

**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 |
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\*A - Added M - Modified D - Deleted

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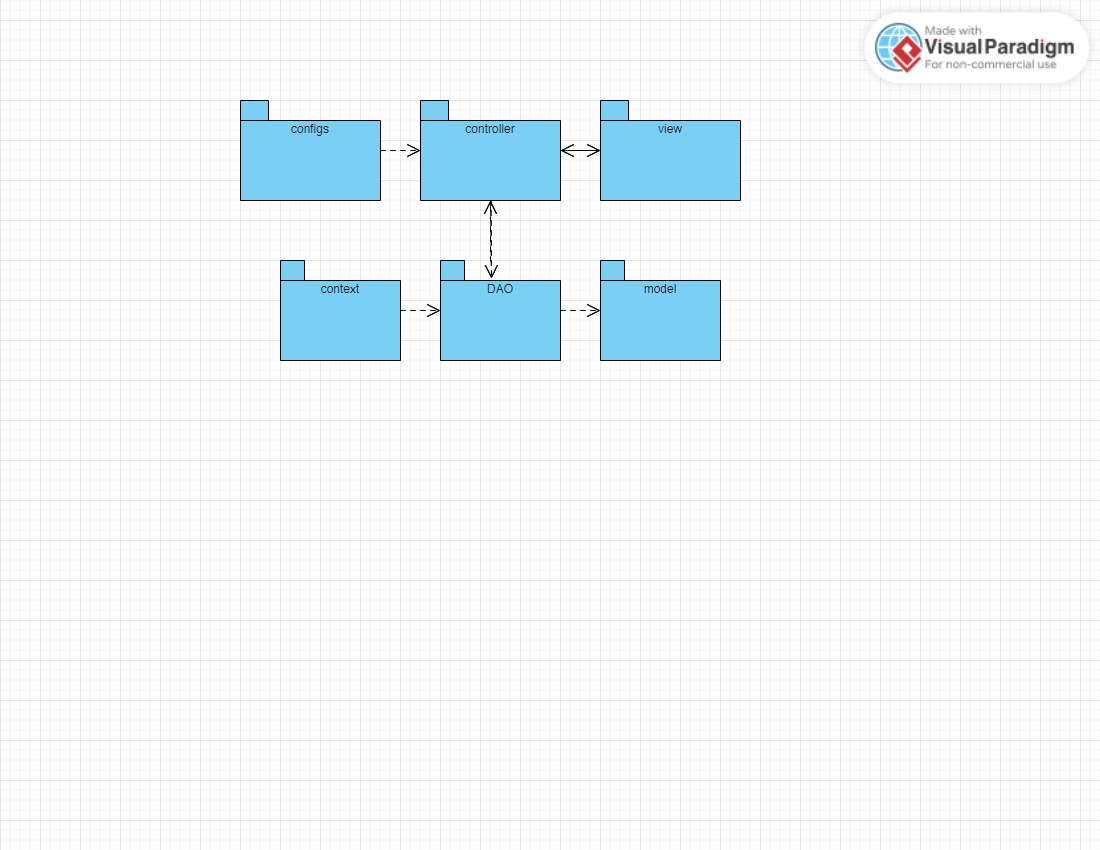
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# I. Overview

## 1. Code Packages

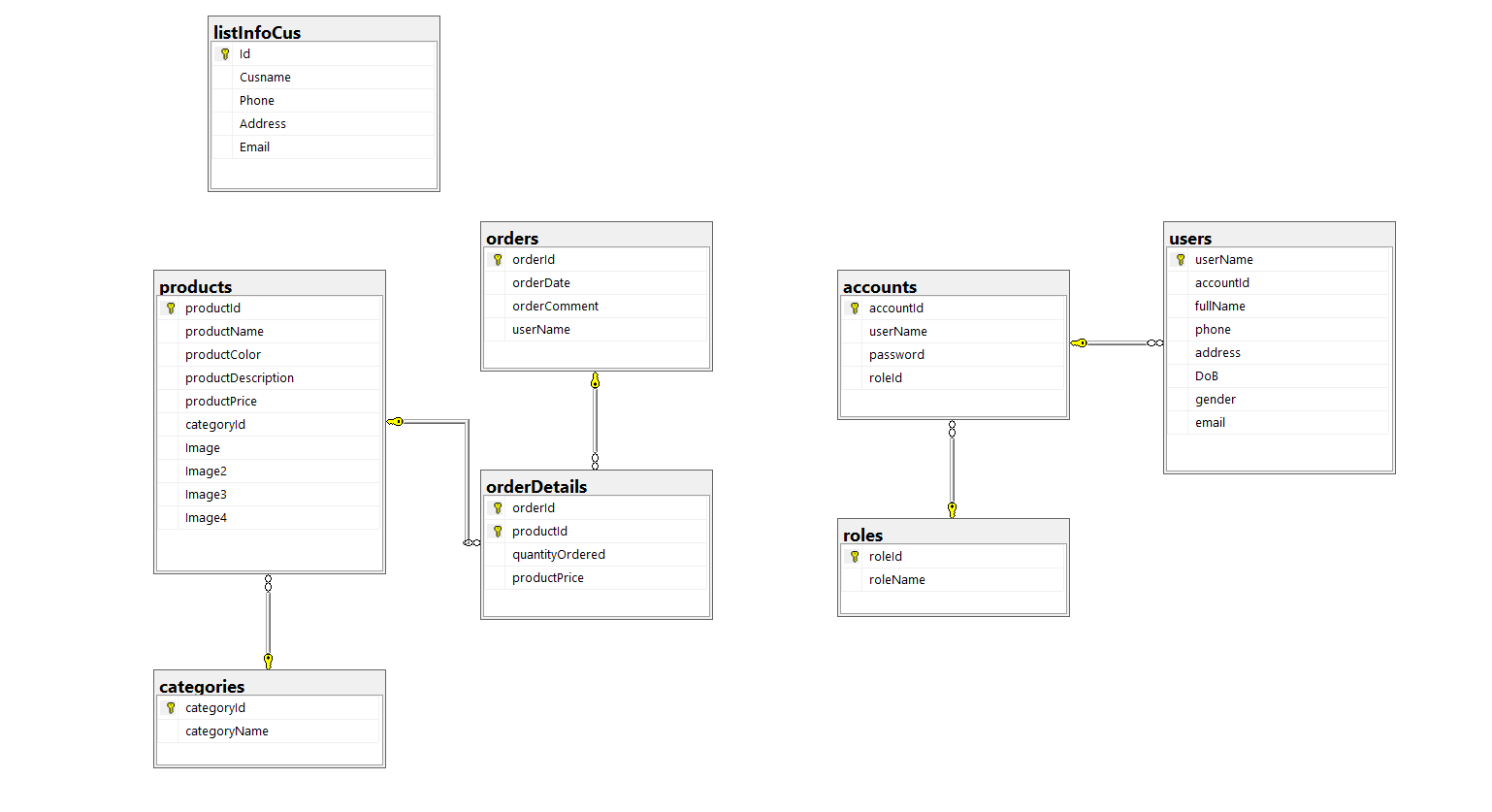


***Package descriptions***

|  |  |  |
| --- | --- | --- |
| **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***

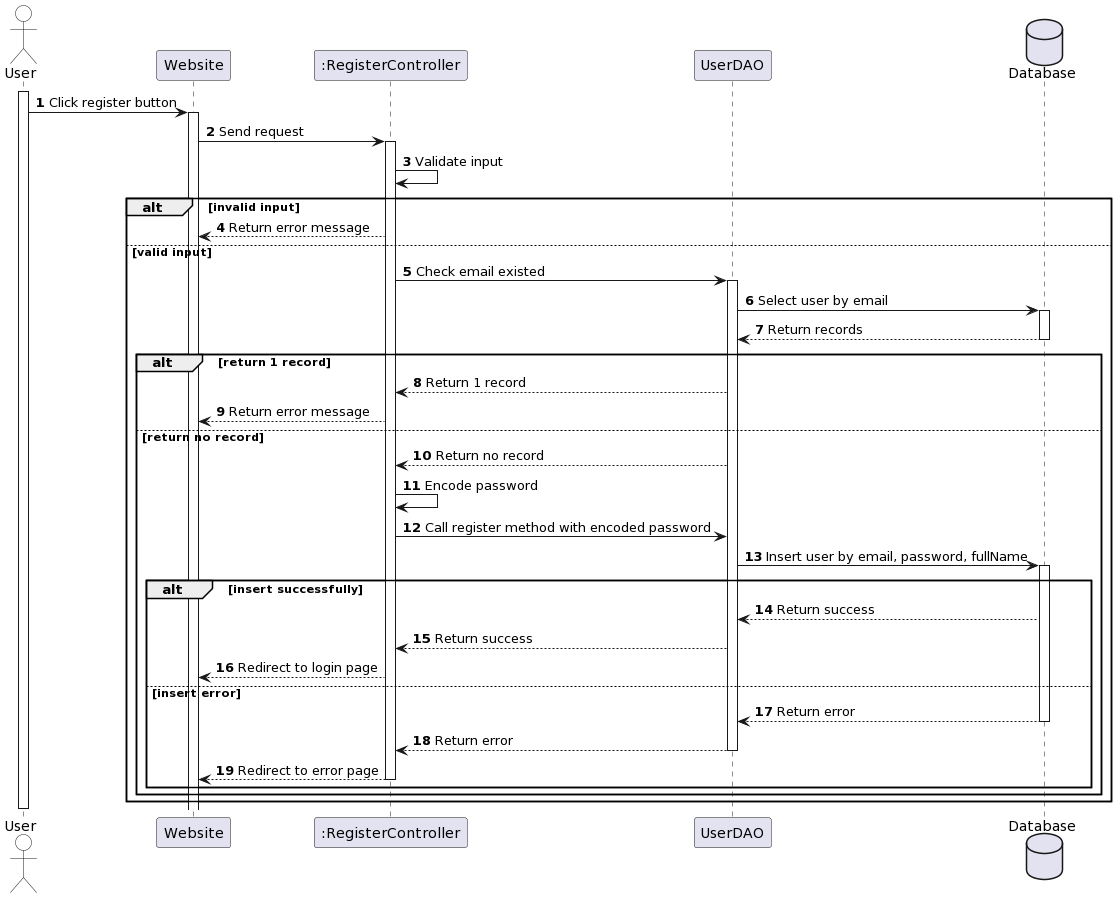
|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *register(String email, String password, String fullName, int genderId, Timestamp createdAt, Timestamp updatedAt, boolean isActive)* | *Register account of the system with email, password and fullName* |
| *02* | *isEmailExisted(String 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***

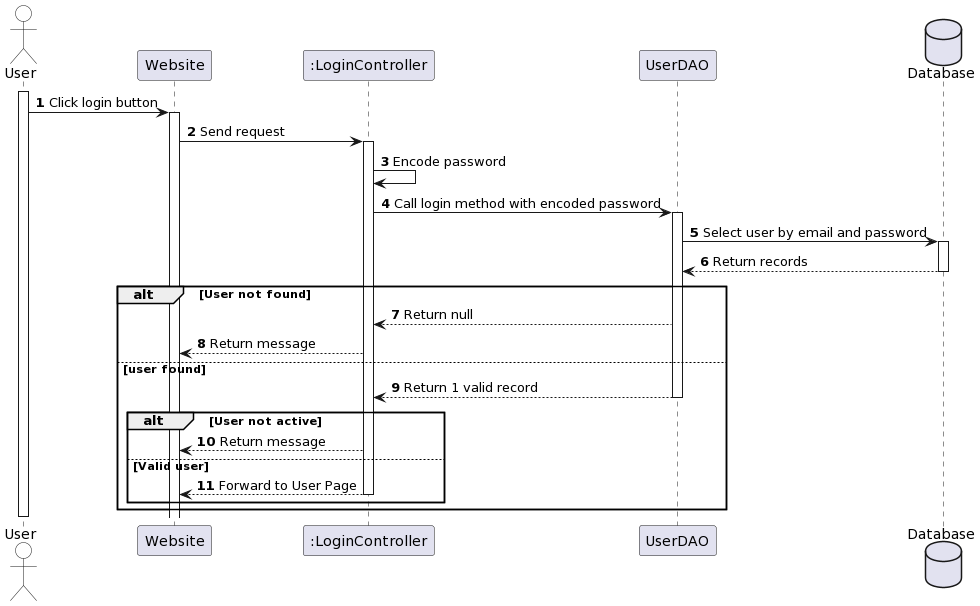
|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *login(String email, String password)* | *Login to the system with email and password* |

#### 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

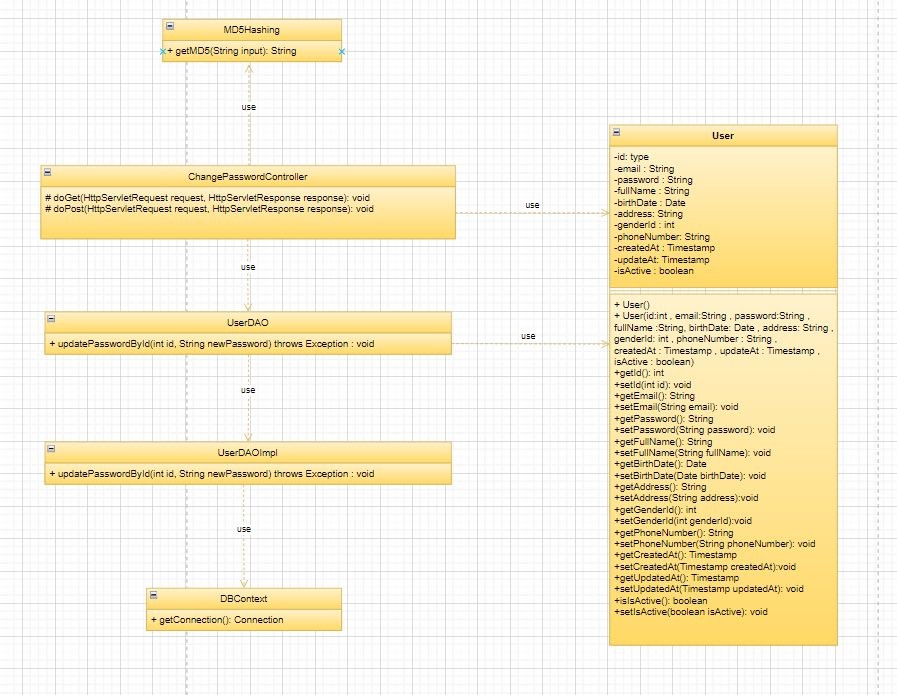
**SELECT \* FROM [user] WHERE [email] = ? and [password] = ?**

## Home Page

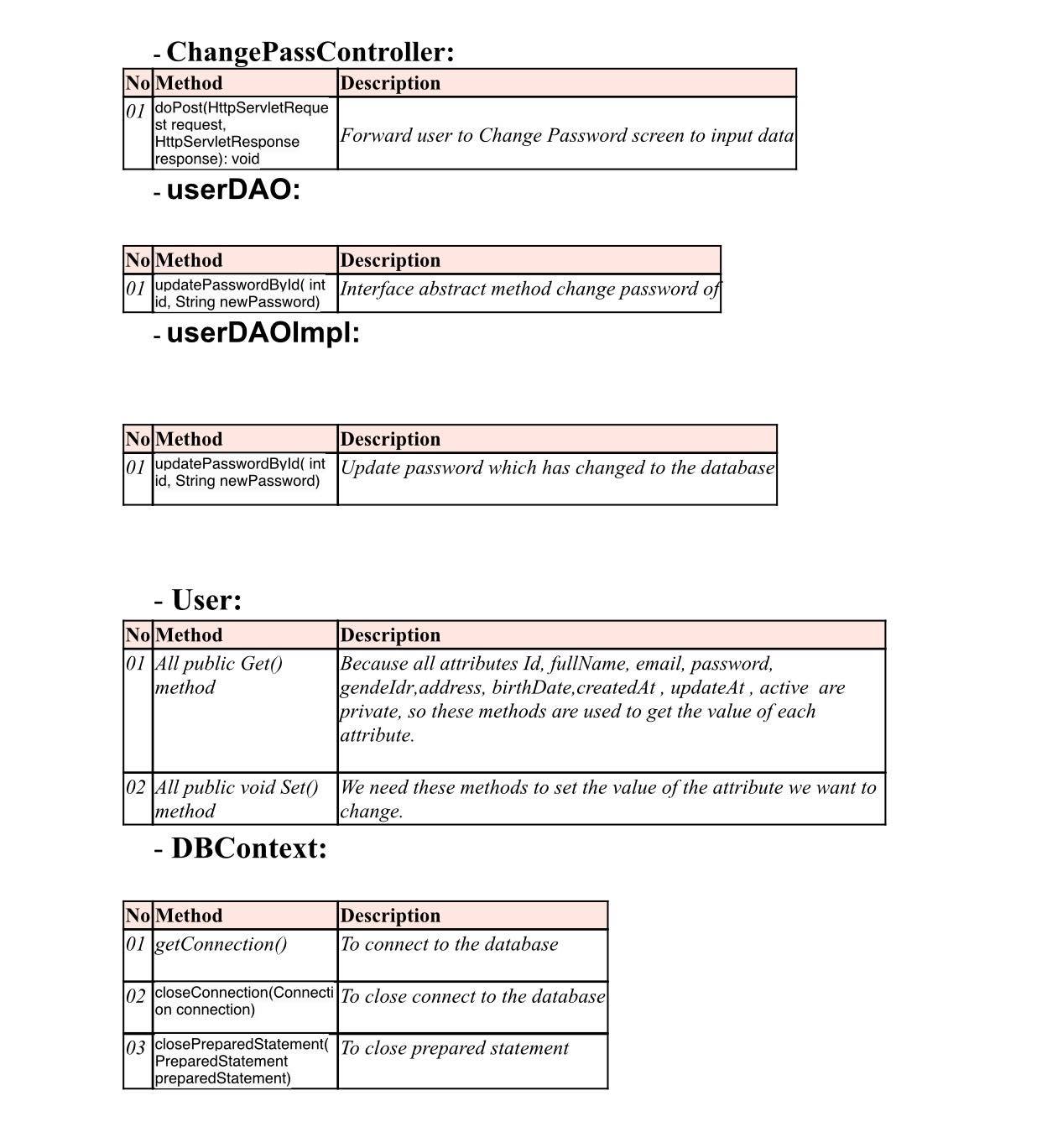
## Forgot Password

## Change Password

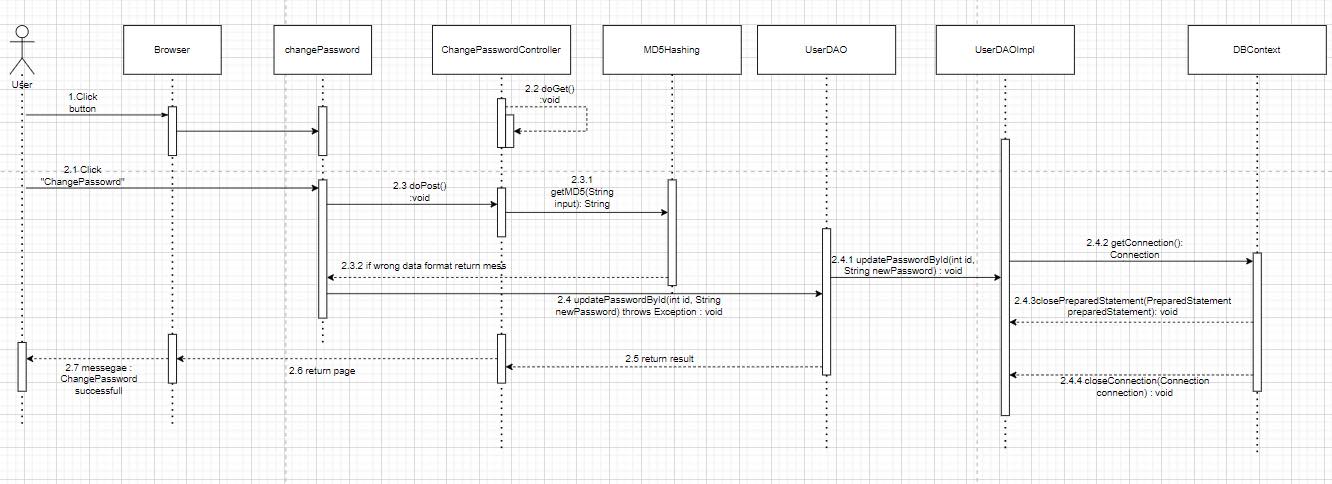
***a. Class Diagram***



***b. Class Specifications***



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

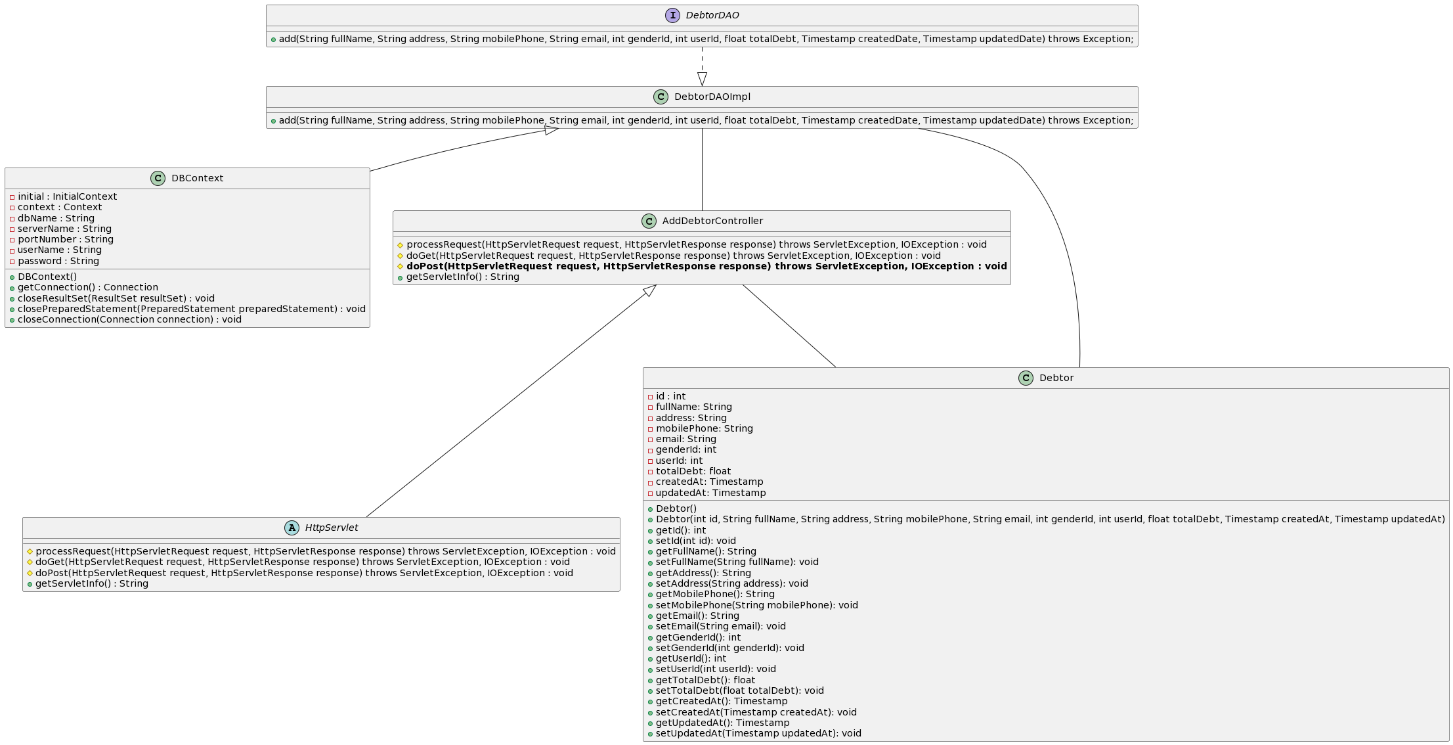


***d. Database Queries***

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

## Create Car

### a. 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.* |

#### DebtorDAOImpl

***Class Methods***

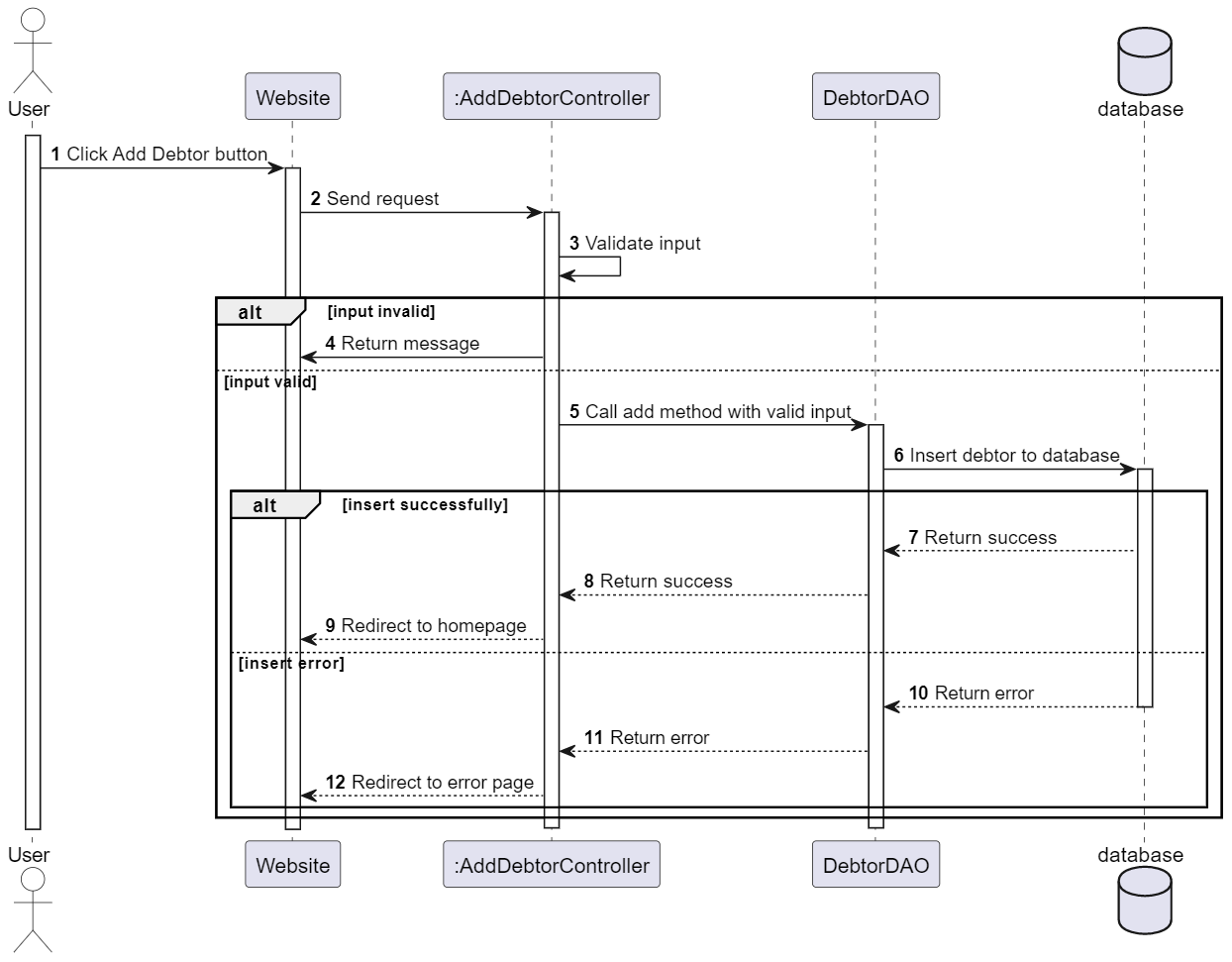
|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *add(String fullName, String address, String email, int genderId, int userId, Timestamp createdAt, Timestamp updatedAt )* | *Add debtor with id, fullName, address, email, genderId, userId, createdAt, updatedAt to database.* |

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)

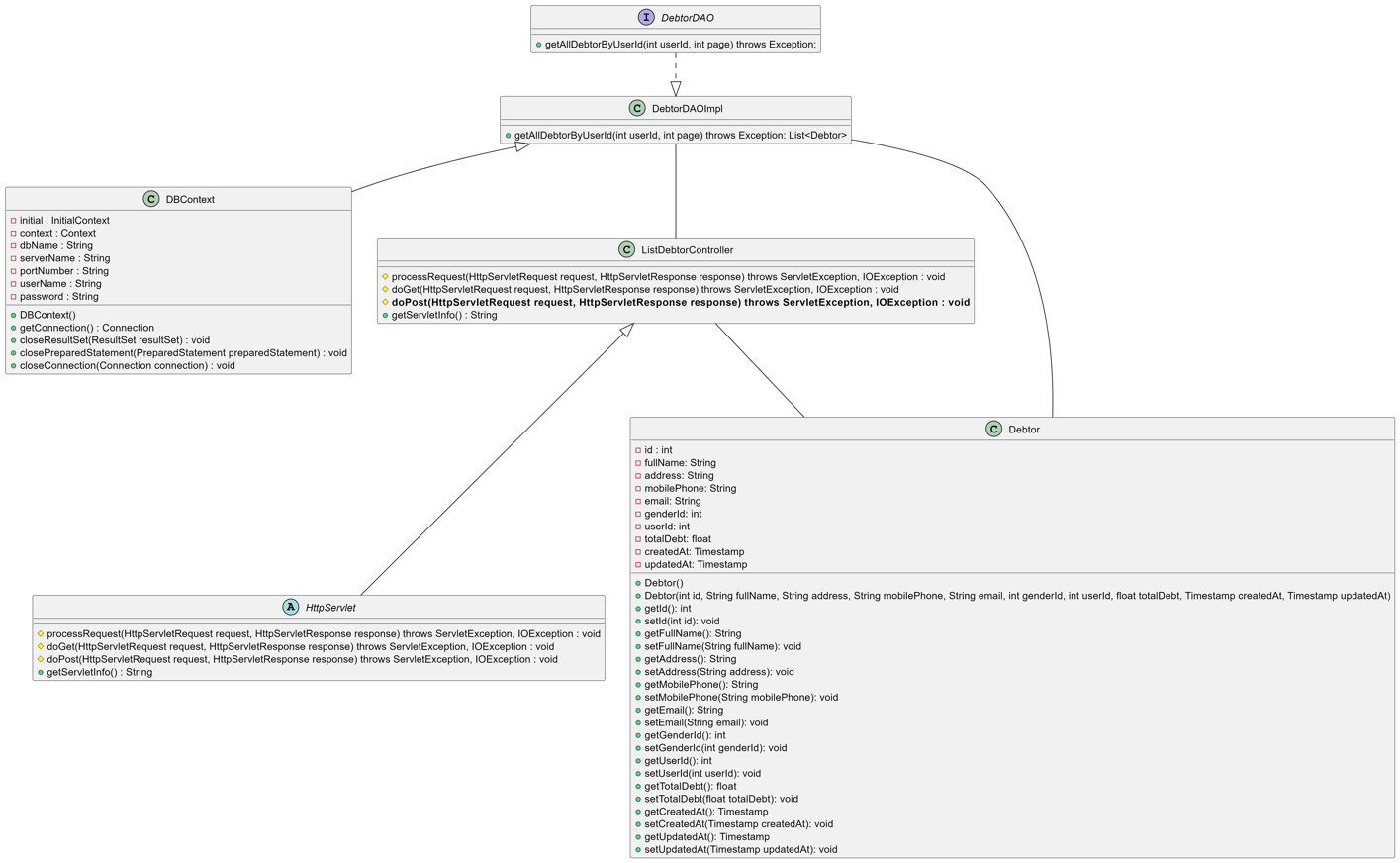


### d. Database Queries

**INSERT INTO [debtor] ([full\_name], [address] ,[mobile\_phone] ,[email] ,[gender\_id] ,[total\_debt] ,[created\_at] ,[updated\_at] ,[user\_id]) VALUES (?, ?, ? ,? ,? ,? ,? ,?, ?)**

## 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***

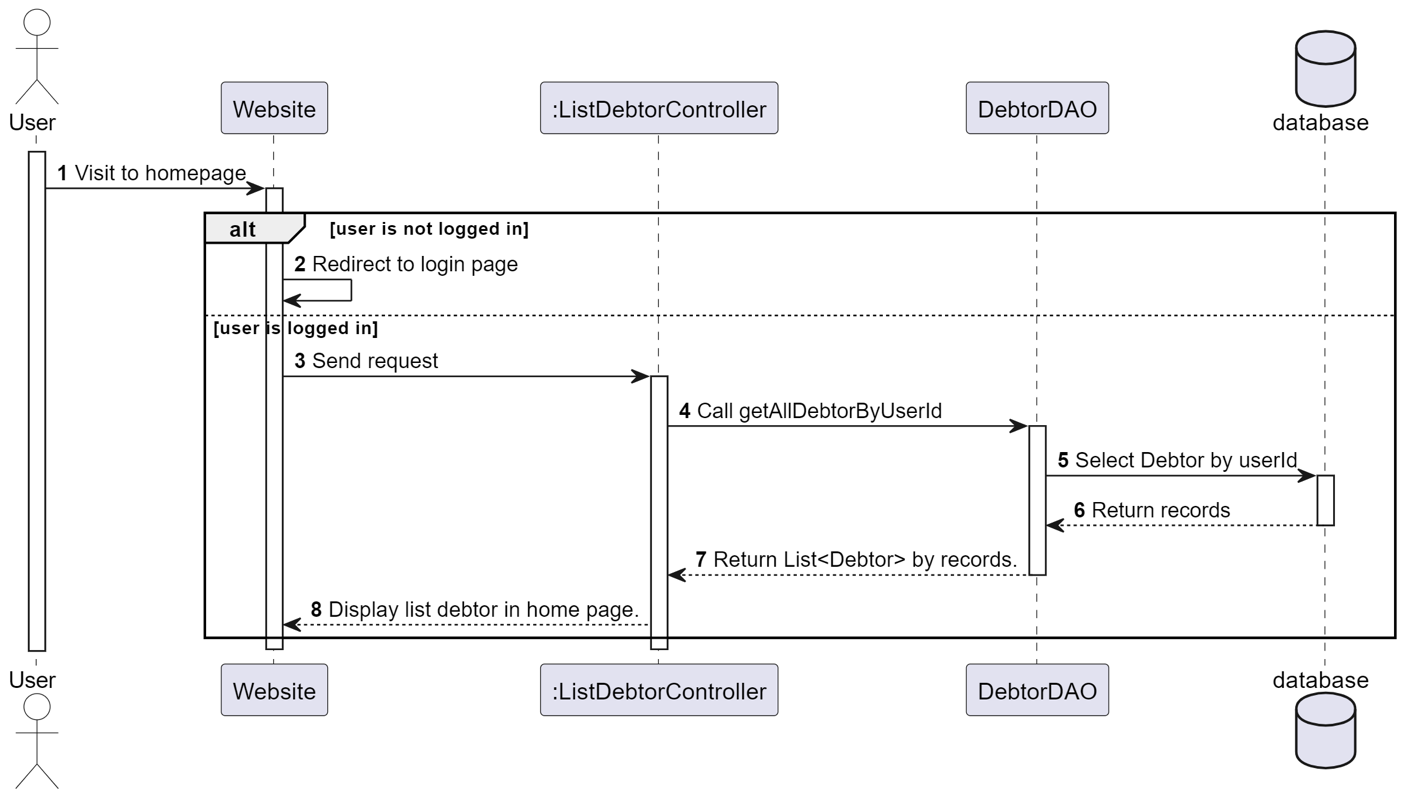
|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *getAllDebtorByUserId(int userId)* | *Return List debtor are created by user with id is user id.* |

***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)

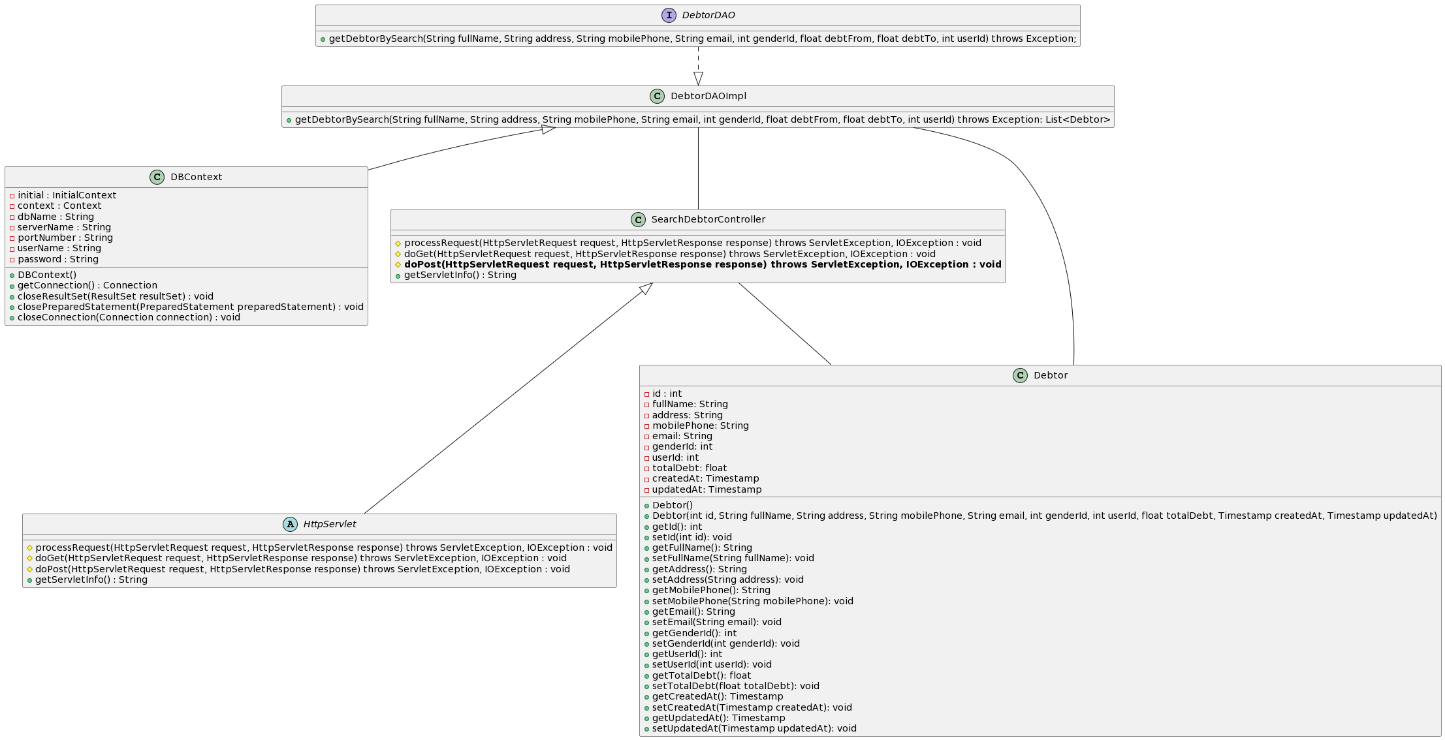


### d. Database Queries

**SELECT \* FROM [Car] WHERE userId = ?;**

## Search Car

### a. 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***

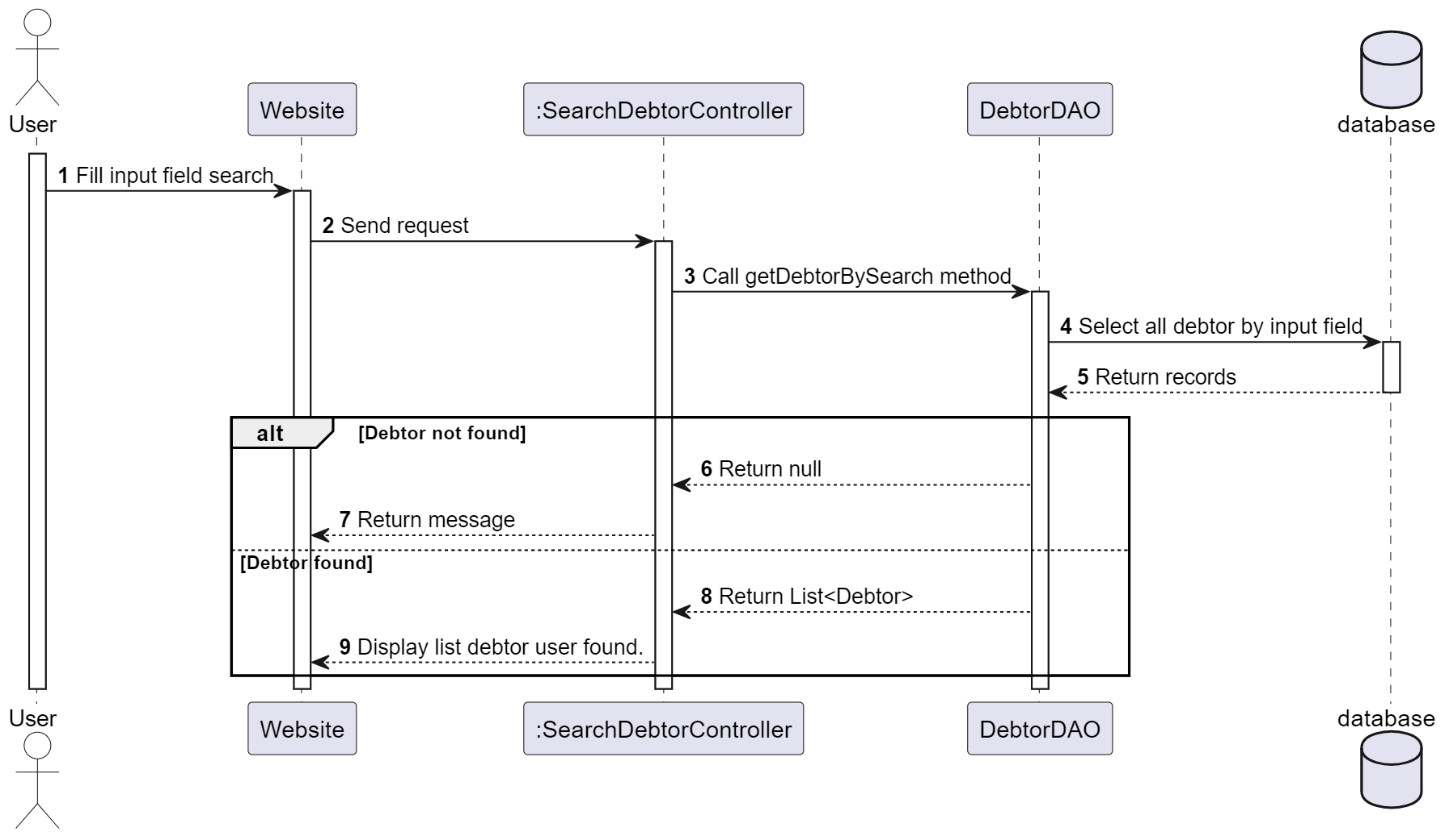
|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *get*Car*BySearch (int id, String fullName, String address, String email, int genderId, int userId, Timestamp createdAt, Timestamp updatedAt )* | *Find* Car *with id, fullName, address, email, genderId, userId, createdAt,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

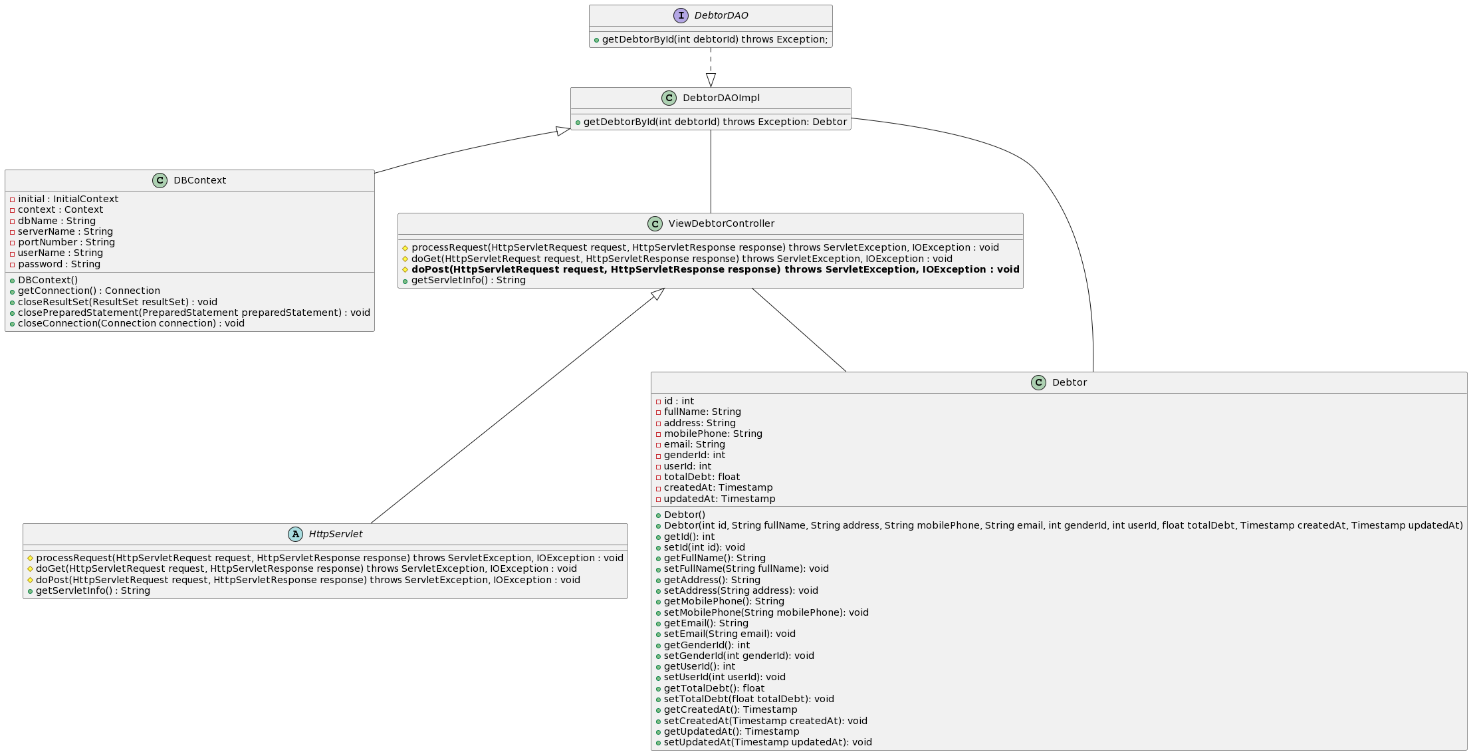


### d. Database Queries

SELECT \* FROM [debtor] WHERE user\_id = ? AND full\_name like ? AND address like ? AND mobile\_phone like ? AND email like ? AND total\_debt between ? and ?

## View Detail Car

### a. Class Diagram



### b. 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***

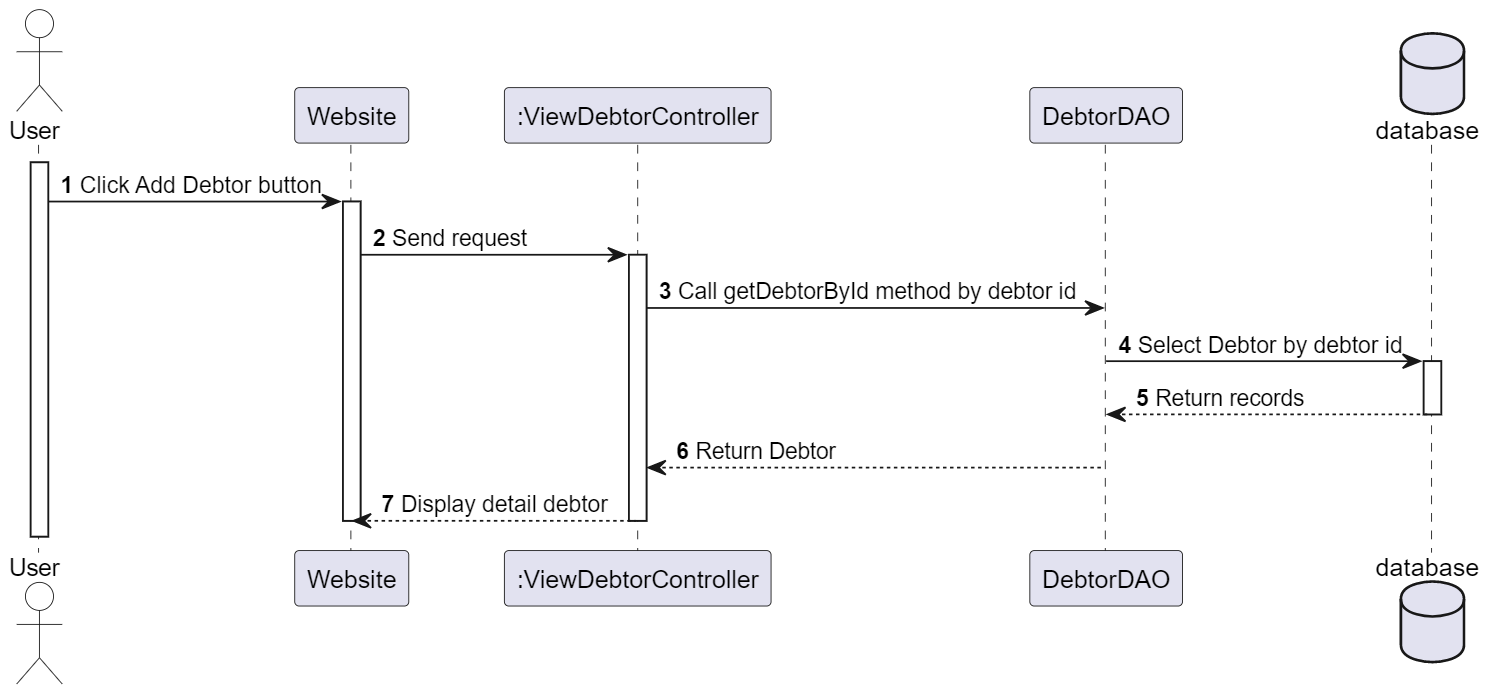
|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *getDebtorById(int id)* | *Find debtor by debtor id.* |

#### Car

***Class Methods***

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

### c. Sequence Diagram(s)

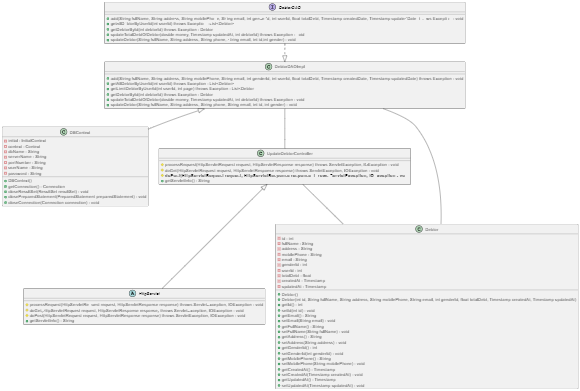


### d. Database Queries

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

## Update Car

### a. Class Diagram



### b. Class Specifications

*UpdateCarController*

*Class Methods*

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *doPost(HttpServletRequest request, HttpServletResponse response)* | *Get data from Update Debt 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* |

***CarDAO***

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *add(String fullName, String address, String mobilePhone, String email, int genderId, int userId, float totalDebt, Timestamp createdDate, Timestamp updatedDate)* | *Interface abstract method add debtor with name, address, mobile phone, email, gender and total debt* |
| *02* | *getAllDebtorByUserId(int userId)* | *Interface abstract method get debtor by user ID* |
| *03* | *getLimitDebtorByUserId(int userId, int page)* | *Interface abstract method get limit debtor by user ID* |
| *04* | *getDebtorById(int debtorId)* | *Interface abstract method get debtor by ID* |
| *05* | *updateTotalDebtOfDebtor(double money, Timestamp updatedAt, int debtorId)* | *Interface abstract method update total debt of debtor* |
| *06* | *updateDebtor(String fullName, String address, String phone, String email, int id,int gender)* | *Interface abstract method update debtor* |

#### CarDAOImpl

***Class Methods***

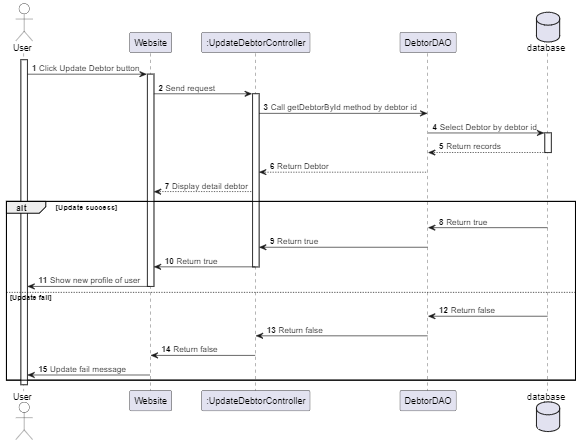
|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *add(String fullName, String address, String mobilePhone,*  *String email, int genderId, int userId, float totalDebt, Timestamp createdDate, Timestamp updatedDate)* | *Add debtor with name, address, mobile phone, email, gender and total debt* |
| *02* | *getAllDebtorByUserId(int userId)* | *Get debtor by user ID* |
| *03* | *getLimitDebtorByUserId(int userId, int page)* | *Get limit debtor by user ID* |
| *04* | *getDebtorById(int debtorId)* | *Get debtor by ID* |
| *05* | *updateTotalDebtOfDebtor(double money, Timestamp updatedAt, int debtorId)* | *Update total debt of debtor* |
| *06* | *updateDebtor(String fullName, String address, String phone, String email, int id,int gender)* | *Update debtor* |

#### 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)

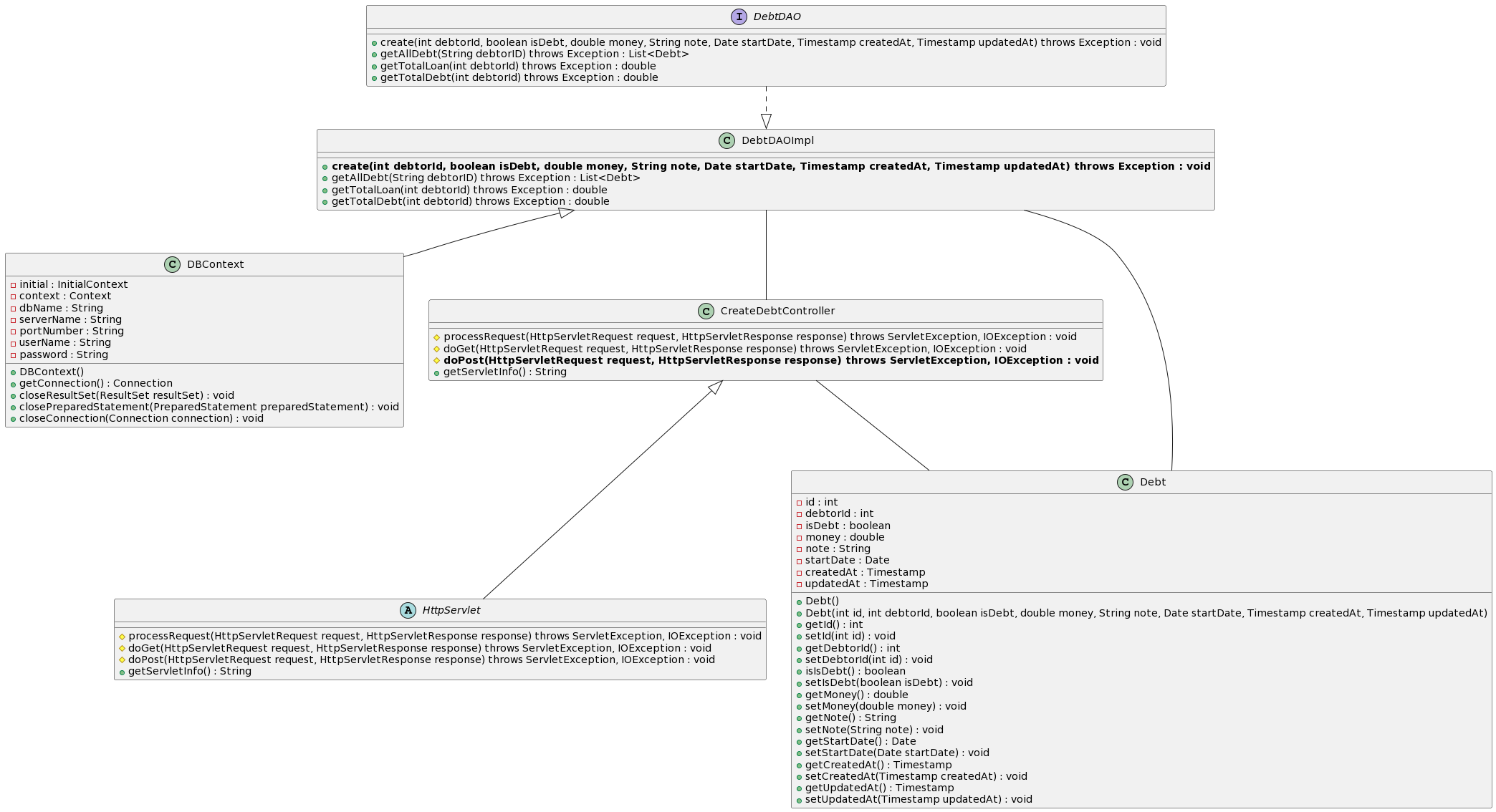


### d. Database Queries

"update debtor set full\_name = ?, address = ?, mobile\_phone = ?, email = ? gender\_id =? where id = ?"

## Create Debt

### a. Class Diagram



### b. Class Specifications

#### CarController

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *doPost(HttpServletRequest request, HttpServletResponse response)* | *Get data from Create Debt 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* |

#### CarDAO

***Class Methods***

|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *create(int debtorId, boolean isDebt, double money, String note, Date startDate, Timestamp createdAt, Timestamp updatedAt)* | *Interface abstract method create debt with debtorId, money, note, startDate and type of debt* |

#### CarDAOImpl

***Class Methods***

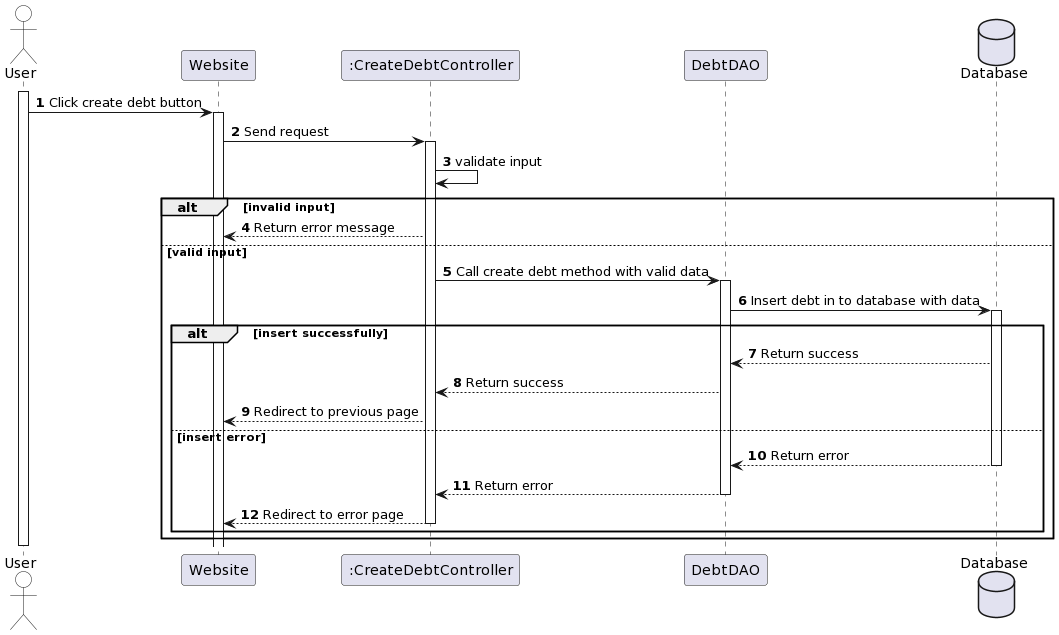
|  |  |  |
| --- | --- | --- |
| **No** | **Method** | **Description** |
| *01* | *create(int debtorId, boolean isDebt, double money, String note, Date startDate, Timestamp createdAt, Timestamp updatedAt)* | *Create debt for a debtor with debtorId, type of debt, number of money, note, startdate* |

#### Debt

***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 [debt] (debtor\_id, is\_debt, money, note, start\_date, created\_at, updated\_at) values (?, ?, ?, ?, ?, ?, ?)**

## View Detail Debt

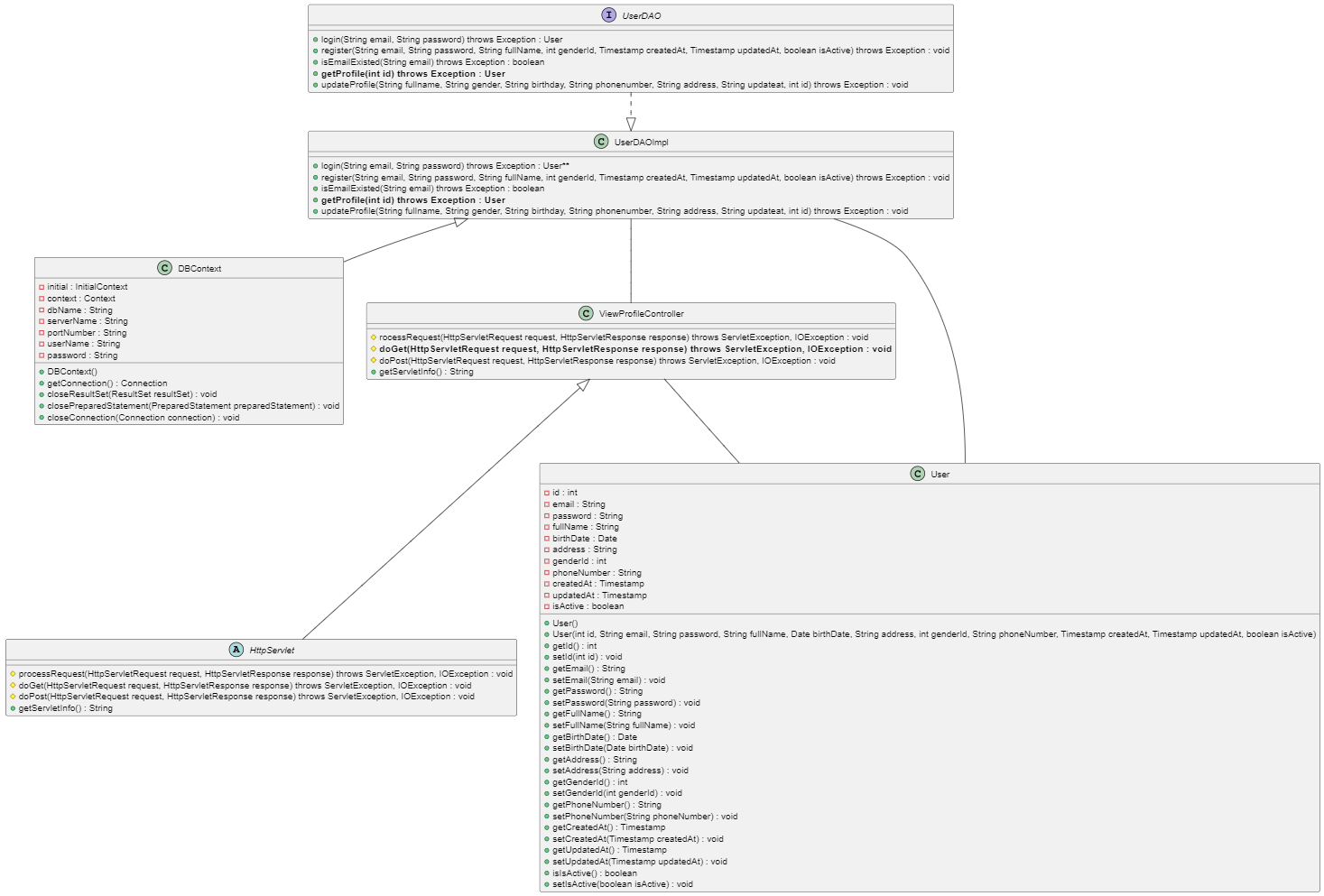
## Update Debt

## Delete Debt

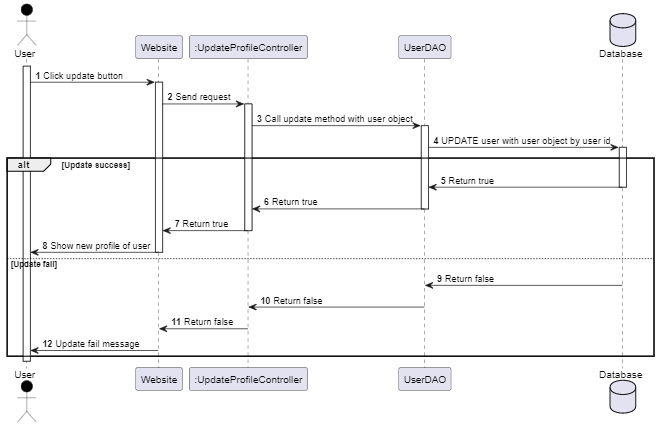
## Search Debt

## User Detail

### a. Class Diagram

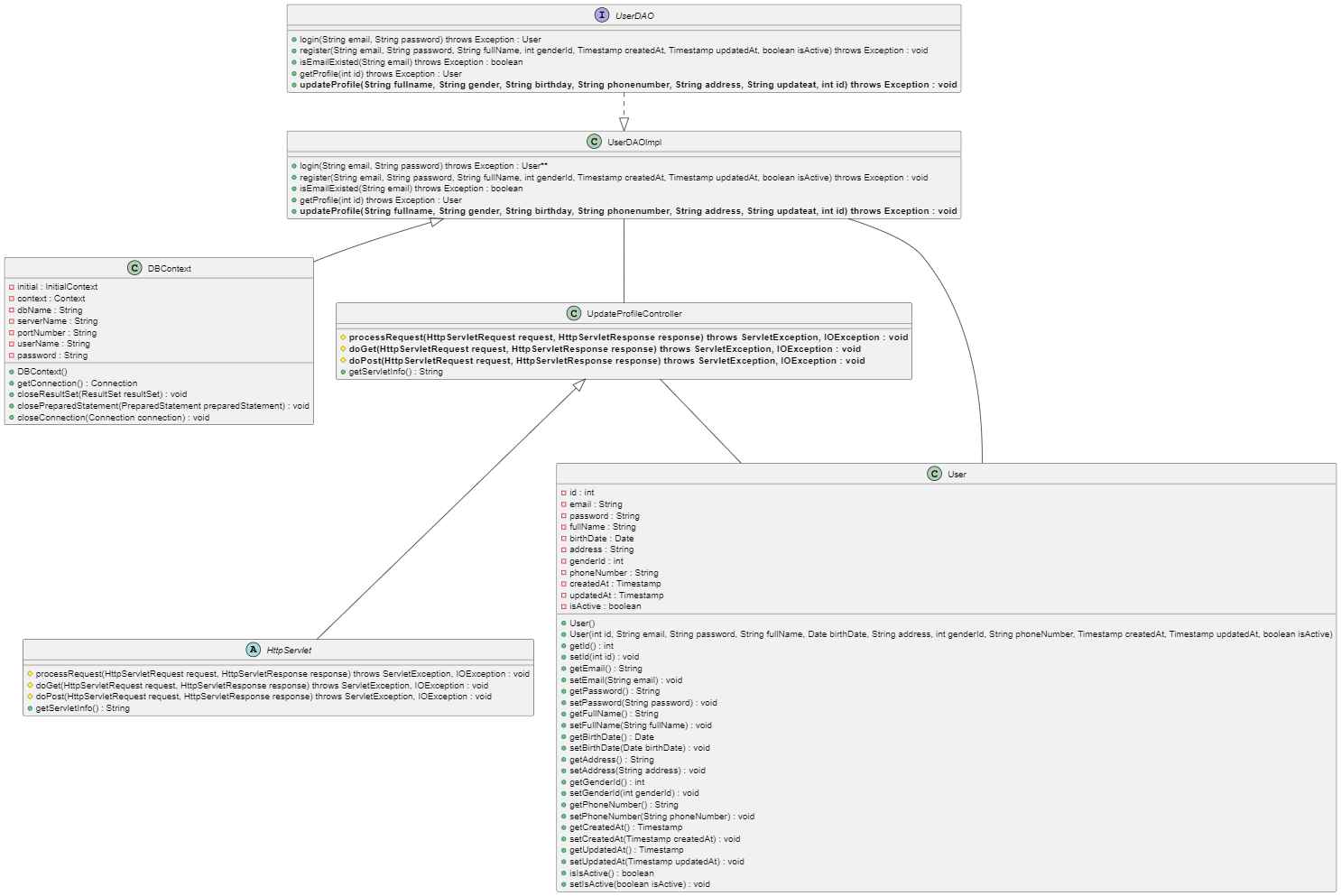


### b. Sequence Diagram(s)

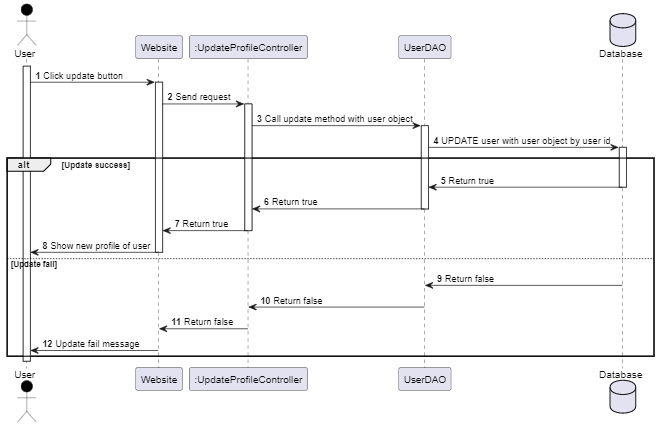


## Update Profile

### a. Class Diagram

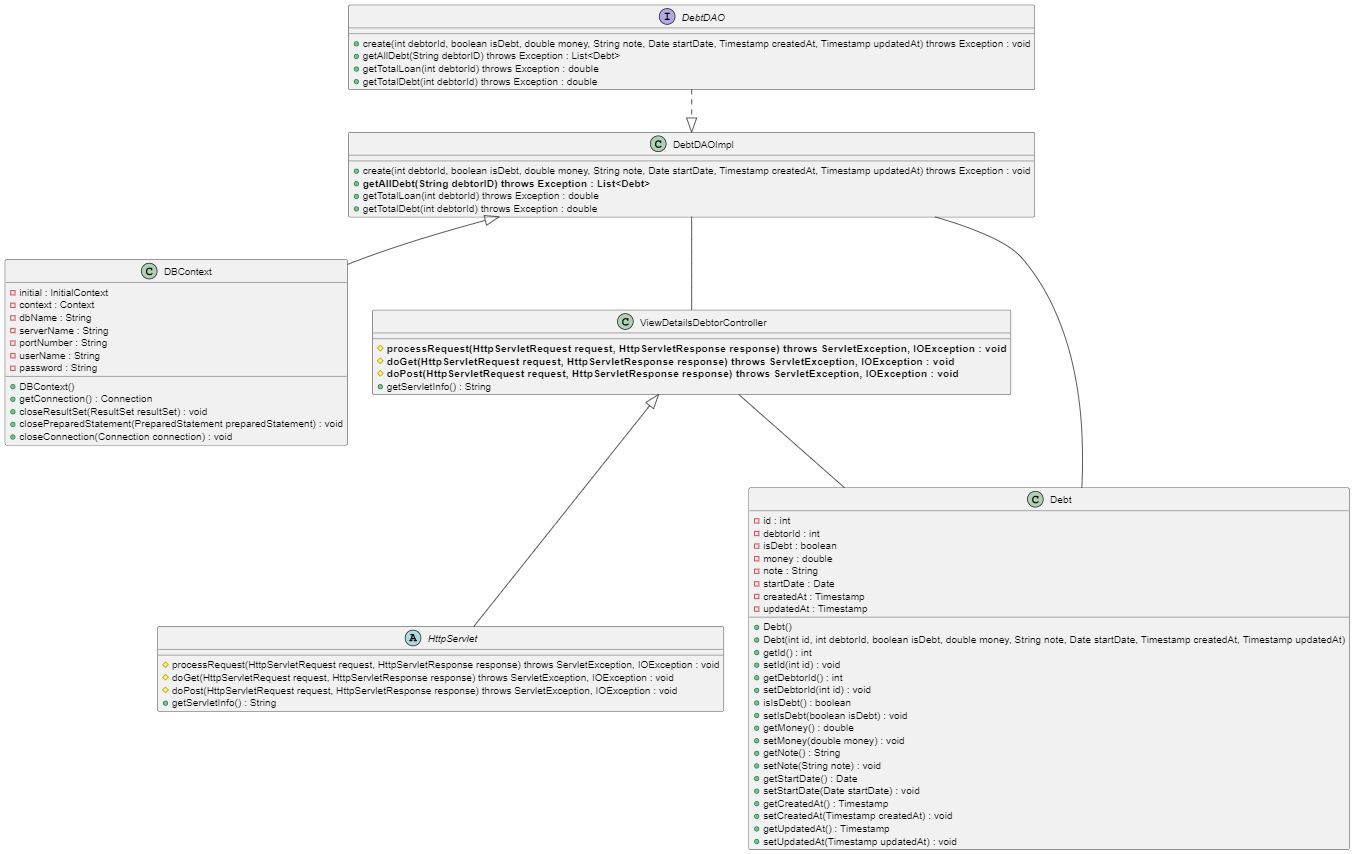


### b. Sequence Diagram(s)



## View List Debt of a Debtor

### a. Class Diagram



### b. Sequence Diagram(s)

