Problem Statement

BAM Car Dealership would like to implement an application where they can keep track of their inventory and give potential customers an easy way to browse the inventory. The application would store data about the dealerships inventory and details about the cars in stock such as make, model, miles, and price. There will be Managers that will add and remove cars from the application. The Managers will need to be authenticated by the application. A Manager can add other Managers to the application to delegate workload. Any potential customer can view cars in the dealerships inventory by browsing or by searching. A potential customer can view a car in stock. The potential customer should be well informed of any cars they may be interested in purchasing when they visit the dealership.

Scenarios

1. Bobby wants to find a red Honda Civic, from 2009, with 10,000 miles or less, costing between $10,000 and $15,000. So, Bobby browses to the dealership site. Bobby then clicks the advanced search link. Bobby then is presented with a filter list, and Bobby selects the corresponding filters according to his search, then submits his query. As a result, a list of cars with characteristics similar to the query comes up for Bobby to browse through. Bobby finds the car he wants, but doesn't know the dealership's hours, so he clicks on the dealership location link and finds the address and hours.

2. Pat wants to add a new car to his inventory at the dealership. So, Pat browses to the dealership site, and logs in. Pat is provided a page with the inventory on it along with buttons to add a car and to remove a car. Pat clicks the add new car button, and is then provided a form to enter the characteristics of the new car, such as color, make, model, year, mileage, cost, style, and vehicle ID, to then be submitted. After the car is submitted, the car is added to the list of existing cars in inventory and a success message is displayed.

3. Pat wants to remove a car from his inventory at the dealership because he just sold a car. So, Pat browses to the dealership site, and logs in. Pat is provided a page with the inventory on it along with buttons to add a car and to remove a car. Pat then filters what car he wants to remove, for example, by vehicle ID. Pat clicks the remove car button for the corresponding car he wants to remove, and then the car is removed from the list of existing cars in inventory and Pat is navigated back to the inventory page.

4. Pat hires a new manager, Jerry. As a result, Pat needs to add Jerry to the list of managers. To do this, Pat navigates to the dealership site, and logs in. Pat then clicks the register link and is provided a form to fill in email, password, and confirms the password for Jerry. Pat then submits the form. A success message is displayed and Jerry is added to the list of managers and is now able to log in himself.

Use Cases

1. Name: Search by Details

   Actor: Potential Customer

   Description: The Potential Customer can search for cars in stock by specifying color, year, make, model, maximum number of miles, style, and price range.

   Precondition: Potential Customer has navigated to the dealerships website.

   Trigger: Potential Customer clicks the "Advanced Search" link

   Steps: Potential Customer enters keywords in the filter box they want to search by then clicks the search button.

Exceptions:

- Search does not return any results, displays a no items found message.
- Customer does not enter any keywords, returns customer to browse page.
- Customer enters an invalid price range.

Postcondition: Potential Customer lands on a page with a list of cars based on keywords provided.

2. Name: Add Inventory

   Actor: Dealer

   Description: The dealer can add a new car to his inventory along with the characteristics of that car.

   Precondition: Dealer has already navigated to the dealership website and logged in.

   Trigger: Dealer clicks the Add New Car link.

   Steps: Dealer presses the add new car link and fills out the characteristics of the car: make, model, year, miles, style, description, color, vehicle identification number, and price. Then clicks the submit button.

   Exceptions:

   - Dealer neglects to add a value for a required field, the dealer will be prompted to enter a value.
   - Dealer enters invalid value for a field, the dealer will be prompted to correct the value.
   - A car with the same vehicle identification number is already included in the inventory.

   Post condition: The car is added to the inventory and the dealer is presented with a confirmation.

3. Name: Remove Inventory

   Actor: Dealer

   Description: The dealer can remove a car from his inventory, with the characteristics of that car.

   Precondition: Dealer has already navigated to the dealership website and logged in.

   Trigger: Dealer presses the delete button.

   Steps: Dealer navigated to cars' inventory page. Then finds the car which he want to remove. Then press the delete button next to the target car to remove the car from the inventory. A prompt will come up asking if the dealer is sure he wants to delete the car. The dealer then presses yes, and the dealer is navigated back to the inventory page, with the car he deleted not listed.

   Exceptions:

   - Specific car dealer wants to remove, is not displayed.
   - Dealer presses the cancel button when prompted with final deletion decision

   Post condition: The dealer is back at the inventory page and the car is not listed in the inventory

4. Name: Add Admin

Actor: Dealer

Description: A Dealer can add another user as an Admin of the website.

Precondition: Dealer has already navigated to the dealership website and logged in.

Trigger: Dealer clicks the "Add Admin" link.

Steps: Dealer clicks the Add Admin link and is presented with a form. The Dealer fills in the new Admins Email, Password, and the Password a second time. Then the Dealer clicks Submit.
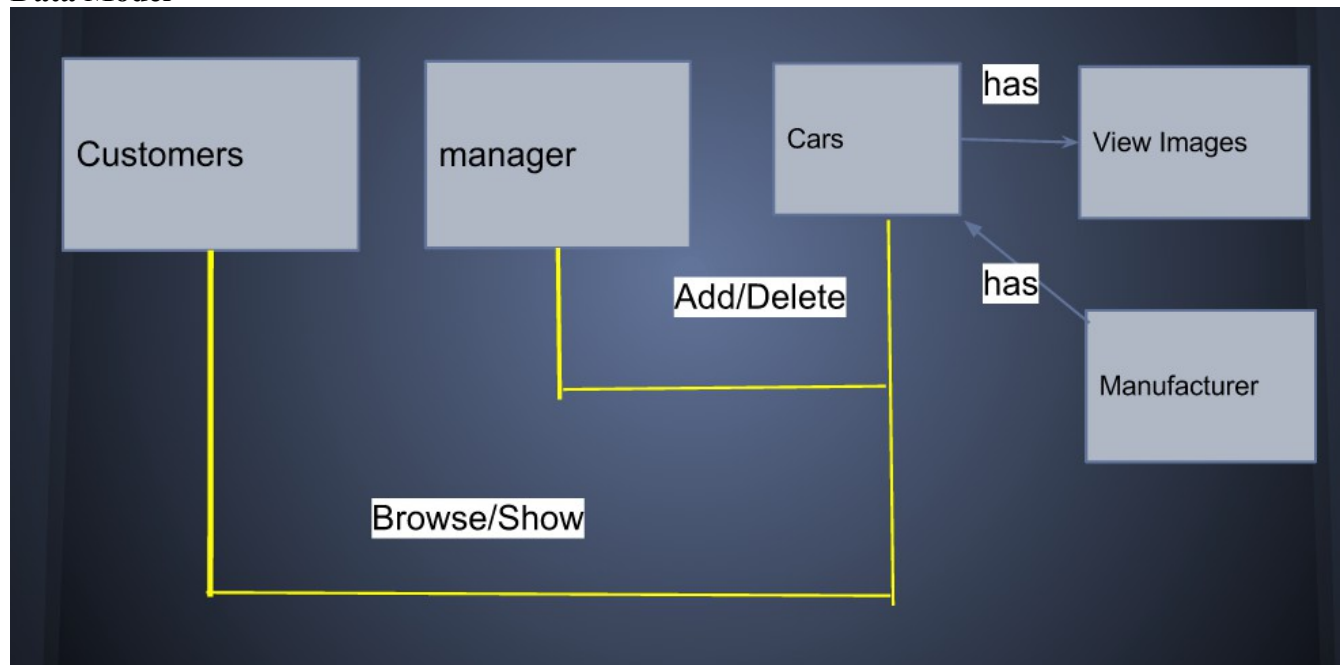
Exceptions:

🕐 The second password does not match the first password.

🕐 Email is already registered on the website.

🕐 The dealer neglects to fill in a field.

🕐 Value for Email is not a properly formatted email address.

Post condition: The Dealer is presented with a confirmation message and the new user will be able to log in.

Roles and Responsibilities

- Mitchell Kokko – First iteration, documentation, assistance with implementation, and assistance with views

- Archana Sevak – Assistance with documentation in data model and sequence diagrams, implementing advanced search bar, and testing

- Benjamin Mangliers – Assistance with documentation in scenarios and uses cases, implementing manager functionality, and implementing layout views
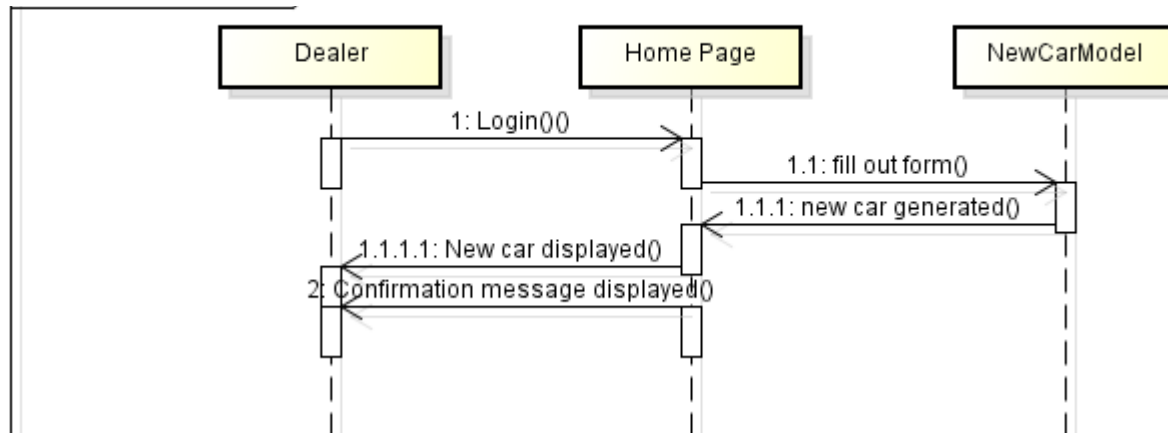
Data Model

Abbot's Analysis – Scenario #1

Part Of Speech	Model Component	Example
Proper Noun	object	Bobby, Honda Civic
Improper Noun	class	dealership, site, link, cars, characteristics, hours, location, address, filter
Doing Verb	method	Find, browses, clicks, presented, selects, submits
Being Verb	inheritance	N/a
Having Verb	aggregation	
Model Verb	constraint	From, with, between, costing
Adjectives	attribute	Red, less, cooresponding
Transitive Verb	Method - event	
Intransitive Verb	method(event)	

Data Flow

New car addition

Search