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**Introduction**

* The project is to simulate a bus reservation system by using Java Programming Language. There are two types of user for this system: customer and admin
* Customer can search bus information and book bus ticket through the system. Admin can perform the same function as customer, but have more privileges, such as adding or deleting buses
* New customers should register first before logging into their account
* If customers forget their password, they can view the password by answering security questions
* After they logged into their account, their previously booked bus information should be there in the account
* The activities include searching buses by departure and arrival cities, booking bus tickets, checking booked information, and all bus information
* In any case, they can go back to the main menu and make a new selection

**Functionality and Requirement Specifications:**

* When starting the application, user will be presented with a splash screen giving them the option to login, register an account, recover password of an existing account, or exit the program
* Login will require a username and password that will be validated against a database
* Registration accepts the following information and will be stored into the database:
  + - first name
    - last name
    - address
    - zip code, state
    - username
    - password
    - Email
    - SSN
    - security question
    - security answer
* User can login using username and password if it is properly validated by the database information
* Recovering password will require existing username that will be validated through the database
* If username is valid, it will display the security question for the user and a field to enter the answer to the security question
* If the security question answer entered is correct, an alert box displaying the password for the account will be displayed
* Users can be distinguished between customer and admin
* Once logged in to the account main page, all buses booked by a user will be displayed under existing reservation
* User can enter bus number from their list of booked buses and delete them from their account
* User can refresh their booked buses
* Users can click on a search buses button from the main page to take them to a search page
* From the search page users can enter search term into a text field and sort by search categories. Results will be displayed in list view
* Users can book a bus by entering bus number they would like to book into the add bus textbox and clicking the add bus button
* If a user has already booked the selected bus or the bus time conflicts with already booked bus, user will be notified accordingly via alert box
* If the user is an admin, their main page will have the option to go to an add bus page, or an edit/delete page
* On the add bus page, admin can enter bus details into the text box, and click a create bus button to create a new bus
* If the departure date and time is set to after the arrival date and time, it will warn the user of a conflict and will not let them book the trip
* The edit delete bus page will have a drop-down option to update or delete a bus based on bus number
* If the update option is selected, admin can select the category to update and enter the updated information
* User must click submit to delete or edit bus
* All pages must have an option to return to the main page
* The user can log out from the main page

**Class Diagram**

**A screenshot of a cell phone

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**Database Tables**

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**Project Database Code**

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