Universidad Distrital Francisco José de Caldas

UNIVERSIDAD DISTRITAL
FRANCISCO JOSÉ DE CALDAS

Faculty of Engineering

Workshop 3

Technical Report

Advanced Programming

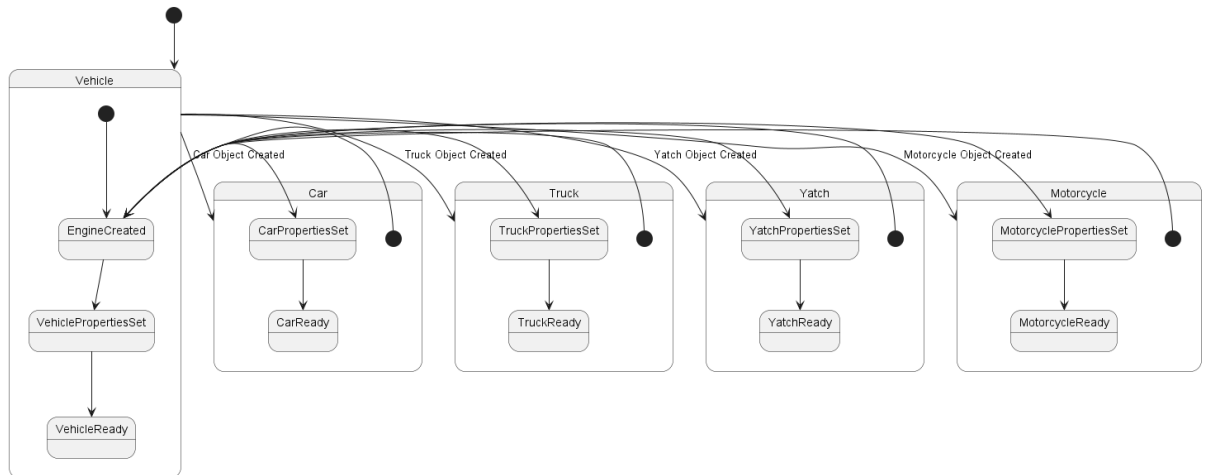**Nicolas Avendaño Barajas   20231020113**

Bogotá D.C

1. User Stories:

1. As a user, I want to be able to create an engine so that I can specify the characteristics of a vehicle's engine accurately.
2. As a user, I want to create a car so that I can add it to the catalog of vehicles.
3. As a user, I want to create a truck so that I can add it to the catalog of vehicles.
4. As a user, I want to create a yacht so that I can add it to the catalog of vehicles.
5. As a user, I want to create a motorcycle so that I can add it to the catalog of vehicles.
6. As a user, I want to see all the engines I've created so that I can keep track of them..
7. As a user, I want to see all the vehicles I've created so that I can review them.
8. As a user, I want to be able to exit the program when I'm done with it.

9. As a user, I want a structured menu so that I can easily navigate through the program's functionalities..
10. As a user, I want the program to authenticate me using my username and password to ensure security..
11. As an administrator, I want to be able to create, modify, and delete user accounts to manage access to the system.
12. an administrator, I want to monitor the activity within the system to ensure proper usage and security.
13. As an administrator, I want to generate reports on sales, inventory, and other relevant data to track the performance of the company.
14. As an administrator, I want to be able to add, edit, and remove vehicle listings from the catalog to keep it up-to-date.
15. As an administrator, I want to address and resolve customer issues or complaints efficiently to maintain customer satisfaction.
16. As an administrator, I want to implement security measures such as encryption and access controls to protect sensitive data.
17. As an administrator, I want to coordinate maintenance and repairs for vehicles in the inventory to ensure they are in optimal condition for sale.
18. As an administrator, I want to oversee the financial aspects of the company, including budgeting, expenses, and revenue tracking.
19. As an administrator, I want to regularly update the system software and applications to ensure they are secure and functioning properly.
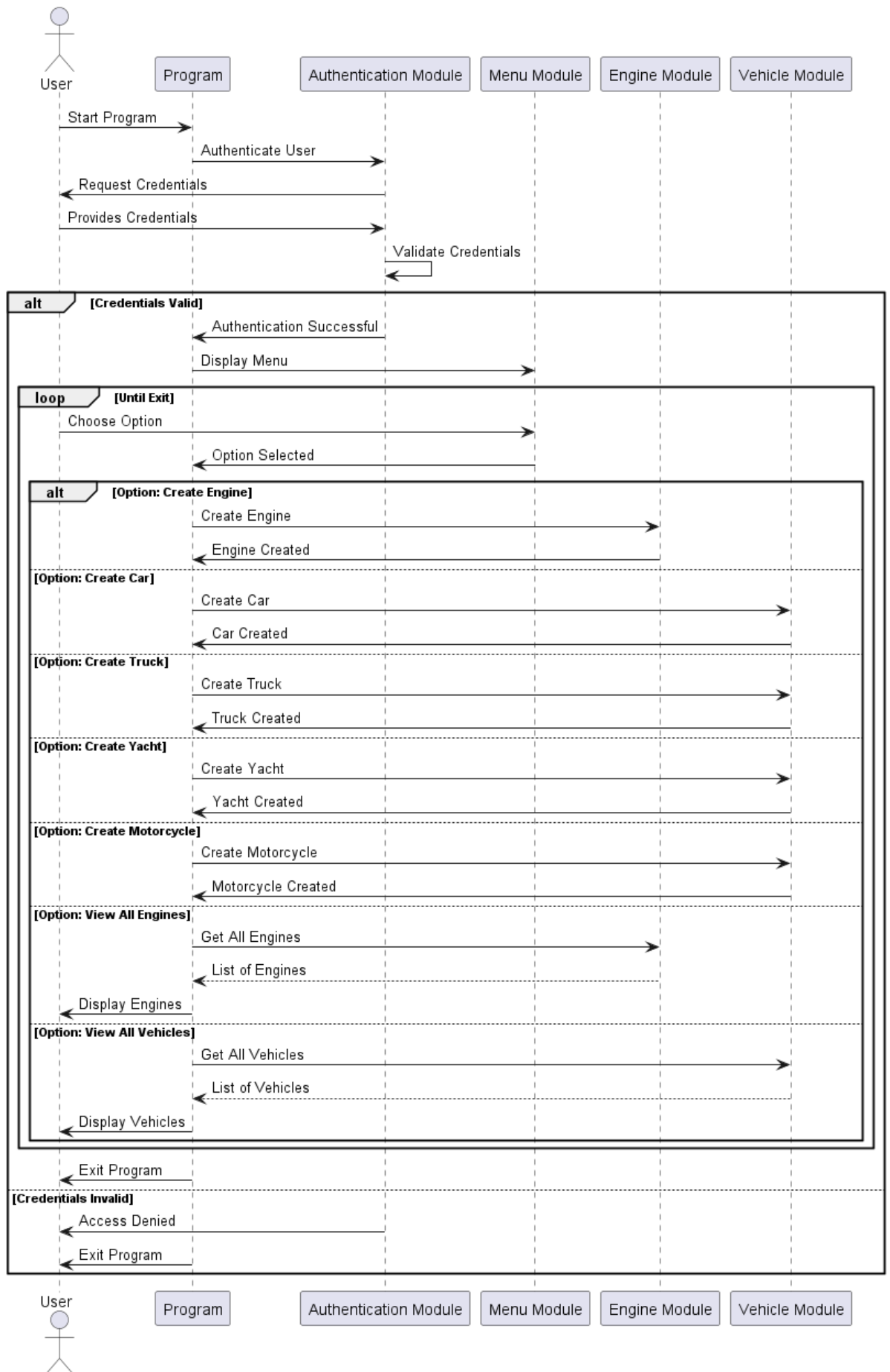
20. As an administrator, I want to provide training and support to users of the system to ensure they can effectively utilize its features.
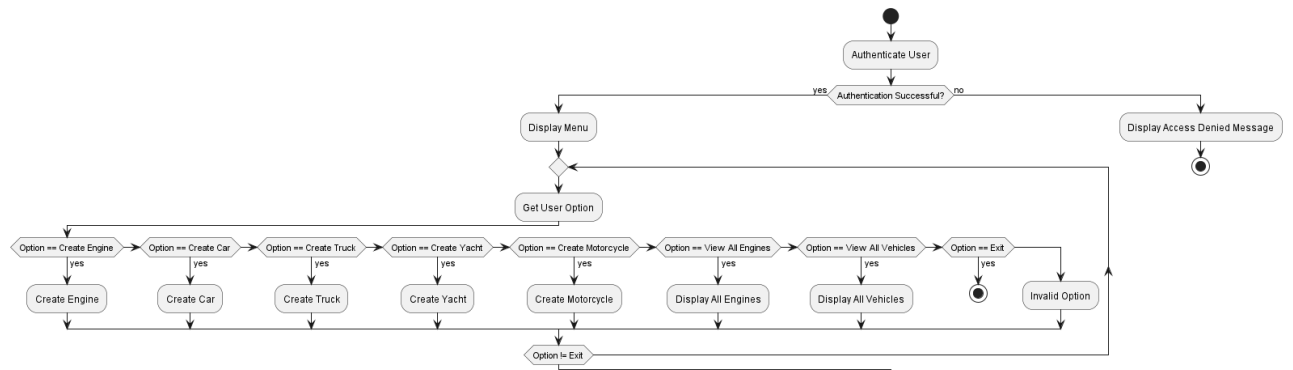
Uml Diagrams

State Diagram :

Sequence Diagram:

User — Program — Authentication Module — Menu Module — Engine Module — Vehicle Module

Start Program

Authenticate User

Request Credentials

Provides Credentials

Validate Credentials

alt [Credentials Valid]

Authentication Successful

Display Menu

loop [Until Exit]

Choose Option

Option Selected

alt [Option: Create Engine]

Create Engine

Engine Created

[Option: Create Car]

Create Car

Car Created

[Option: Create Truck]

Create Truck

Truck Created

[Option: Create Yacht]

Create Yacht

Yacht Created

[Option: Create Motorcycle]

Create Motorcycle

Motorcycle Created

[Option: View All Engines]

Get All Engines

List of Engines

Display Engines

[Option: View All Vehicles]

Get All Vehicles

List of Vehicles

Display Vehicles

Exit Program

[Credentials Invalid]

Access Denied

Exit Program

User — Program — Authentication Module — Menu Module — Engine Module — Vehicle Module

Activities Diagram:

Class Diagram: