**Technical report**

**User histories:**

As a customer, I want to view and search for available vehicles

As a customer, I want to create an account and be able to log in with it

As a customer, I want to see my history of what I have seen

As an administrator, I want to create, modify and delete vehicles

As an administrator, I want to see the changes that other administrators have made

As an administrator, I want that, in addition to creating and being able to log in with my account, I want it to have certain permissions that allow me to perform the actions of only administrators.

**New entities:**

Client

Administrator

**Modify entities:**

Vehicle

CRC new entities

|  |  |
| --- | --- |
| Client | |
| * Login * Create Account * View catalog * View vehicles | * Catalog * Vehicles |

|  |  |
| --- | --- |
| Administrator | |
| * Login * Create Account * View catalog * Modify catalog * Modify vehicles * Delete vehicles * Create vehicles * View vehicles | * Catalog * Vehicles |

**Technic information**

The UML diagram is in the PDF in the carpet

To optimize the memory use of this program, the use of the flyweight pattern was proposed, since this allows us to verify if there are objects with the same characteristics so as not to repeat them in the case of engines, in the case of vehicles in addition to implementing this pattern, the factory pattern was added, in order to simplify the way of creating a vehicle for the administrator.

In the case of user creation, it was decided to implement the singleton for the adminUsers class, in order to centralize user management, the factory was used to create new users in their specific classes, each one, in addition It was proposed to implement the proxy pattern, since through it we can record what each user is doing through the methods common to each other and using the proxy as an intermediary.