

**ONLINE CARS SELLING SYSTEM**

**Software Design Specification**

– Hanoi, February 2023 –

Record of changeS

|  |  |  |  |
| --- | --- | --- | --- |
| Date | A\* M, D | In charge | Change Description |
| 01/02/2023 | A\* | HungNB | Add database design, class diagram and sequence diagram for login |
| 05/02/2023 | A\* | NamVT | Add code package |
| 9/2/2022 | M | HungHM | Modified code package |
| 13/2/2022 | M | DatNA | Modified SQL Database |
| 15/2/2022 | A\* | ManhNM | Add CRUD Product Function |
| 23/2/2022 | A\* | HungNB | Bonus View List, Search , View Details |
| 28/2 | A\* | DatNA | Add Update Profile |
|  |  |  |  |
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|  |  |  |  |
|  |  |  |  |

\*A - Added M - Modified D - Deleted

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a. Class Diagram 26

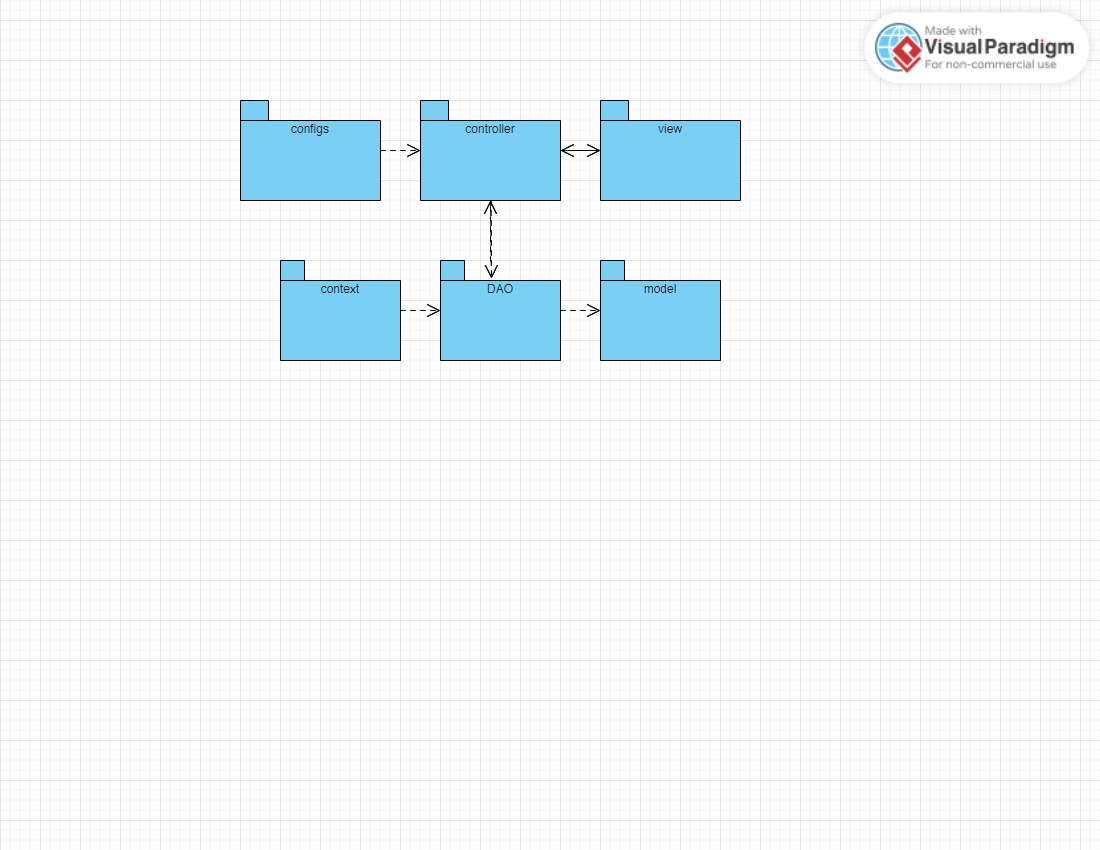
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# I. Overview

## 1. Code Packages

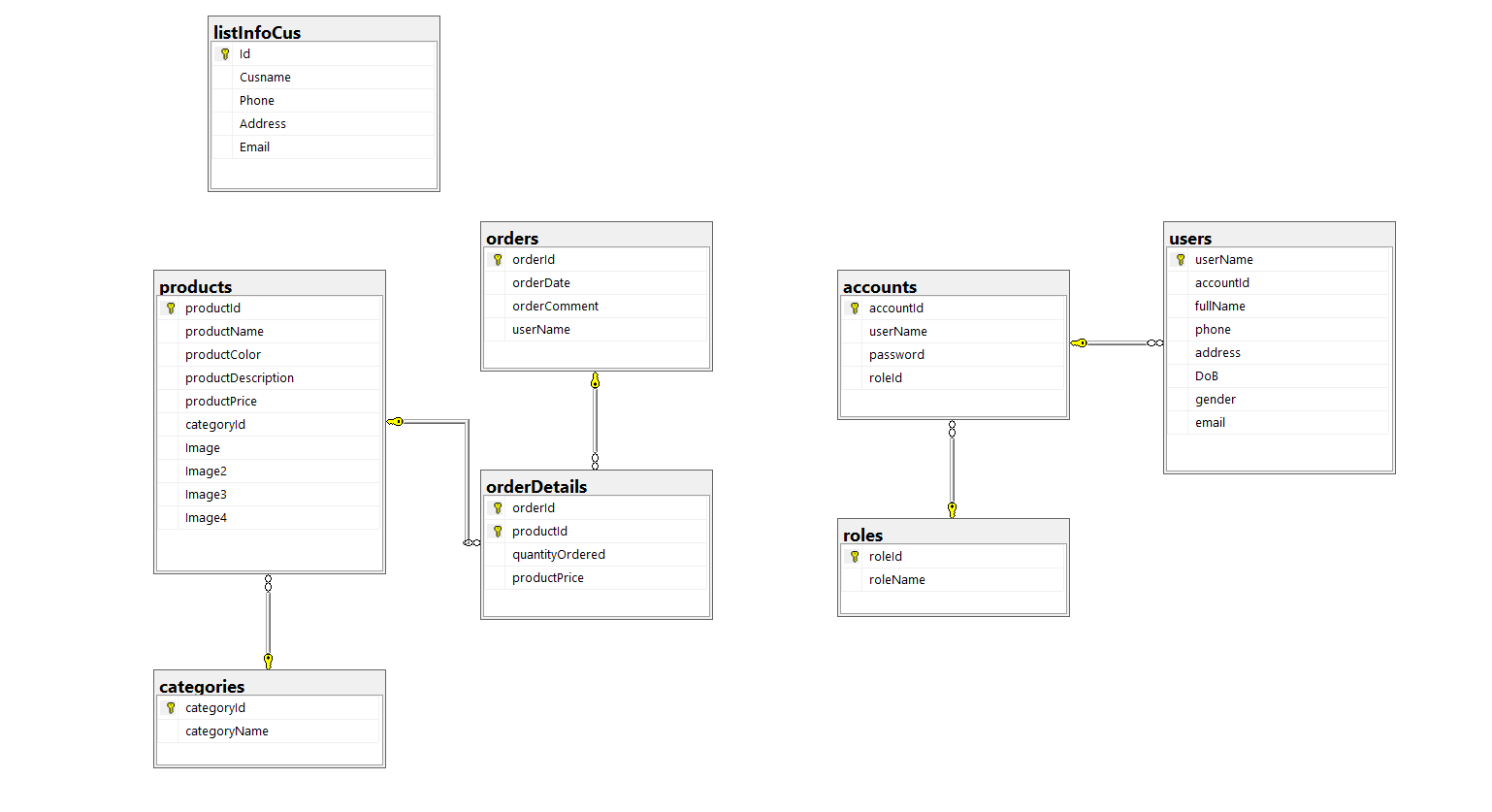


***Package descriptions***

|  |  |  |
| --- | --- | --- |
| **No** | **Package** | **Description** |
| *01* | *controller* | *Acts as a go-between for the service layer and the view, passing on different input requests* |
| *02* | *DAO* | *This component is used to get data directly FROM the database* |
| *03* | *configs* | *This component helps define configuration* |
| *04* | *context* | *This component helps connect database* |
| *05* | *model* | *This component includes interfaces used to receive data retrieved FROM the database and classes used to receive data* |
| *06* | *view* | *This component display view.* |

## 2. Database Design

### a. Database Schema



### b. Table Description

|  |  |  |
| --- | --- | --- |
| **No** | **Table** | **Description** |
| *01* | *user* | *User of the system* |
| *02* | *Accounts* | *The management system of users of admin and manager* |
| *03* | *Roles* | *Account functions* |
| *04* | *Orders* | *Where contains product information: name, date, time, product code* |
| 05 | orderDetails | Contains price, quantity, product code |
| 06 | Products | Products are presented to users in this table |
| 07 | Categories | Where to classify vehicles and choose |
| 08 | listInfoCus | Manage contact information to care and consult with customers |

# II. Code Designs

## Register

### a. Class Diagram

**

### b. Class Specifications

#### RegisterController

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *doPost(HttpServletRequest request, HttpServletResponse response)* | *Get email, password and fullname from register form, check it and add to the database* |

#### DBContext

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *getConnection()* | *To connect with database* |
| *02* | *closeResultSet(ResultSet resultSet)* | *To close result set* |
| *03* | *closePreparedStatement(PreparedStatement preparedStatement)* | *To close prepared statement* |
| *04* | *closeConnection(Connection connection)* | *To close connection* |

#### UserDAO

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *register(String email, String password, String fullName, int genderId, Timestamp createdAt, Timestamp updatedAt, boolean isActive)* | *Interface abstract method register with email, password, and fullName* |
| *02* | *isEmailExisted(String email)* | *Interface abstract method check email is existed in the system or not* |

#### UserDAOImpl

***Class Methods***

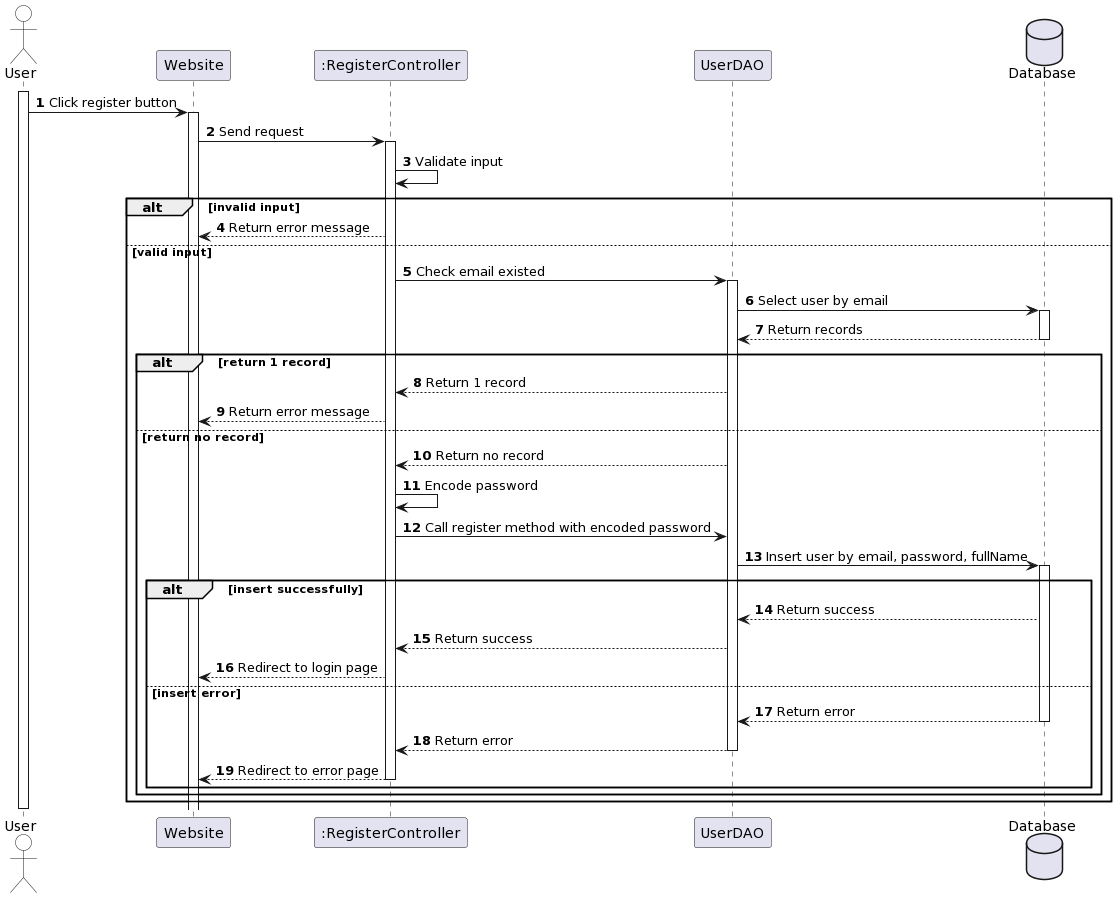
|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *register(String email, String password, String fullName, int genderId, Timestamp createdAt, Timestamp updatedAt, boolean isActive)* | *Register account of the system with email, password and fullName* |
| *02* | *isEmailExisted(String email)* | *Check email is existed in the system or not* |

#### User

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *Constructors* | *Entity initialization* |
| *02* | *Getter* | *Get value of each attributes* |
| *03* | *Setter* | *Set value for each attributes* |

### c. Sequence Diagram(s)



### d. Database Queries

**- SELECT \* FROM [user] WHERE [email] = ?**

**- insert into [user] (email, password, full\_name, gender\_id, created\_at, updated\_at, is\_active) values (?, ?, ?, ?, ?, ?, ?)**

## Login

### a. Class Diagram



### b. Class Specifications

#### LoginController

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *doPost(HttpServletRequest request, HttpServletResponse response)* | *Get email and password from Login Form and compare data in database. If user exist in database with correct password, user will login successfully* |

#### DBContext

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *getConnection()* | *To connect with database* |
| *02* | *closeResultSet(ResultSet resultSet)* | *To close result set* |
| *03* | *closePreparedStatement(PreparedStatement preparedStatement)* | *To close prepared statement* |
| *04* | *closeConnection(Connection connection)* | *To close connection* |

#### UserDAO

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *login(String email, String password)* | *Interface abstract method login with email and password* |

#### UserDAOImpl

***Class Methods***

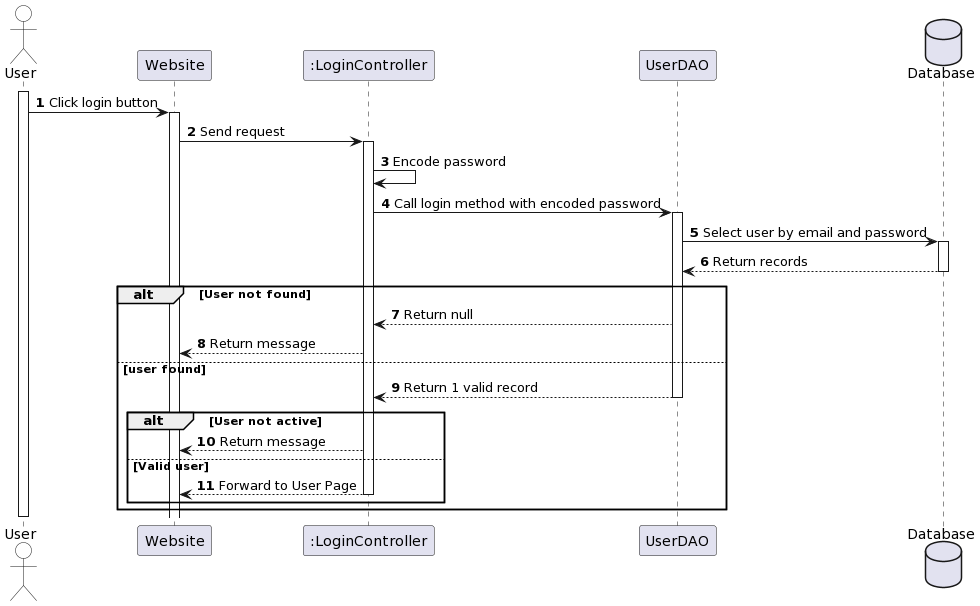
|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *login(String email, String password)* | *Login to the system with email and password* |

#### User

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *Constructors* | *Entity initialization* |
| *02* | *Getter* | *Get value of each attributes* |
| *03* | *Setter* | *Set value for each attributes* |

### c. Sequence Diagram(s)

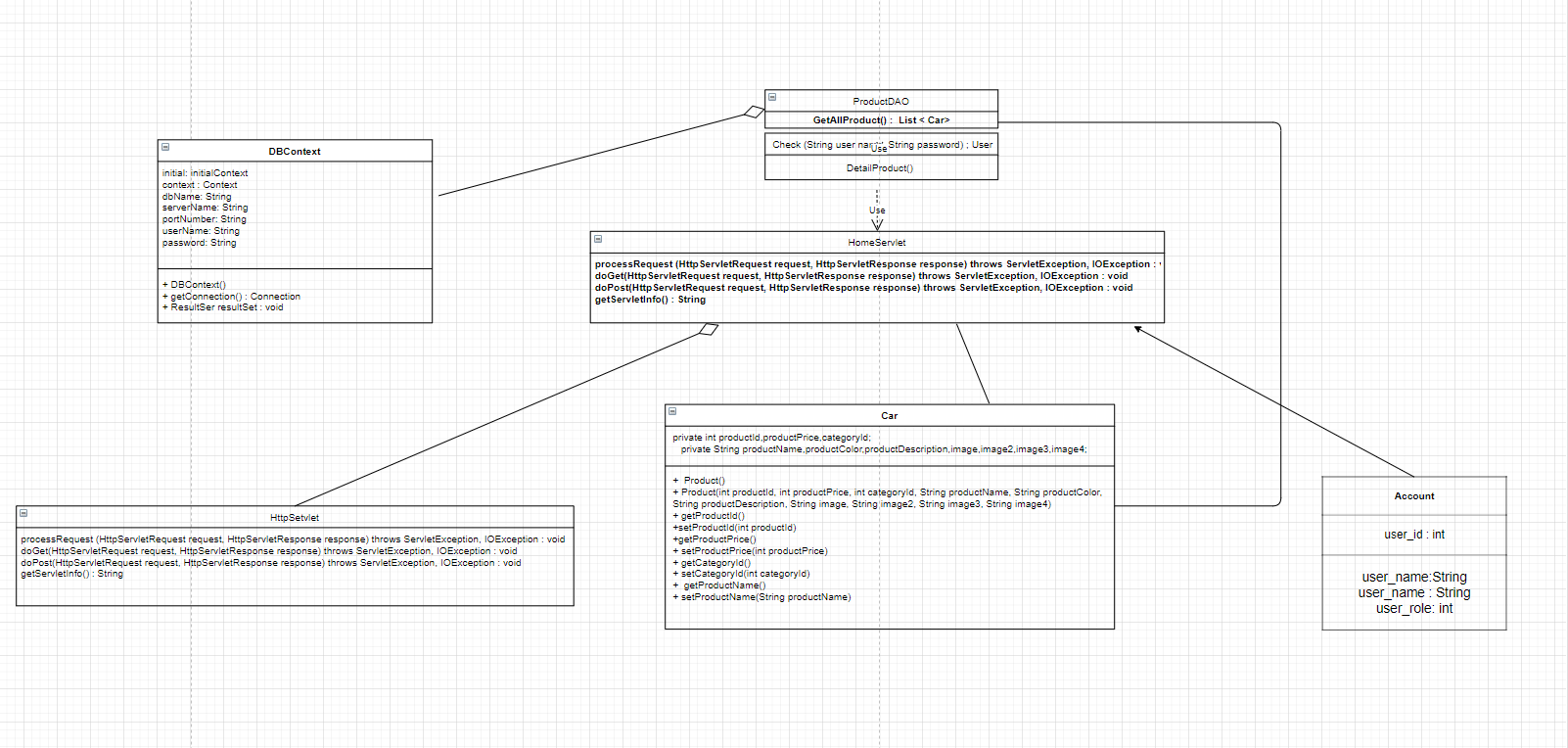


### d. Database Queries

**SELECT \* FROM [user] WHERE [email] = ? and [password] = ?**

## Home Page

### a. Class Diagram



***b, Class Specifications***

**HomeController**

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *doGet(HttpServletRequest request, HttpServletResponse response)* | *List all courser from databse into homepage* |

***DBContext***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *getConnection()* | *To connect with database* |
| *02* | *closeResultSet(ResultSet resultSet)* | *To close result set* |
| *03* | *closePreparedStatement(PreparedStatement preparedStatement)* | *To close prepared statement* |
| *04* | *closeConnection(Connection connection)* | *To close connection* |

***User***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *Constructors* | *Entity initialization* |
| *02* | *Getter* | *Get value of each attributes* |
| *03* | *Setter* | *Set value of each attributes* |

***Enroll***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *Constructors* | *Entity initialization* |
| *02* | *Getter* | *Get value of each attributes* |
| *03* | *Setter* | *Set value of each attributes* |

***Course***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *Constructors* | *Entity initialization* |
| *02* | *Getter* | *Get value of each attributes* |
| *03* | *Setter* | *Set value of each attributes* |

***Chapter***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *Constructors* | *Entity initialization* |
| *02* | *Getter* | *Get value of each attributes* |
| *03* | *Setter* | *Set value of each attributes* |

***DAO***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *GetAllProduct(List<Car>)* | *Get all Car from database* |

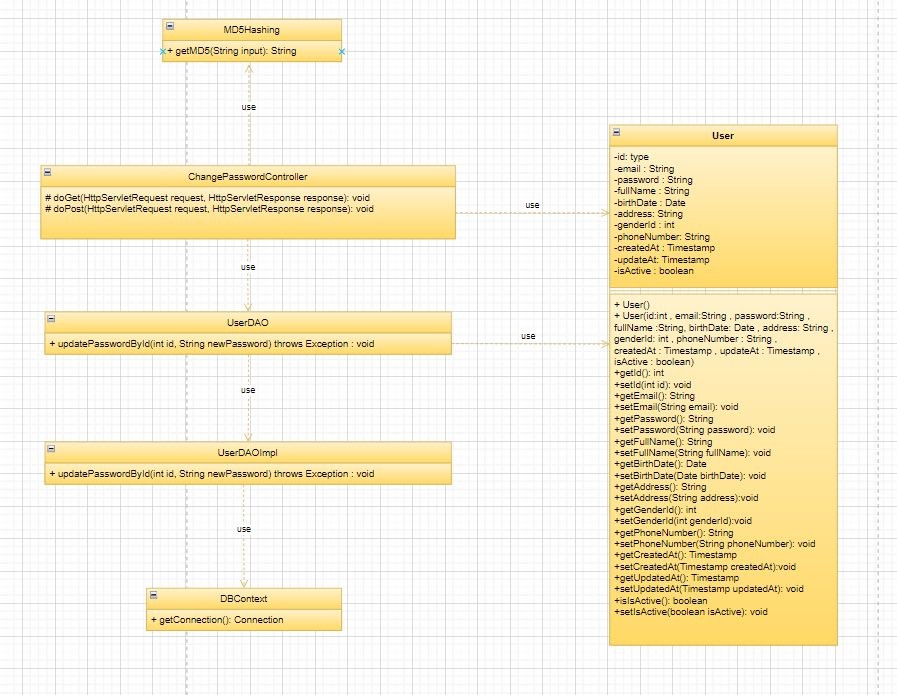
### c. Sequence Diagram(s)

Diagram

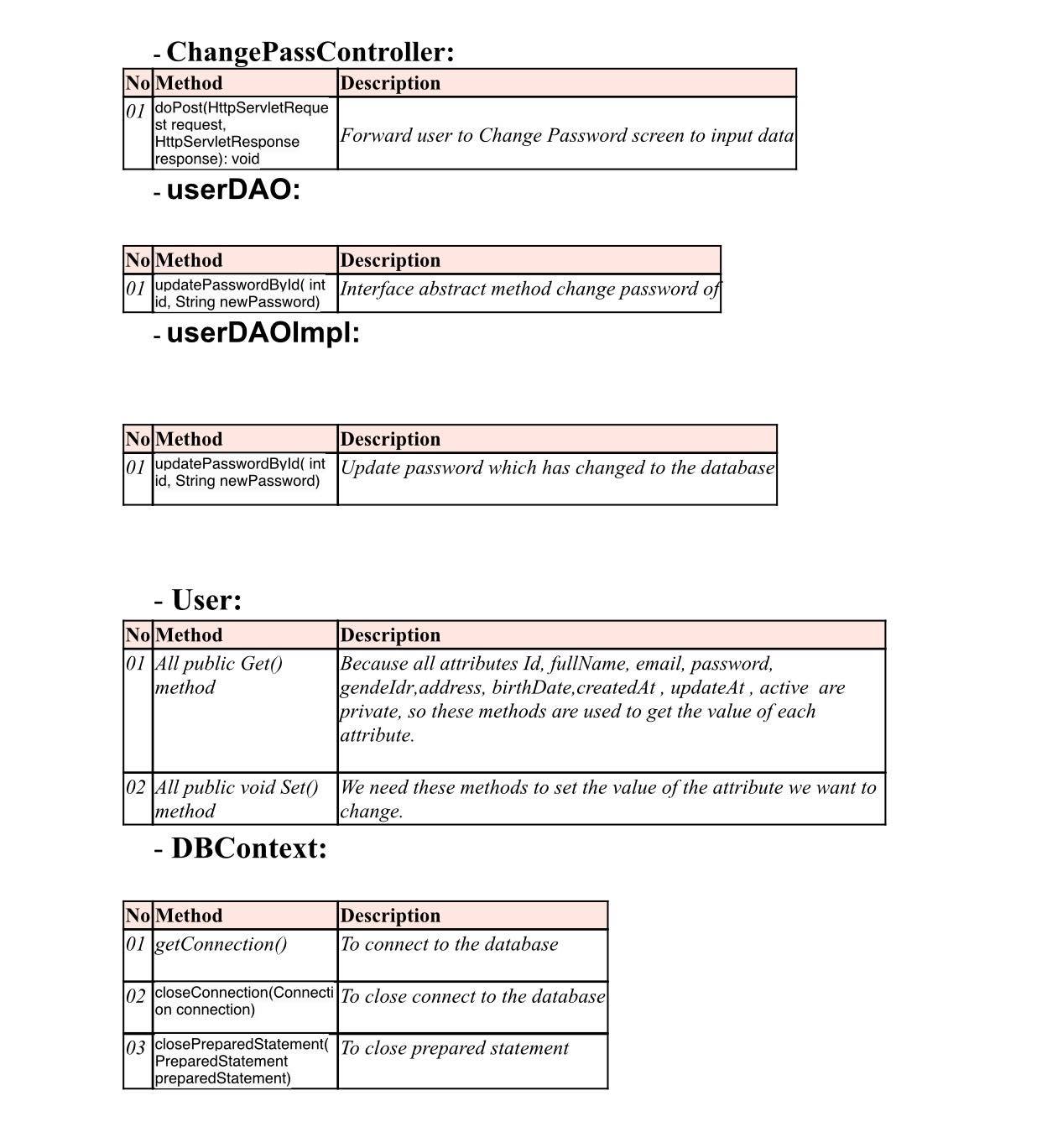
Description automatically generated

## Change Password

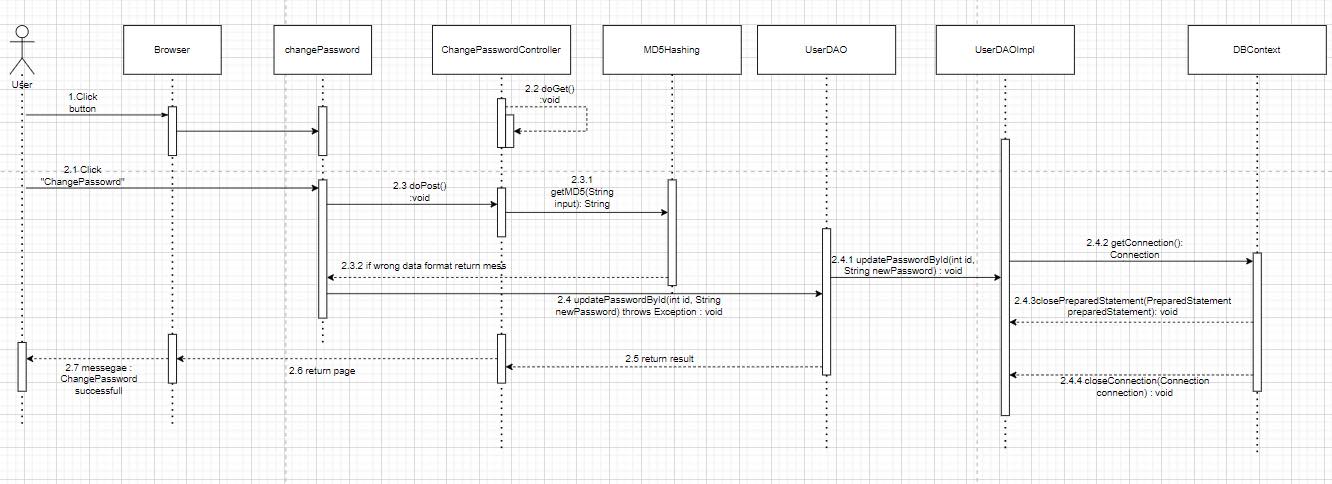
***a. Class Diagram***



***b. Class Specifications***



***c. Sequence Diagram(s)***

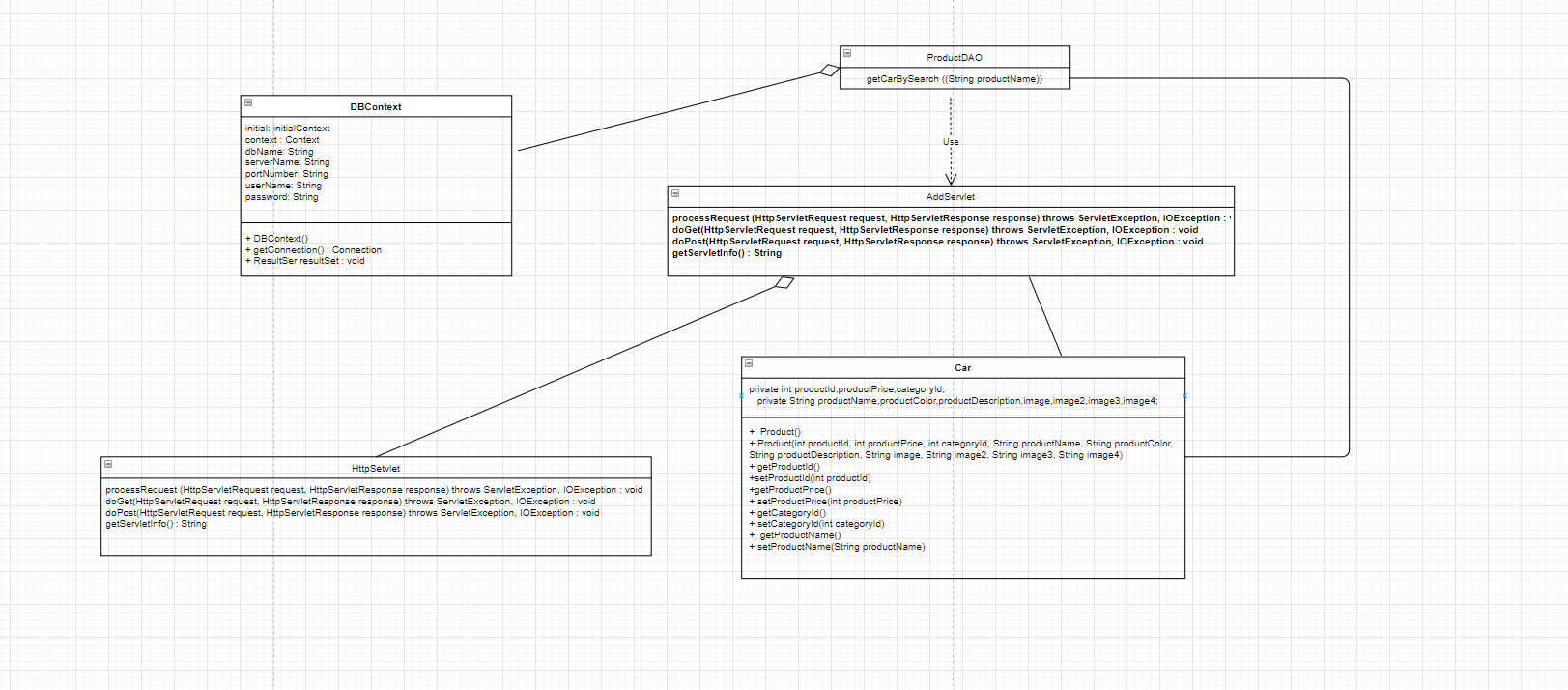


***d. Database Queries***

***SELECT \* FROM WHERE userId = ?;***

## 5.Create Car

### Class Diagram



### b. Class Specifications

#### AddCarController

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *doPost(HttpServletRequest request, HttpServletResponse response)* | *Get id, name, address, email, gender, user id, total debt, created at, updatedAt from created debtor form and create a debtor from it. Then save new debtor to database.* |

#### DBContext

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *getConnection()* | *To connect with database* |
| *02* | *closeResultSet(ResultSet resultSet)* | *To close result set* |
| *03* | *closePreparedStatement(PreparedStatement preparedStatement)* | *To close prepared statement* |
| *04* | *closeConnection(Connection connection)* | *To close connection* |

#### CarDAO

***Class Methods***

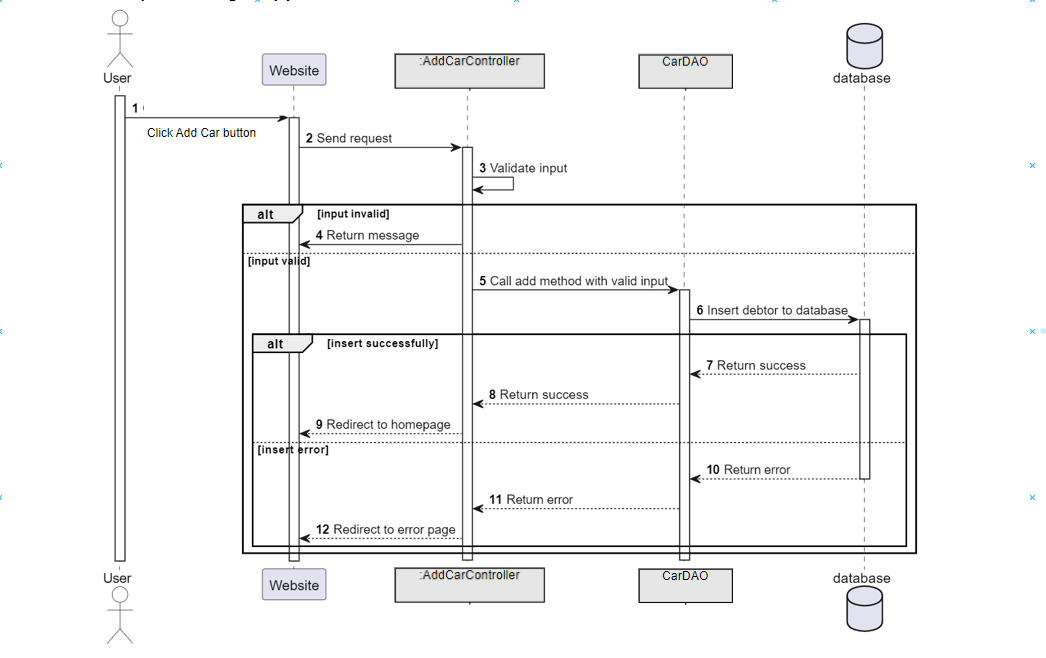
|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *add(String fullName, String address, String email, int genderId, int userId, Timestamp createdAt, Timestamp updatedAt )* | *Interface abstract method add debtor with id, name, address, email, gender, user id, total debt, created at, updated at.* |

Car

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *Constructors* | *Entity initialization* |
| *02* | *Getter* | *Get value of each attributes* |
| *03* | *Setter* | *Set value for each attributes* |

### c. Sequence Diagram(s)

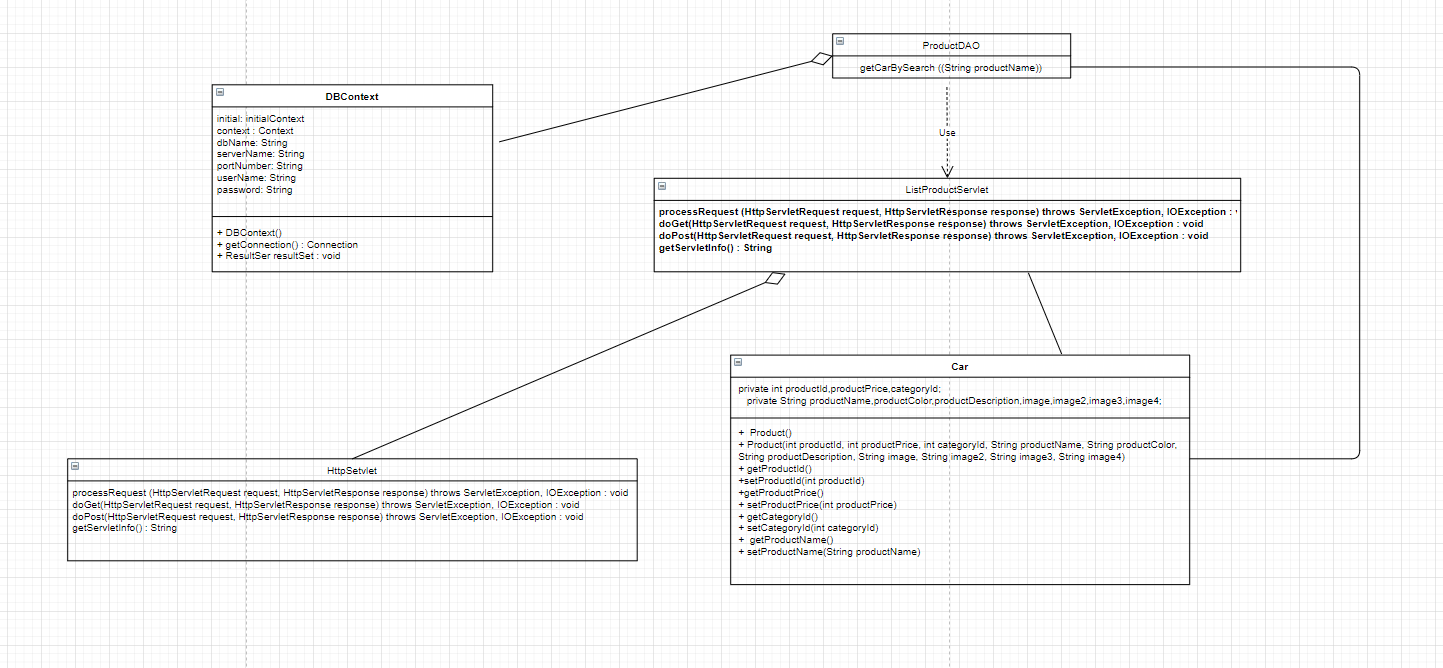


### d. Database Queries

INSERT INTO [products] ([productPrice], [categoryId], [productName], [productColor], [productDescription], [Image]) VALUES (?,?,?,?,?,?);

## 6.View List Car

**a.Class Diagram**

****

### b. Class Specifications

#### ListCarController

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *doPost(HttpServletRequest request, HttpServletResponse response)* | *Get user id from session and return list debtor of user who logged in.* |

#### DBContext

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *getConnection()* | *To connect with database* |
| *02* | *closeResultSet(ResultSet resultSet)* | *To close result set* |
| *03* | *closePreparedStatement(PreparedStatement preparedStatement)* | *To close prepared statement* |
| *04* | *closeConnection(Connection connection)* | *To close connection* |

#### CarDAO

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *getAllDebtorByUserId(int userId)* | *Interface abstract method getAllDebtorByUserId with user id.* |

#### CarDAOImpl

***Class Methods***

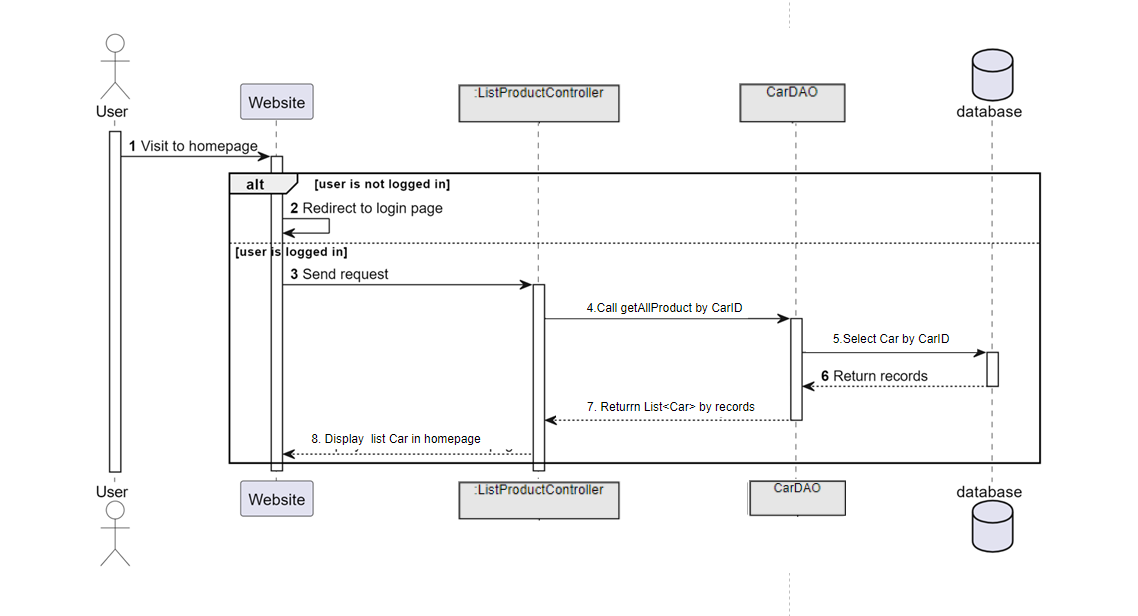
|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *getAllDebtorByUserId(int userId)* | *Return List debtor are created by user with id is user id.* |

***Car***

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *Constructors* | *Entity initialization* |
| *02* | *Getter* | *Get value of each attributes* |
| *03* | *Setter* | *Set value for each attributes* |

### c. Sequence Diagram(s)

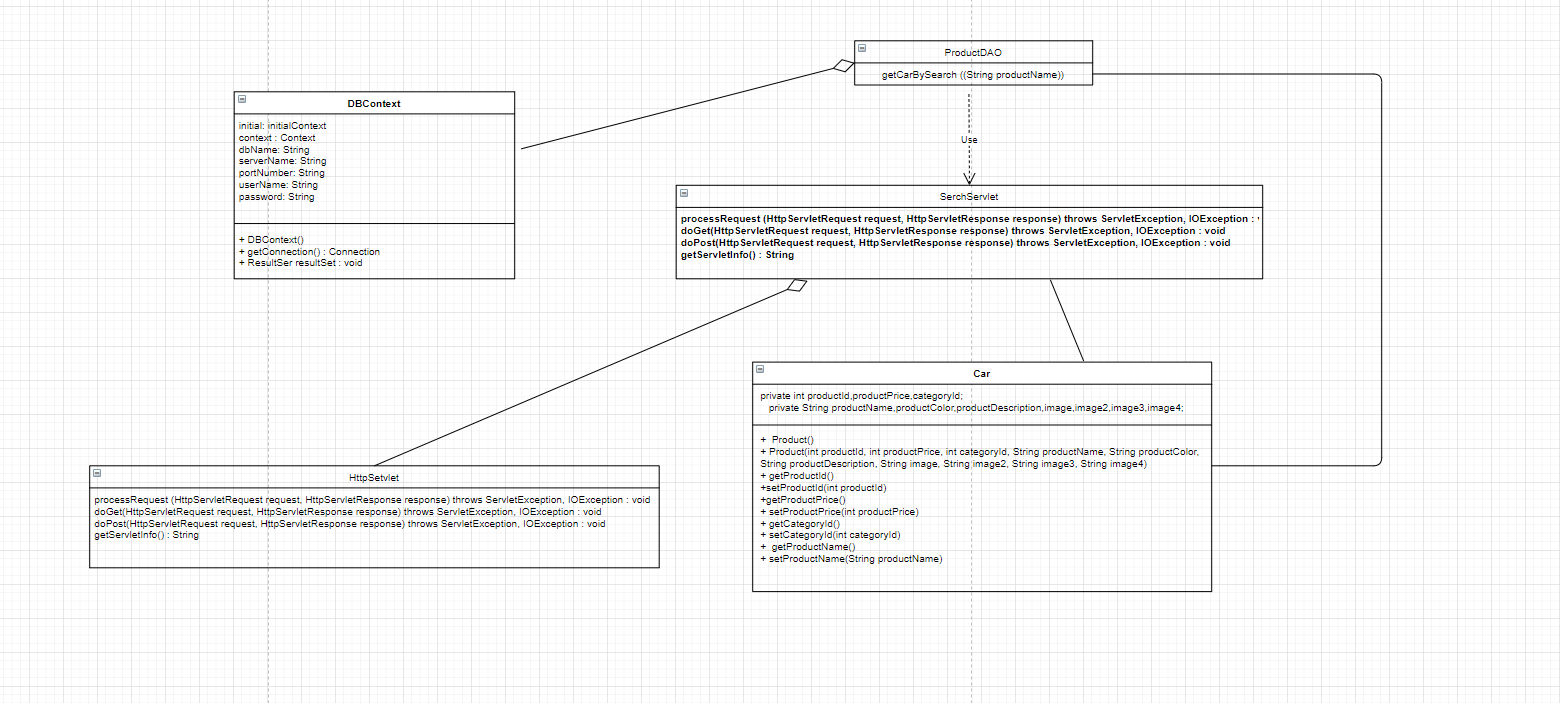


### d. Database Queries

*=> Select \* from products*

## 7.Search Car

### Class Diagram



### 

### b. Class Specifications

#### SearchCarController

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *doPost(HttpServletRequest request, HttpServletResponse response)* | *Get name, address, email, gender, total debt from Search Form. Return all debtors satisfy the condition.* |

#### DBContext

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *getConnection()* | *To connect with database* |
| *02* | *closeResultSet(ResultSet resultSet)* | *To close result set* |
| *03* | *closePreparedStatement(PreparedStatement preparedStatement)* | *To close prepared statement* |
| *04* | *closeConnection(Connection connection)* | *To close connection* |

#### CarDAO

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *getDebtorBySearch(int id, String fullName, String address, String email, int genderId, int userId, float totalDebt )* | *Interface abstract method search debtor with id, name, address, email, gender, user id, total debt.* |

#### CarDAOImpl

***Class Methods***

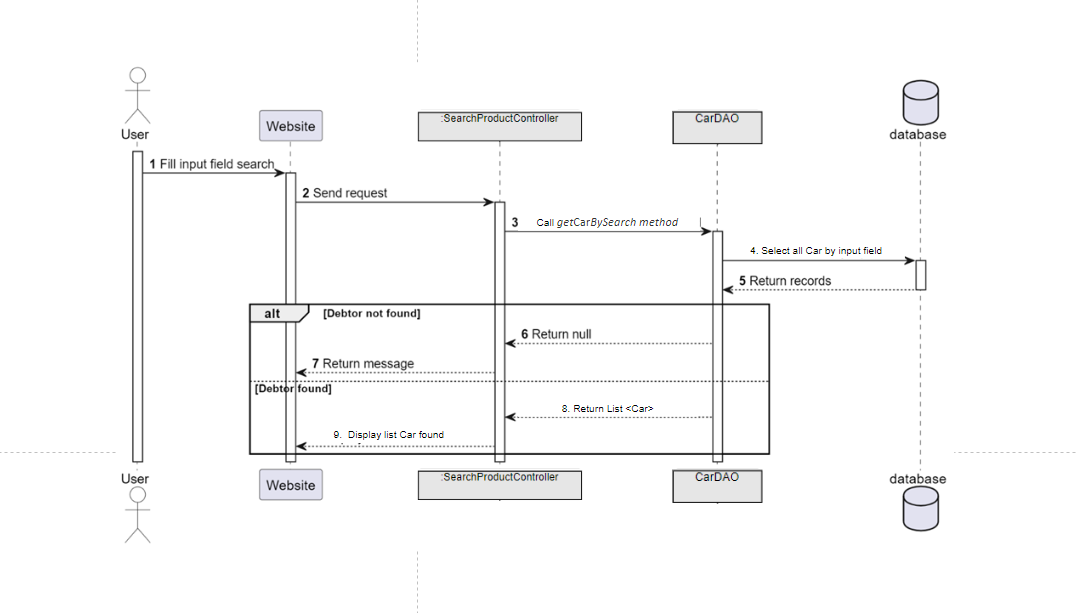
|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *get*Car*BySearch (int id, String fullName, String address, String email, int genderId, int userId, Timestamp createdAt, Timestamp updatedAt )* | *Find* Car *with id, fullName, address, email, genderId, userId, createdAt, updatedAt in database.* |

Car

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *Constructors* | *Entity initialization* |
| *02* | *Getter* | *Get value of each attributes* |
| *03* | *Setter* | *Set value for each attributes* |

### c. Sequence Diagram(s)

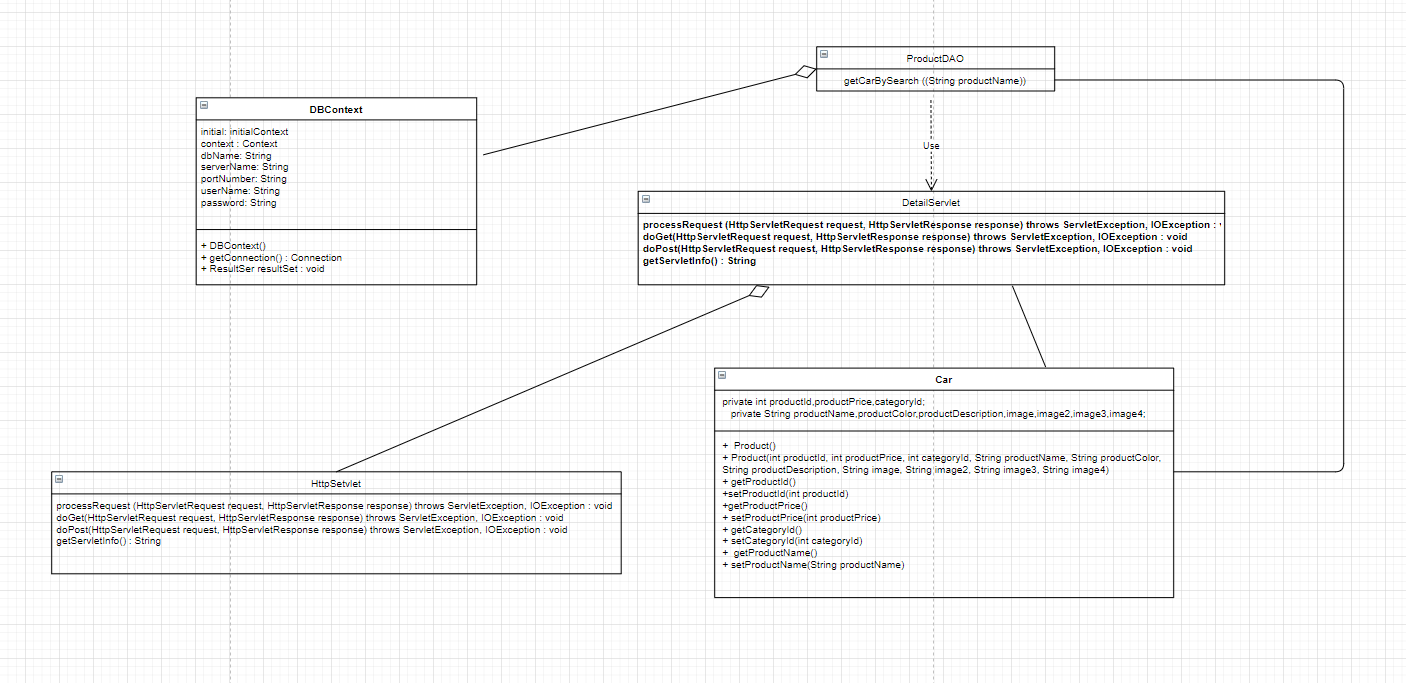


### d. Database Queries

Select \* from products where productName like ? or productColor like ?

## 8.View Detail Car

### a. Class Diagram



### Class Specifications

#### ViewCarController

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *doPost(HttpServletRequest request, HttpServletResponse response)* | *Get id from debtor button and return debtor with that id.* |

#### DBContext

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *getConnection()* | *To connect with database* |
| *02* | *closeResultSet(ResultSet resultSet)* | *To close result set* |
| *03* | *closePreparedStatement(PreparedStatement preparedStatement)* | *To close prepared statement* |
| *04* | *closeConnection(Connection connection)* | *To close connection* |

#### CarDAO

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *getDebtorById(int id)* | *Interface abstract method view debtor with debtor id.* |

#### CarDAOImpl

***Class Methods***

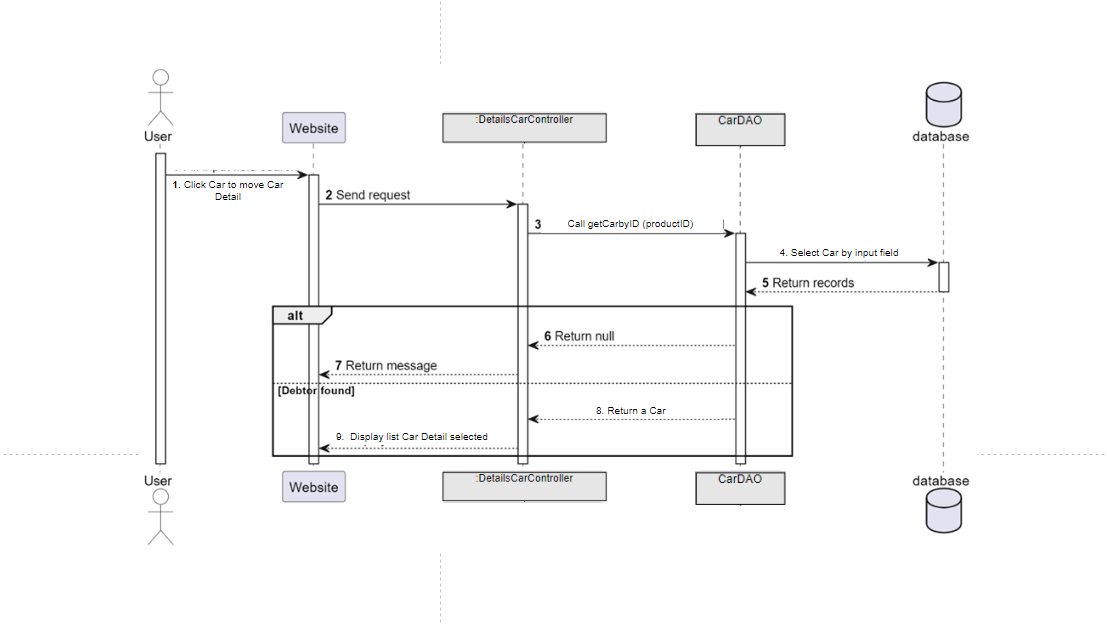
|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *getDebtorById(int id)* | *Find debtor by debtor id.* |

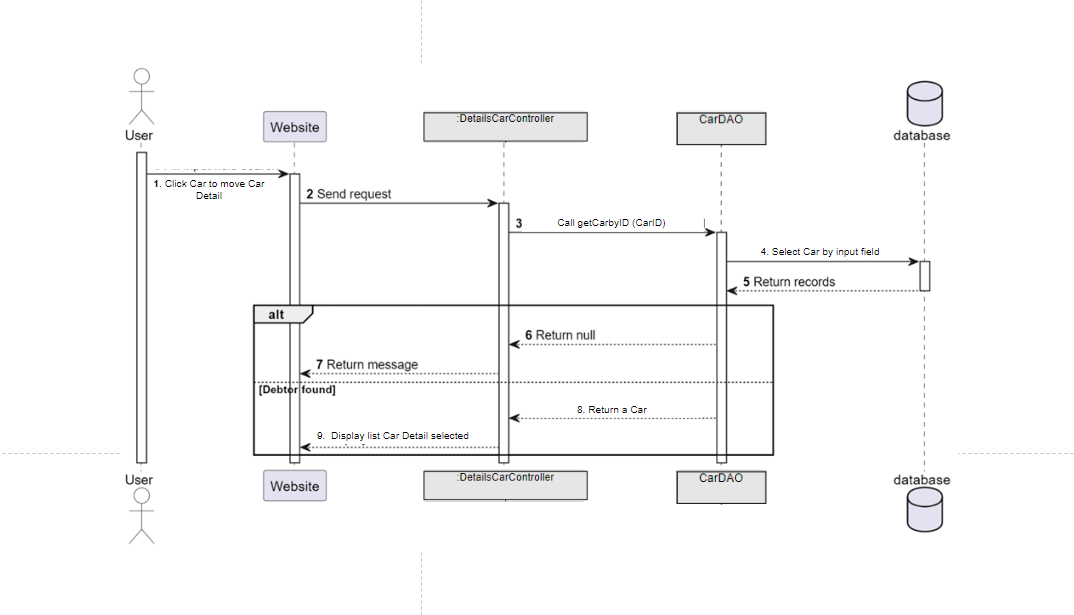
#### Car

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *Constructors* | *Entity initialization* |
| *02* | *Getter* | *Get value of each attributes* |
| *03* | *Setter* | *Set value for each attributes* |

### Sequence Diagram(s)





### d. Database Queries

**SELECT \* FROM [car] where [product\_id] = ?**

## 9. Update Car

### a. Class Diagram

### b. Class Specifications

*UpdateCarController*

*Class Methods*

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *doPost(HttpServletRequest request, HttpServletResponse response)* | *Get data from Update car Form and add it into database* |

#### DBContext

***Class Methods***

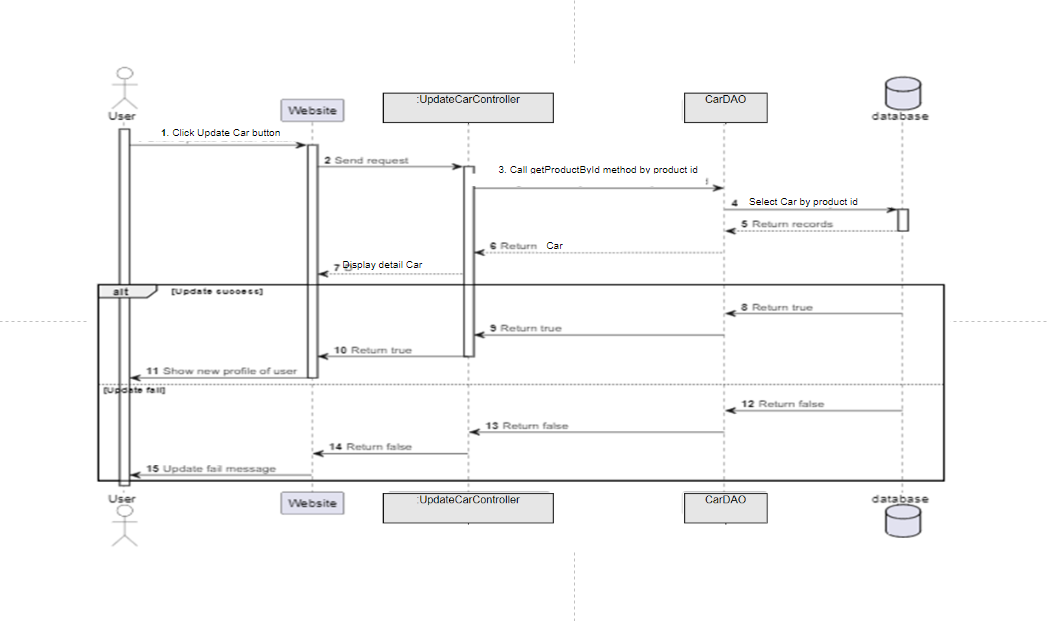
|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *getConnection()* | *To connect with database* |
| *02* | *closeResultSet(ResultSet resultSet)* | *To close result set* |
| *03* | *closePreparedStatement(PreparedStatement preparedStatement)* | *To close prepared statement* |
| *04* | *closeConnection(Connection connection)* | *To close connection* |

#### Car

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *Constructors* | *Entity initialization* |
| *02* | *Getter* | *Get value of each attributes* |
| *03* | *Setter* | *Set value for each attributes* |

### c. Sequence Diagram(s)

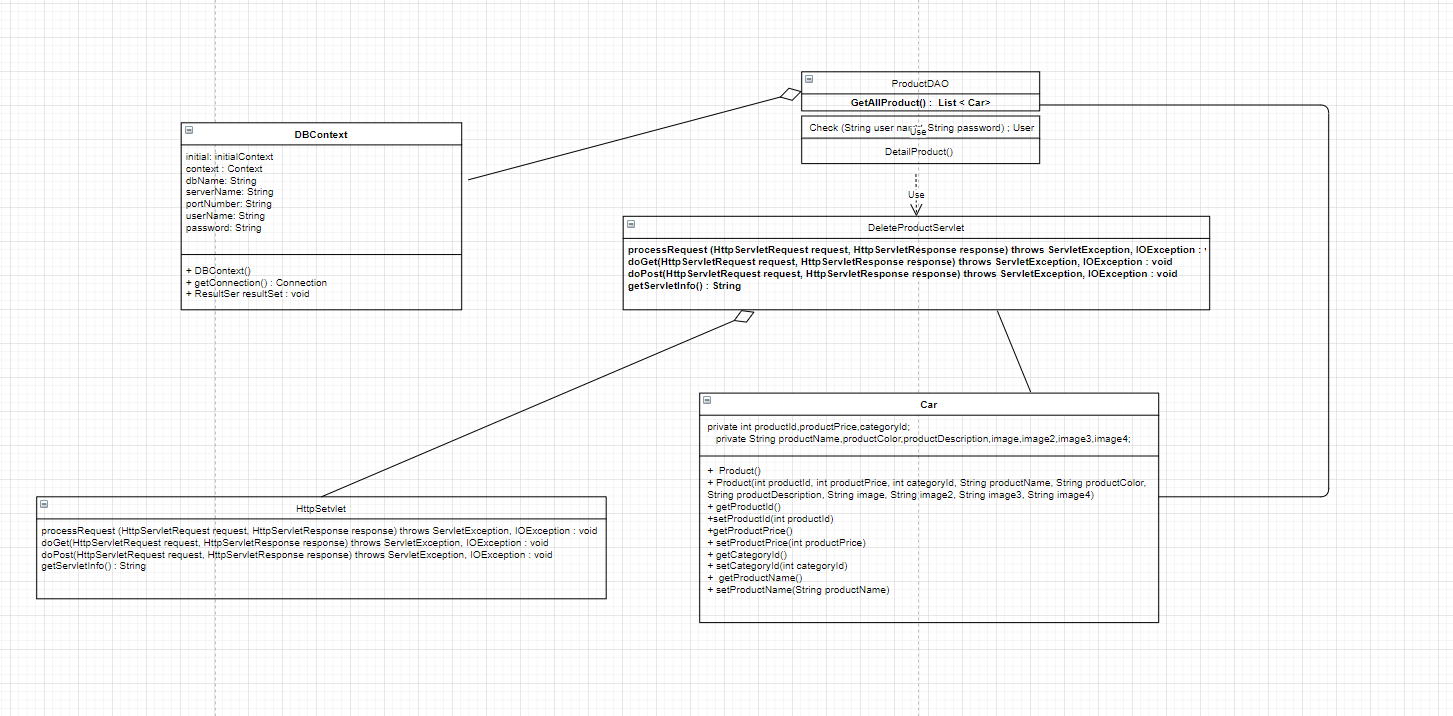


### d. Database Queries

UPDATE [Products] SET [productName] = ?, [productColor] = ?, [productDescription] = ?, [productPrice] = ?, [categoryId] = ?,[Image] = ?, WHERE productId = ?

## 10. Delete Car

### a. Class Diagram



### b. Class Specifications

*DeleteProductController*

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *doPost(HttpServletRequest request, HttpServletResponse response)* | *Get data from Delete Car Form and add it into database* |

#### DBContext

***Class Methods***

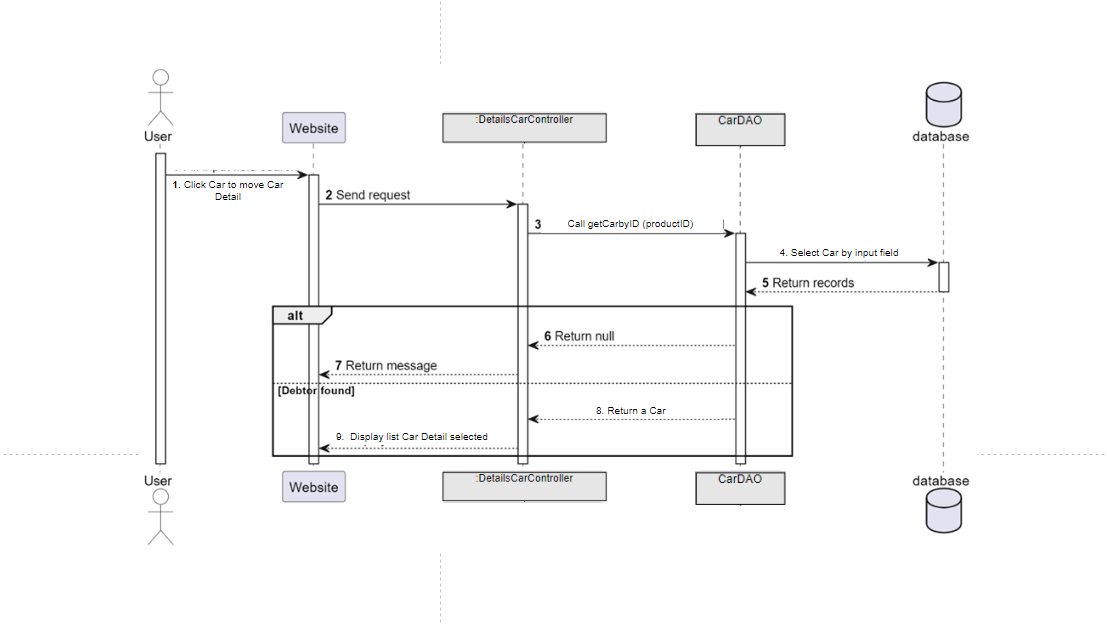
|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *getConnection()* | *To connect with database* |
| *02* | *closeResultSet(ResultSet resultSet)* | *To close result set* |
| *03* | *closePreparedStatement(PreparedStatement preparedStatement)* | *To close prepared statement* |
| *04* | *closeConnection(Connection connection)* | *To close connection* |

#### Car

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *Constructors* | *Entity initialization* |
| *02* | *Getter* | *Get value of each attributes* |
| *03* | *Setter* | *Set value for each attributes* |

### Sequence Diagram(s)



### d. Database Queries

DELETE [product\_id= ?] from Product .