CMPUT 291 – Project 1 Design Document

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For this Project 1, we decided to make a Graphical User Interface (GUI) program in Java to interface with the given SQL database. Due to time constraints, we weren't able to follow the Model, View, Controller (MVC) design standard like we had hoped to. Instead, our program contains one very large class, GroupProject1.java, which acts as the GUI designer; this class has all of the text fields, labels, and other GUI elements defined within it, with some small functions to handle logging in and out, and handle unexpected exits.

The GUI contains a main page, which upon logging in to SQLPlus, unlocks to allow access to the rest of the GUI. There are six tabs in total:

- Home
- Vehicle Registration
- Auto Transaction
- Driver Licence Registration
- Violation Record
- Search

These tabs each house the different functions of our program, each function in their respective tab (the 'Home' tab being the main screen the user sees before logging in). The functionality of each tab is facilitated by a corresponding class. Tab 'Auto Transaction' has AutoTransaction.java, in which SQL queries are handled corresponding to the data provided by the user in the tab, for example. Each of the tabs has its own class:

- tab Vehicle Registration has VehicleRegistration.java
- tab Auto Transaction has AutoTransaction.java
- tab Driver Licence Registration has LicenceRegistration.java
- tab Violation Record has ViolationRecord.java
- tab Search has Search.java

On the tabs for Vehicle Registration, Driver Licence Registration, and Auto Transaction, there are text fields for the user to input data regarding to people, like buyer and seller on the Auto Transaction tab. These fields are by default uneditable until a user has inputted a Social Insurance Number (SIN) for that person. This is because when the SIN is inputted, the program checks to see if a person with that SIN is already in the database. If so, then the rest of the boxes are filled with that person's data, and left uneditable. In the case that the SIN is not in the database, the boxes become editable, and the user then can fill the info in, which will then be used to create a new entry in the database.

Each “tab class” (ie. Search.java) is instantiated in GroupProject1.java with necessary arguments, and each of these classes has a 'Run()' method, which handles the computation corresponding to that tab (with the exception of AutoTransaction.java, which has a 'MakeTransaction()' method).

Finally, for using the Search tab, regular expressions are used to evaluate the search text, and determine what the user wishes to search for. The format expected for four searches is listed:

- Licence numbers must in the form '123456-789'
- SIN must be in the form '123-456-789'
- Serial Numbers are any continuous string of integers up to length 15
- Given names are any continuous string of characters up to length 40