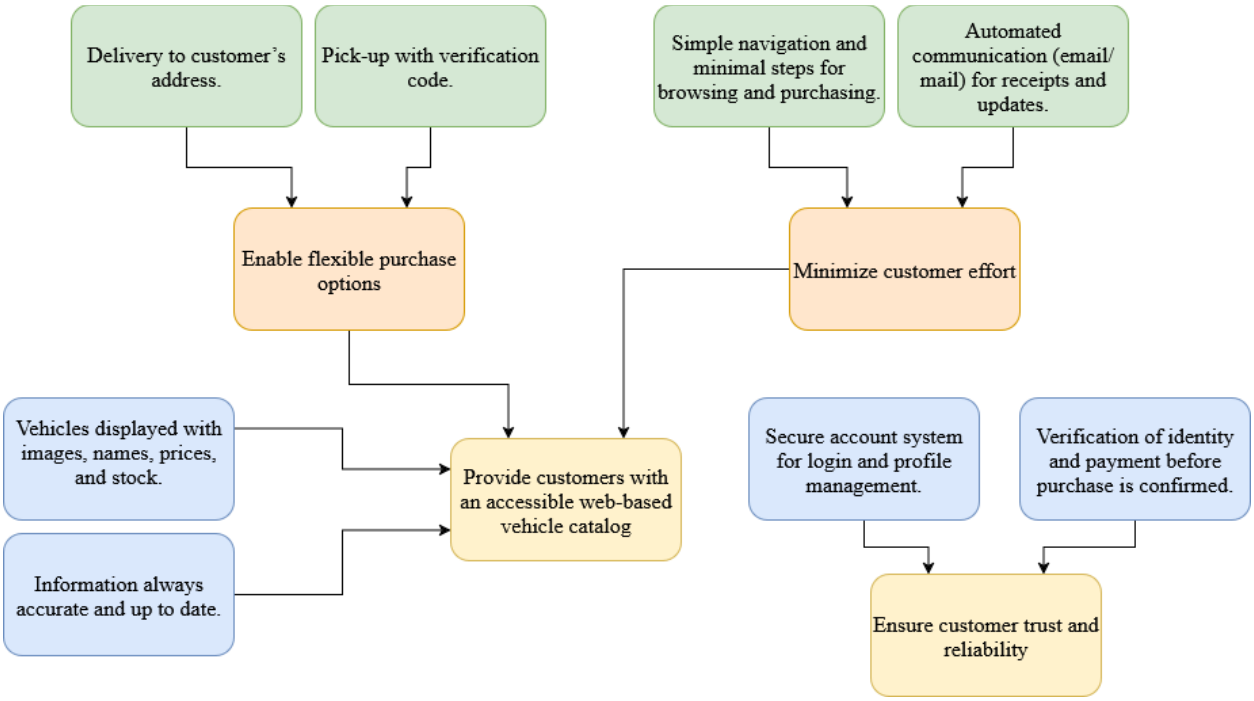
Account System: A feature allowing users to register, log in, and manage their personal details.

2. Goals, Requirements, and Analysis

2a. Business Goals

The main business goal is to create a transparent, convenient, and pressure-free online platform for purchasing vehicles. The platform is intended to reduce the stress and inconvenience associated with buying from dealerships or private sellers.

Goal Hierarchy:



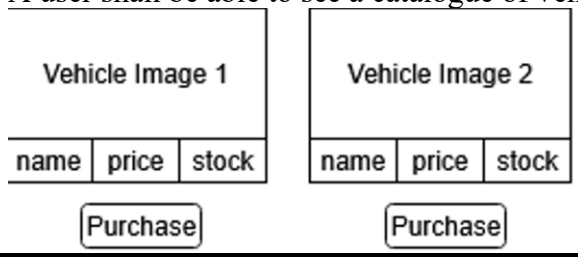
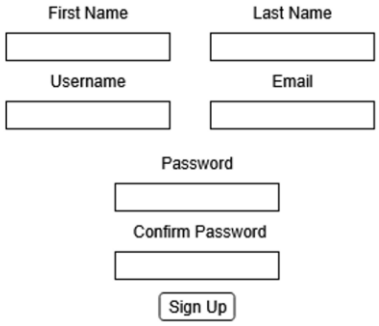
2b. Enumerated Functional Requirements

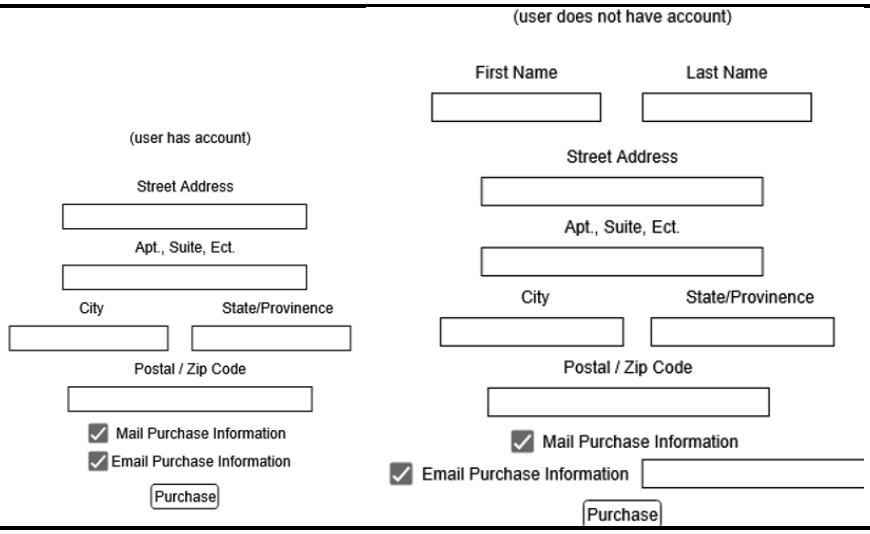
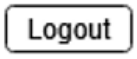
ID	PW	Requirement	Justification
REQ1	5	The website shall display vehicles in a catalog with image, name, price, and stock.	Customers require visibility of all available options before making decisions.
REQ2	5	The website shall display up-to-date information for each vehicle's price and stock.	Prevents misinformation and ensures fair pricing.
REQ3	5	The website shall allow customers to create an account and log in.	Accounts are necessary for managing personal and purchase details.
REQ4	5	The website shall store and allow updates to user-provided purchase information.	Users may need to change address, payment, or contact details.
REQ5	5	The website shall verify customer identity and payment before completing a purchase.	Protects against fraud and ensures legitimate transactions.
REQ6	3	The website shall provide customers with a unique pick-up code if they choose in-store collection.	Ensures secure and efficient pick-up process.
REQ7	3	The website shall provide delivery option by collecting and verifying customer address.	Adds flexibility for users in smaller towns or with limited mobility.
REQ8	3	The website shall send confirmation and purchase details via email/mail.	Keeps customers informed of transaction details.
REQ9	1	The website shall allow filtering/searching vehicles by price, model, or availability.	Improves customer experience but is not core functionality.
REQ10	3	The website shall allow Administrators to see a report of information on what customers have bought.	Allows system managers to see the number of vehicles purchased, their name, and their price.

2c. Enumerated Non-Functional Requirements

ID	Category	PW	Requirement
REQ11	Performance	5	The website shall load catalog pages within 3 seconds under normal load.
REQ12	Reliability	5	The system shall not crash more than once a month during normal operation.
REQ13	Security	5	Customer data and transactions must be encrypted using SSL/TLS.
REQ14	Usability	3	A new user shall be able to complete a purchase in fewer than 7 clicks from the homepage.
REQ15	Scalability	3	The system shall support at least 500 concurrent users.
REQ16	Maintainability	3	Code shall be modular so schema updates can be applied within 2 hours.
REQ17	Portability	1	The website shall be accessible on desktop, tablet, and mobile browsers without layout issues.

2d. User Interface Requirements

ID	PW	Requirement
REQ18	5	A user shall be able to see a catalogue of vehicles 
REQ19	5	The main webpage shall contain a sign in and sign out button 
REQ20	5	A user shall be able to sign up/edit information for an account 
REQ21	5	A user shall be able to sign into an account 
REQ22	5	A user shall be able to enter delivery and/or mailing information

		
REQ23	3	A user shall be able to logout 

3. Functional Requirement Specification and Use Cases

This section identifies the different stakeholders that will take part in the project, the actors involved and their goals but also outlines the use cases for the online vehicle purchasing website based on the requirements and user stories.

3a. Stakeholders

Stakeholders are individuals or groups with an interest in the success of our project. This includes:

- **Customers:** Individuals like Molly, John and Mark who purchase vehicles and use the website to do so.
- **Business Owner/Management Team:** The group responsible for the website's operations, sales, and inventory management.
- **Web Development Team:** The individuals responsible for building and maintaining the website.
- **Financial Institutions/Payment Providers:** Organizations that process online transactions.
- **Delivery and Logistics Partner:** The company responsible for delivering vehicles to customers.

3b. Actors and Goals

Actors are the different roles that interact directly with the system. They are as followed with their goals:

- **Customer (Initiating Actor)**
    - **Searches, views and orders from the website**
    - **Chooses a way to receive their product (delivery or pickup)**
    - **Manages their account information**
- **Administrator (Initiating Actor)**
    - **Manages customer orders**

    - **Manages the product inventory (add, remove, update the stock)**
    - **Checks sales report**
- **Database (Participating Actor)**
    - **Keeps all the information related to the vehicles, the users, transactions, etc...**
- **Payment Gateway (Participating Actor)**
    - **Processes various payments in a secure manner**
- **Mailing Service (Participating Actor)**
    - **Sends order confirmation messages to the customers (email, imessage, etc...)**

3c. Use Cases

i. Use Cases

UC1: Browse Catalogue

- Description: Allows the customer to view vehicles from the catalog along with their details (image, name, price, stock)
- Derived from requirements REQ1 and REQ2

UC2: Create account and log-in

- Description: Allows a user to create or to log into an account in the system for personal details to be used.
- Derived from requirements REQ3

UC3: Manage Purchase Information

- Description: Allows the customer to update their information such as address, contact information, and payment information.
- Derived from requirements REQ4

UC4: Verify and Complete Purchase

- Description: Allows the customer to finalize a purchase and make a secure purchase through the payment gateway.

- Derived from requirements REQ5

UC5: In-Store Collection

- Description: Allows the customer to collect a purchased car at the store using a unique pick-up code.
- Derived from requirements REQ6

UC6: Home Delivery

- Description: Allows the customer to have a purchased car delivered to a chosen address.
- Derived from requirements REQ7

UC7: Send Purchase Confirmation

- Description: Allows the system to send confirmation details to the customer from the mailing service.
- Derived from requirements REQ8

UC8: Search/Filter Vehicles

- Description: Allows the customer to filter catalog for specific criteria (price, model, etc.)
- Derived from requirements REQ9

UC9: Manage User Information (Admin)

- Description: Allows the Administrator to view or update a customer's profile information
- Derived from REQ4

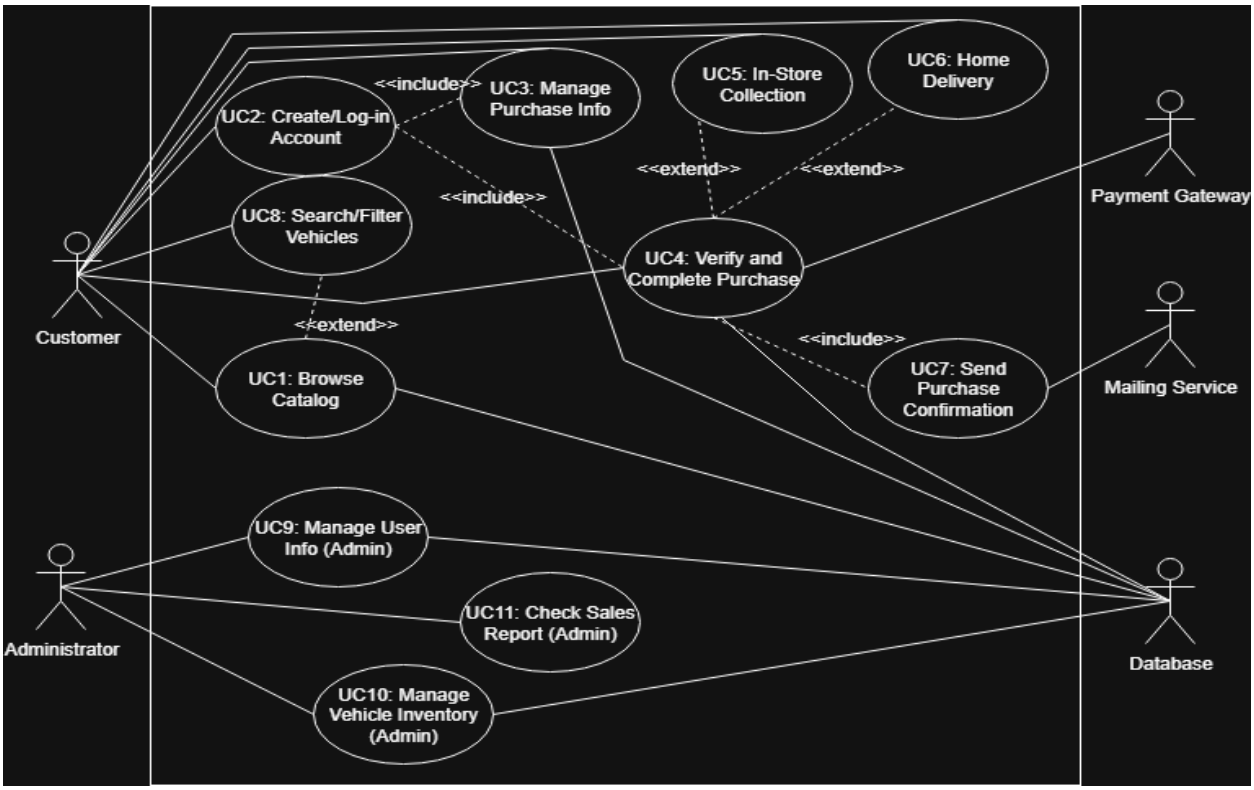
UC10: Manage Vehicle Inventory (Admin)

- Description: Allows the Administrator to add or remove vehicles to the catalog as well as update details about vehicles.
- Derived from REQ2

UC11: Check Sales Report (Admin)

- Description: Allows the Administrator to see a report of information on what customers have bought
- Derived from REQ10

ii. Use Case Diagram



iii. Traceability Matrix

REQ	PW	UC1	UC2	UC3	UC4	UC5	UC6	UC7	UC8	UC9	UC10	UC 11
REQ 1	5	X										
REQ 2	5	X									X	
REQ 3	5		X									
REQ 4	5			X						X		
REQ 5	5				X							

REQ 6	3					X						
REQ 7	3						X					
REQ 8	3							X				
REQ 9	1								X			
REQ 10	3											X
Total Weight		10	5	5	5	3	3	3	1	5	5	3

iv. Fully Dressed Description

Use Case UC1: Browse Catalog

Name:	UC1: Browse Catalog
Actors:	Customer (Initiating), Database. (Participating)
Precondition:	Customer accessed the system. Data exists in the system
Postcondition:	The customer can view the vehicle catalog
Main Flow Steps	1. The customer starts browsing 2. System requests information from database 3. Database returns the data about the vehicles and their information 4. System displays the information to the customer 5. Customer view and explores the information
Alternate Flow Steps	If there are no vehicles in stock the system will show a message to the customer telling them that there are no cars in the database. If the database fails to connect, then the system will show the user a message telling them it was unable to load and to try again later

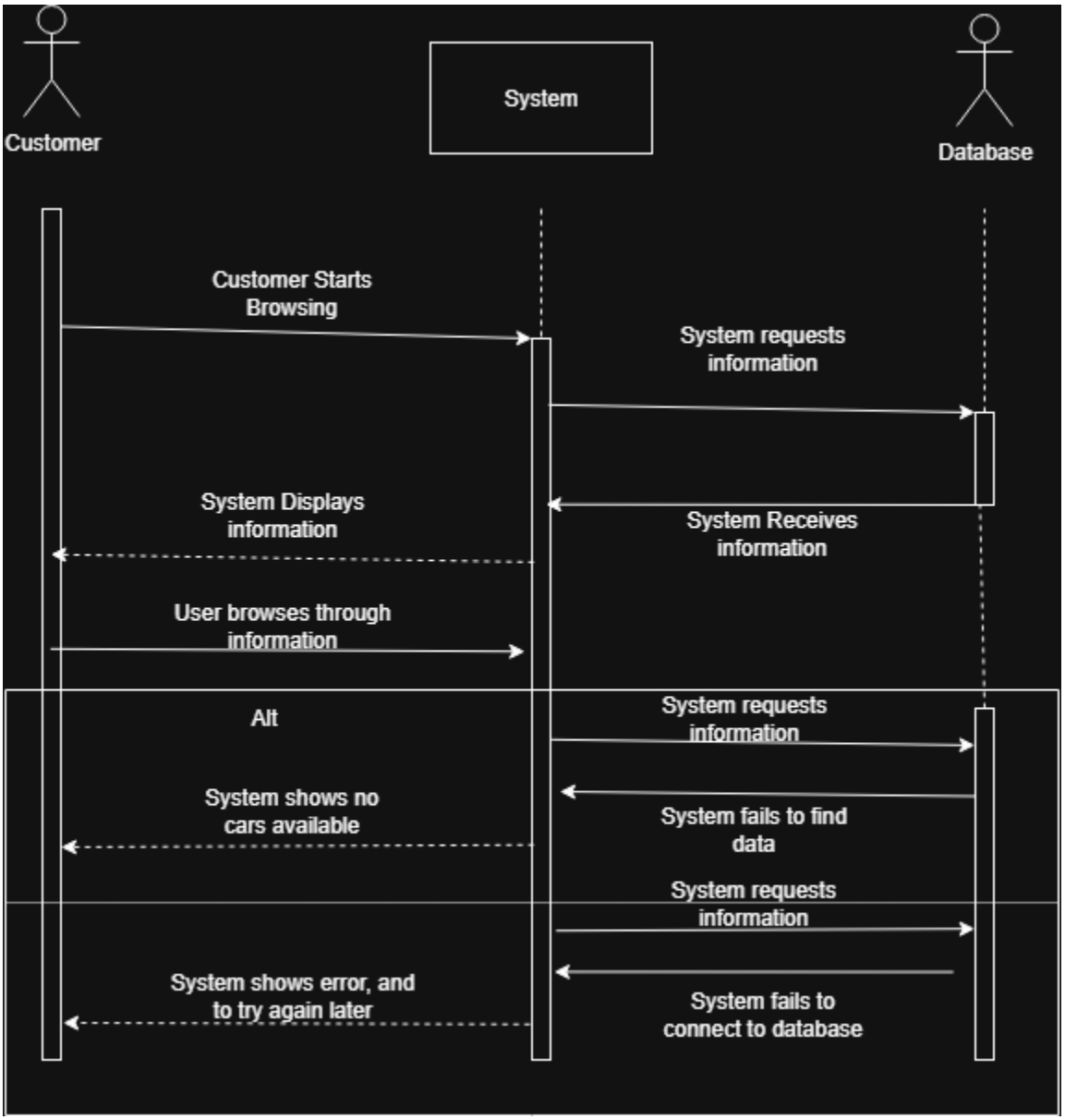
Use Case UC4: Verify and Complete Purchase

Name:	UC4: Verify and Complete Purchase
Actors:	Customer (Initiating), Payment Gateway (Participating), Database (Participating)
Preconditions:	Customer is logged in, Customer is trying to buy a vehicle
Postconditions:	Payment is verified
Main Flow Steps:	1. Customer starts the checkout 2. System retrieves customer information from database 3. System asks customer to review details

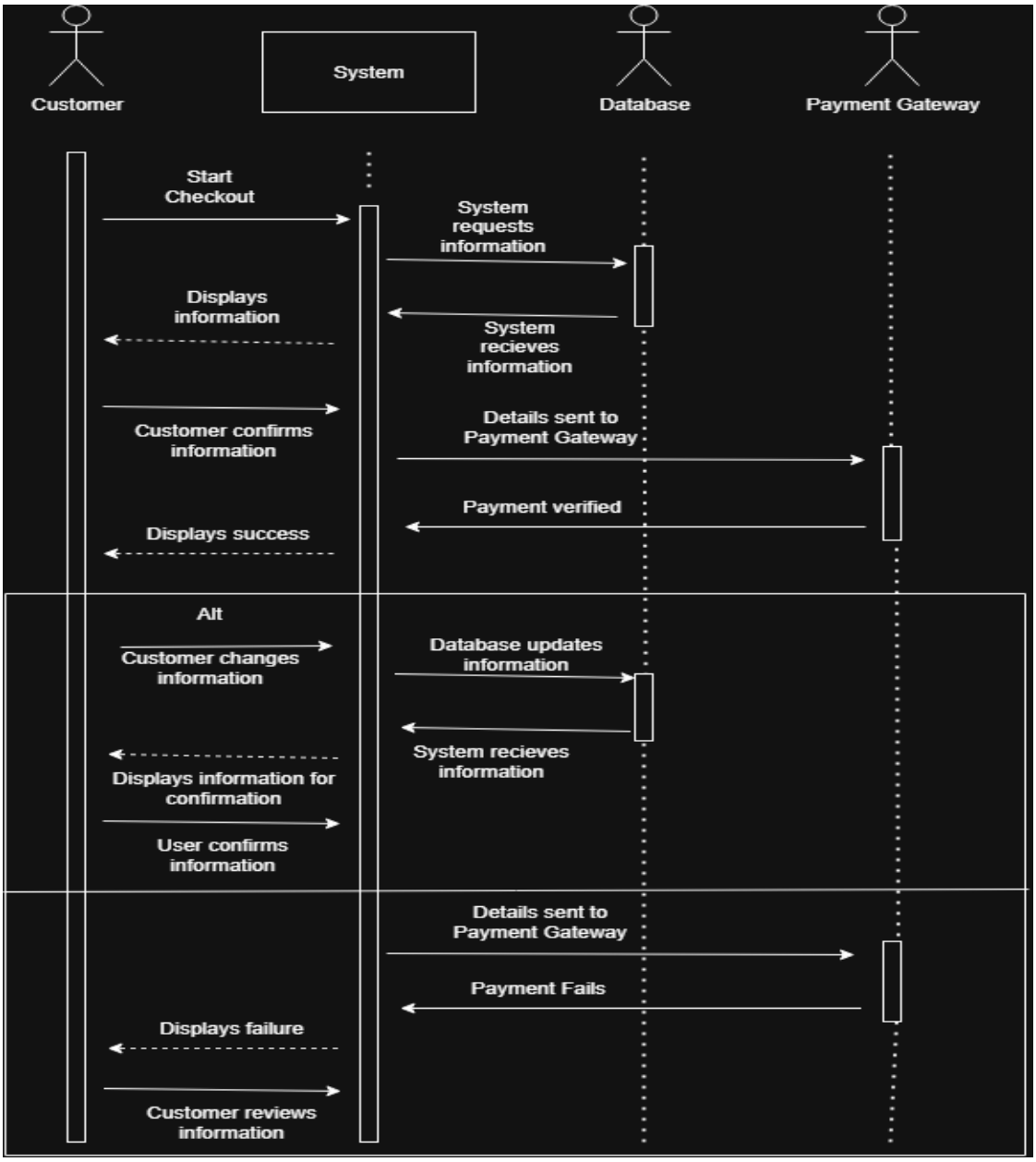
	4. Customer confirms details 5. Details sent to Payment gateway 6. Payment gate way verifies information 7. System continues and triggers UC7
Alternate Flow Steps:	Customer changes the information during the review part of the process. If the payment fails, the system will attempt to get the customer to try again or use a different payment option.

3d. System Sequence Diagrams

UC1 Browse Catalog



UC4 Verify and Complete Purchase

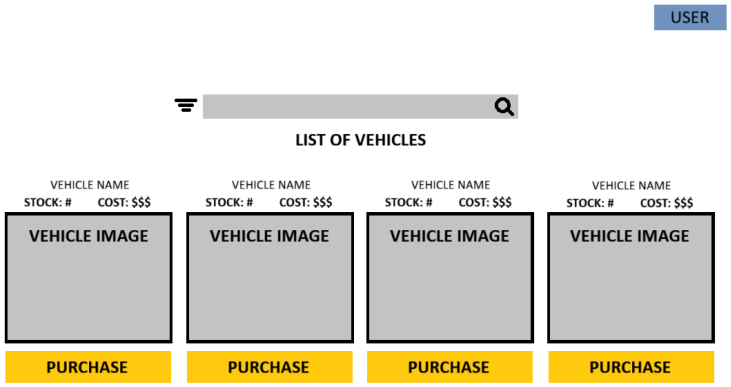

Customer
System
Database
Payment Gateway
Start Checkout
System requests information
Displays information
System recieves information
Customer confirms information
Details sent to Payment Gateway
Payment verified
Displays success
Alt
Customer changes information
Database updates information
System recieves information
Displays information for confirmation
User confirms information
Details sent to Payment Gateway
Payment Fails
Displays failure
Customer reviews information

4. User Interface Specification

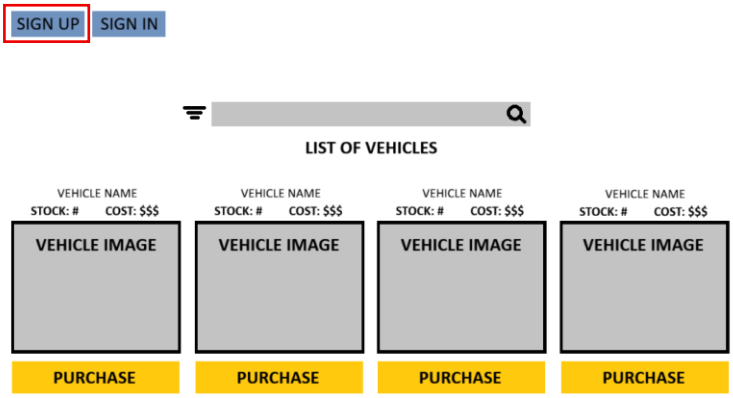
The purpose of this section is to give further details as to how the user will interact with the website to complete whatever task they are doing. Step-by-step descriptions of how the user inputs information and how the results will be displayed will be in this section.

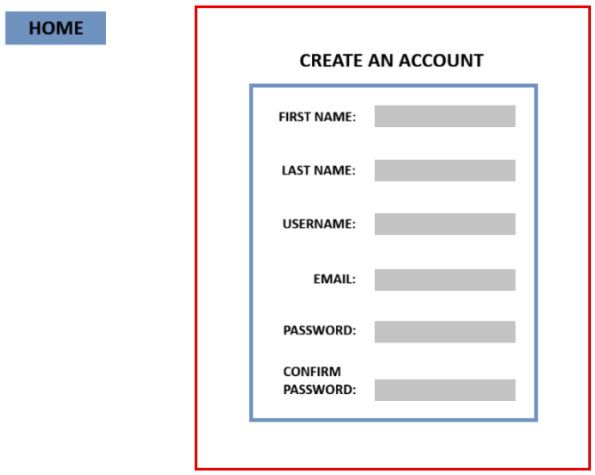
4a. Preliminary Design

UC1: Browse Catalogue

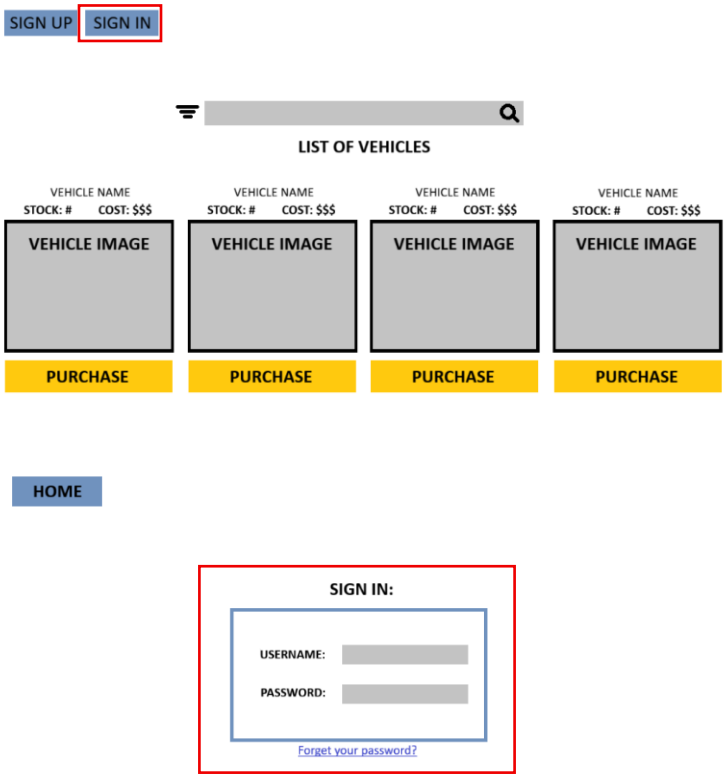


UC2: Create Account and Log in

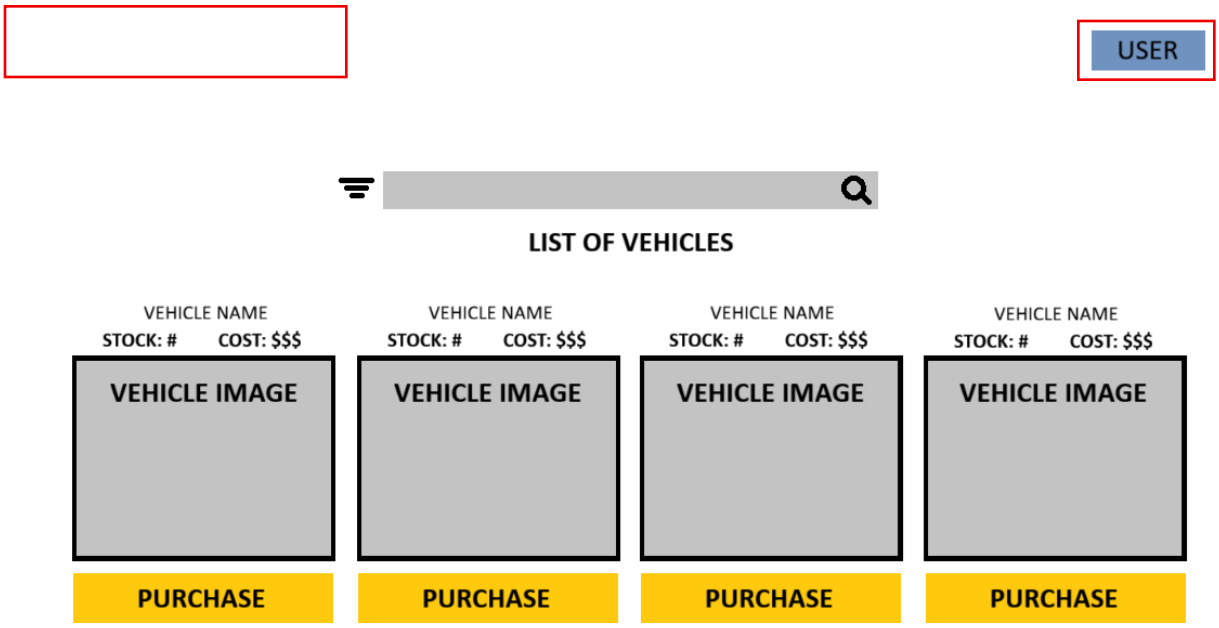




The user will enter their first name, last name, desired username, email, and desired password into the required fields to create their account.

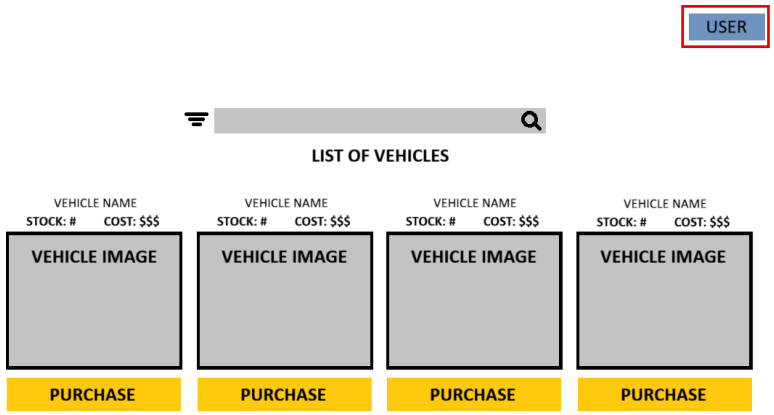


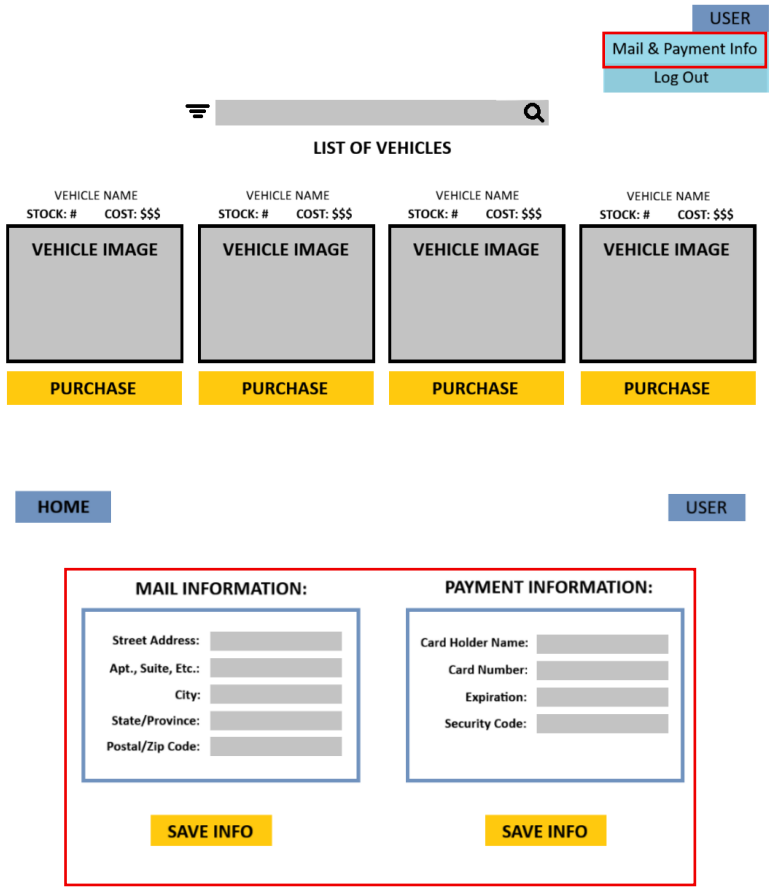
The user will enter their created username and password into the required fields.



After creating an account or signing into the website, the main page will be displayed slightly differently. The “Sign Up” and “Sign in” buttons will no longer be visible, instead showing a “User” button in the upper right-hand corner of the display.

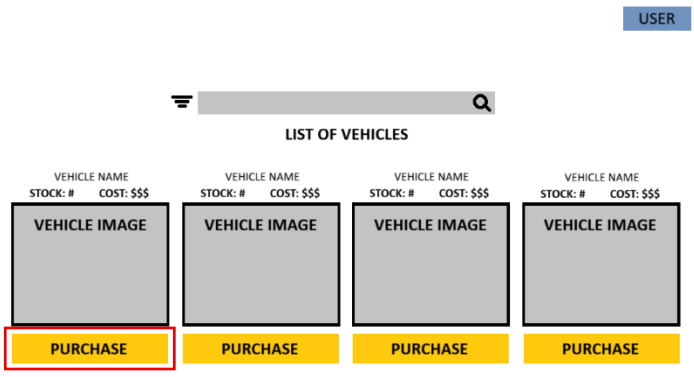
UC3: Manage Purchase Information

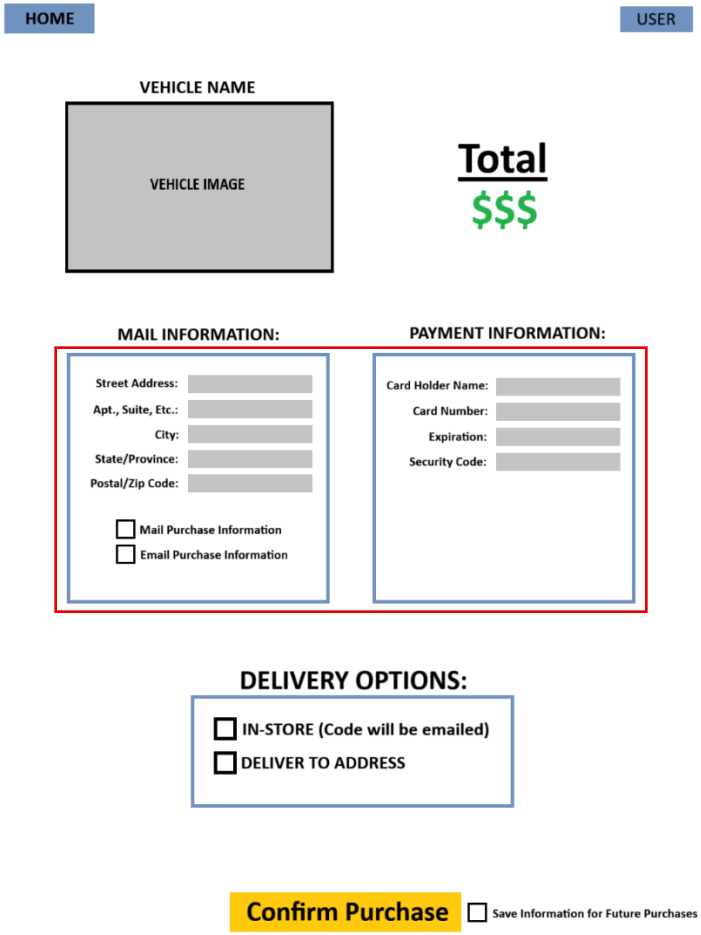




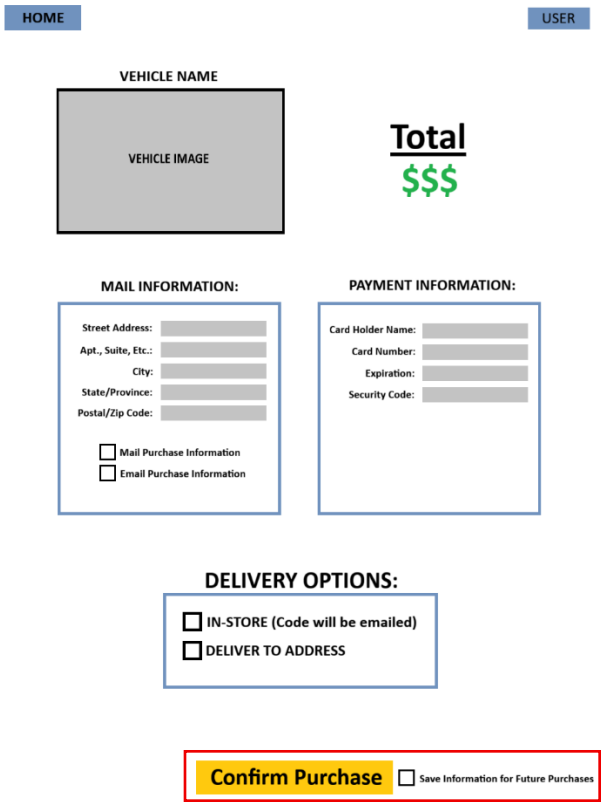
The user will enter their desired information into the selected fields to change their mail/payment information. Then they can click on the “Save info” button to save their changes.

UC4: Verify and Complete Purchase





The user will enter their desired information into the selected fields, so their mail information and payment information is available for the purchase to process.



The user will click on the “Confirm Purchase” button to submit the above information to the website for processing. The user will also have the option to “save information for future purchases” buy checking the box with the same name.

UC5: In-Store Collection

The user can click on the box for “In-Store” to mark the purchase for in-store pickup.

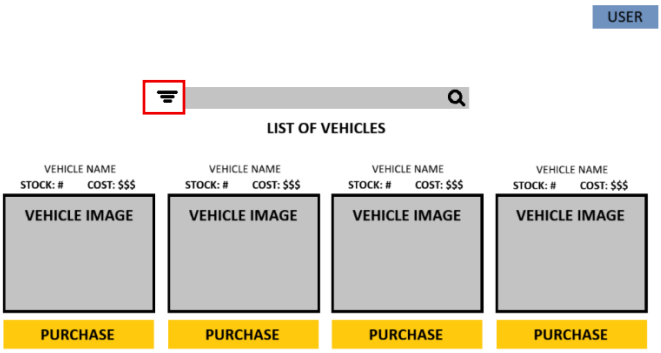
UC6: Home Delivery

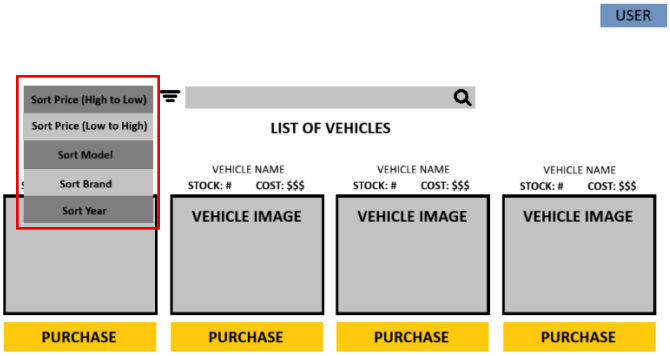
The user can click on the box labeled “Deliver to Address” to mark the purchase for delivery to the entered mailing address above.

UC7: Send Purchase Confirmation

The user can click on the box labeled “Mail Purchase Information” to mark the transaction so that they will be mailed information related to the transaction. The user can also choose to click on the box labeled “Email Purchase Information” to have them be sent an email of the purchase information for the transaction. The user can choose both, either or, or neither.

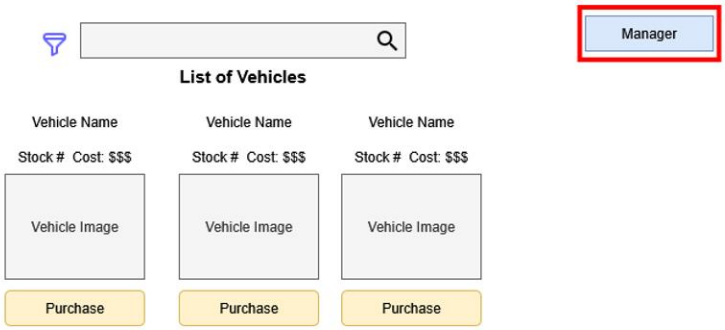
UC8: Search/Filter Vehicles

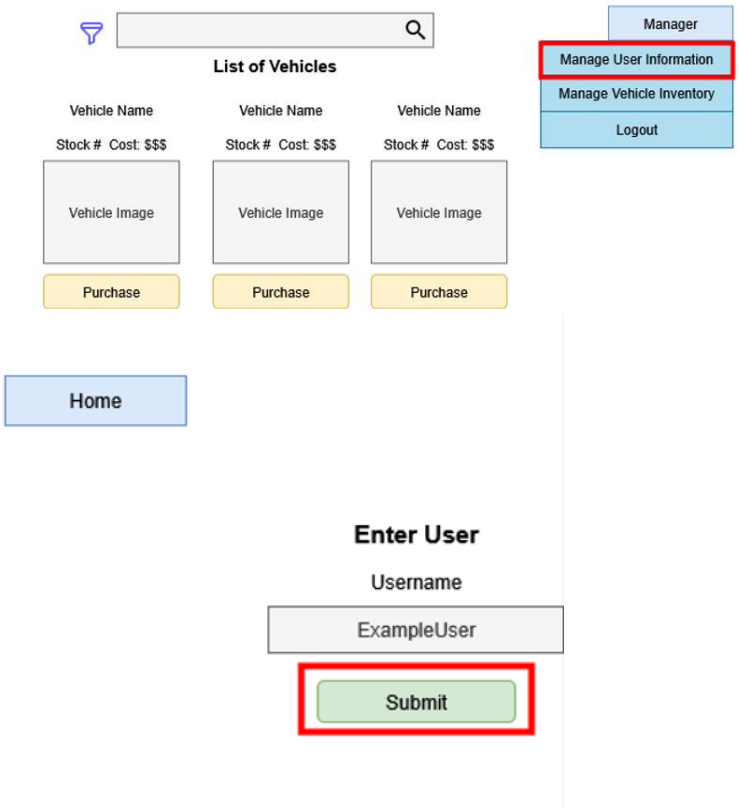




The user can use the drop-down menu to sort the list of vehicles by price, model, brand, year, etc.

UC9: Manage User Information (Admin)

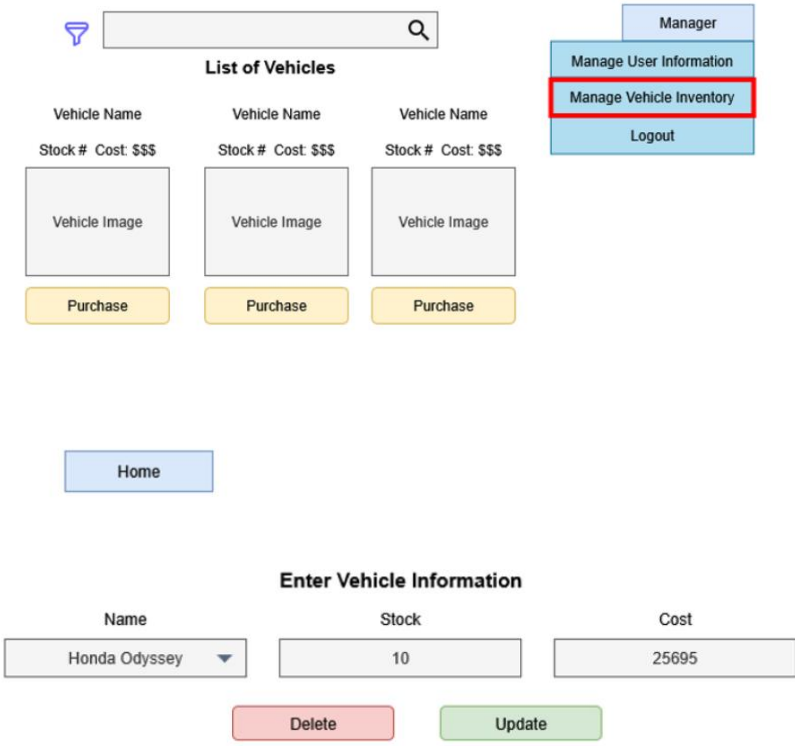




The manager will search for a user based upon their username and press submit

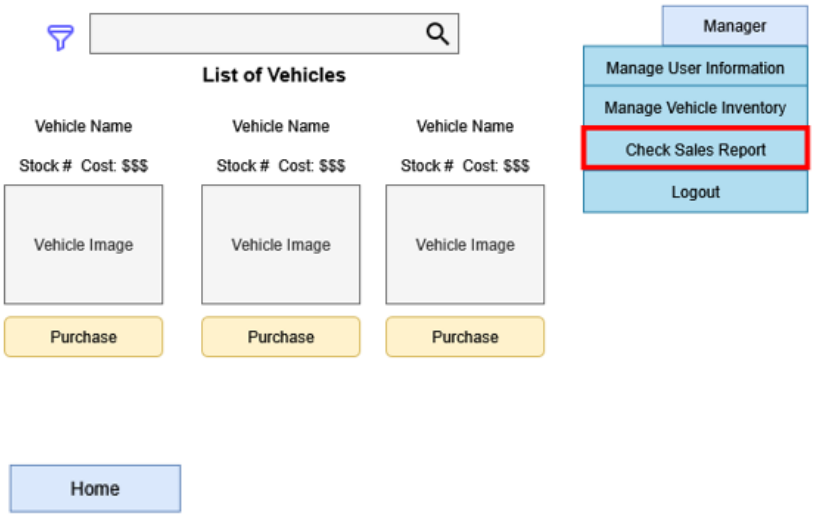
Then, they will update the user's information based on what's requested to be changed

UC10: Manage Vehicle Inventory (Admin)



The manager will enter any new information, and it will change the information based on the name of the vehicle entered. The vehicles can be found through a dropdown, and the dropdown will update based upon what is entered. The manager can also click on the delete button to delete the vehicle. The delete button will need to be pressed a second time after a pop-up warning occurs.

UC11: Check Sales Report (Admin)



Home

Vehicle	Price	Quantity	Date
Honda Odyssey	26435	5	9/20/2025
Ford F-150	25435	5	9/21/2025
Toyota Prius	23465	5	9/21/2025

Display the most recent purchase information

4b. User Effort Estimation

1. Enter sign up details: The sequence below shows the actions required to sign up as John Smith

   Navigation: 2 clicks

   1.1. Click on the sign-up button on the home page
   1.2. Click the sign-up button after entering information on the sign-up page

   Data Entry: 49 key presses and 8 clicks

   1.3. Click on the entry box and type the first name John
   1.4. Click on the entry box and type the last name Smith
   1.5. Click on the entry box and type the username JSmith
   1.6. Click on the entry box and type the email address JSmith@gmail.com
   1.7. Click on the entry box and type password 1Qar5q@r!
   1.8. Click on the entry box and retype the password 1Qar5q@r!
2. Enter sign in details (only if user is coming back to the website): The sequence below shows the actions required to sign in as John Smith

   Navigation: 2 clicks

   2.1. Click on the sign-in button on the home page
   2.2. Click the sign-in button after entering information on the sign-in page

   Data Entry: 15 key presses and 2 clicks

   2.3. Click on the entry box and type the username JSmith
   2.4. Click on the entry box and type the password 1Qar5q@r!
3. Purchase a vehicle: The sequence below shows the actions required to have a vehicle delivered to 700 College Dr, Hays, KS 67601

   Navigation: 2 clicks

   3.1. Click the purchase button below one of the vehicles on the homepage
   3.2. Click the confirm purchase button on the vehicle purchase page

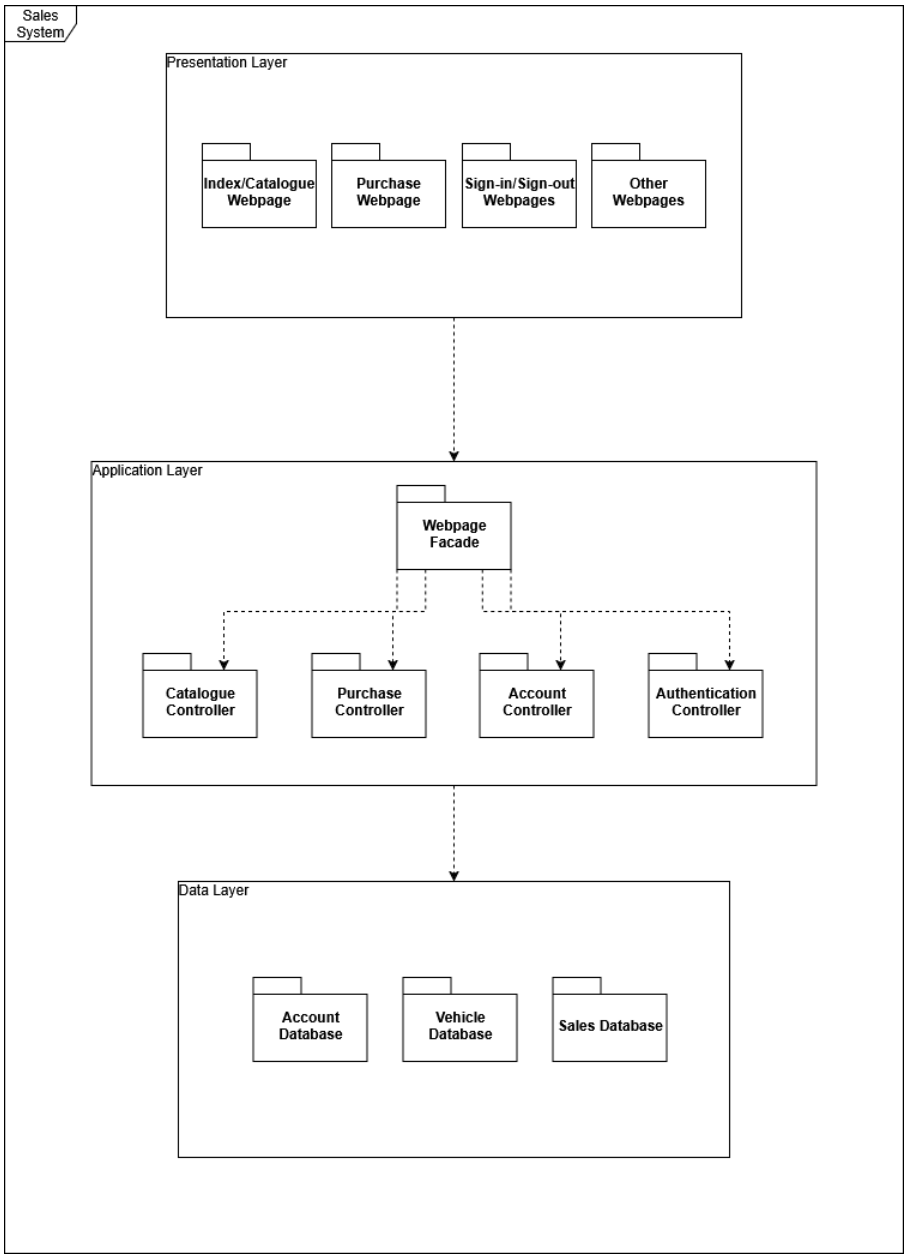
   Data Entry: 58 key presses and 13 clicks

   3.3. Click on the entry box and type the street address 700 College Dr
   3.4. Click on the entry box and type the city Hays
   3.5. Click on the entry box and type the state KS
   3.6. Click on the entry box and type the zip code 67601
   3.7. Click on the entry box and type the card holder name John Smith
   3.8. Click on the entry box and type the card number 5588 9756 5070 3832
   3.9. Click on the entry box and type the expiration date 8/27
   3.10. Click the entry box and type the security code 999
   3.11. Click on the mail & email purchase information checkboxes

3.12. Click on the delivery option

5. System Architecture and System Design

5a. Identifying Subsystems



This system follows the multi-tiered design pattern, and it consists of a presentation, application, and data subsystems. The subsystems can be described as follows:

Presentation: This subsystem displays the information on a webpage. On each webpage there are various buttons and entry boxes the user can interact with to input data or move between each page.

Application: This subsystem does the computations. Any user input is processed in this subsystem, as soon as a user submits information the correct database is updated accordingly. There is user verification and purchase verification done here, and there are various requests to databases for the verification of the provided information.

Data: This subsystem stores information. Any information provided through the application subsystem is stored here. There are three separate databases for all of the different types of data stored.

5b. Architecture Styles

The multi-tiered architecture style was chosen for this project. The separation of the different layers makes code corrections easier in the long run. The presentation layer has webpages that use code for various tasks including sales reports, user sign-in/sign up, information updates, and purchases. The application layer runs code, and it updates databases based on the information provided. The data layer has databases which store information related to vehicles, users, and sales.

5c. Mapping Subsystems to Hardware

Various Controllers: This subsystem runs on the server, and every computation is done by the server.

Various Webpages: This subsystem runs on the various user's clients, and the webpages are displayed on the users' computers.

Various Databases: This subsystem is stored on the main server computer, and the information is updated based on the information from the various controllers.

5d. Connectors and Network Protocols

HTTPS: This protocol is what the web application will run on. It is used for communicating between the client and server

API Connection: The google mail API will be used for sending automated messages through email. This includes the purchase controller for sending billing information, and the account controller for changes to account information. This will be programmed through Python.

5e. Global Control Flow

Execution orderness: The system uses event-driven architecture. Our website waits for certain events to happen. For example, the user John Smith enters his details to sign in. John could also have picked to purchase a vehicle first, and then he would have entered details for his purchase. Any event could happen in any order, one before the other or one after the other.

Time dependency: The system is an event-response type of system. It does not have to wait for anything to happen, and the user can spend as much time as they want on each page. The processes do not time out.

5f. Hardware Requirements

Screen Display: The webpages on our website can display on most laptops, computers, and mobile devices. The layout will change depending on each device and may not work on hardware that cannot run windows 7.

Communication Network: While the website may display with a slow internet connection, it is recommended to have at least an average internet connection (42.86Mbps).

Database Server: Our server will have a database to store all information related to the vehicles and user accounts.

Plan of Work

We intend to create a website using freely available technologies that provides users with the ability to purchase vehicles online. This website will query a database to keep information on each vehicle up to date as well as store purchase information. Users will be able to provide information necessary for vehicle purchase, create accounts to allow for modification of this information, and use the website to easily purchase a vehicle. Python will be used to send emails to users. This website will be locally hosted from the team leader's computer due to the lack of options for free database hosting, but in a practical scenario with funding it would most likely be hosted through amazon web services.

Languages: HTML, CSS, JavaScript, Python, SQL

Platforms/Tools: GitHub [1]

Integrations: email [2]

Our initial work plan will follow the Gantt chart below:

Phase	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
Project Planning														
Requirements														
Design														
Implementation														
Testing														
Deployment														

References

1. GitHub, version control and project planning. https://docs.github.com/en
2. Gmail, email provider. https://developers.google.com/gmail/api/guides/sending