CMPUT291 B1 Project1

Program Design Report

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1. Introduction

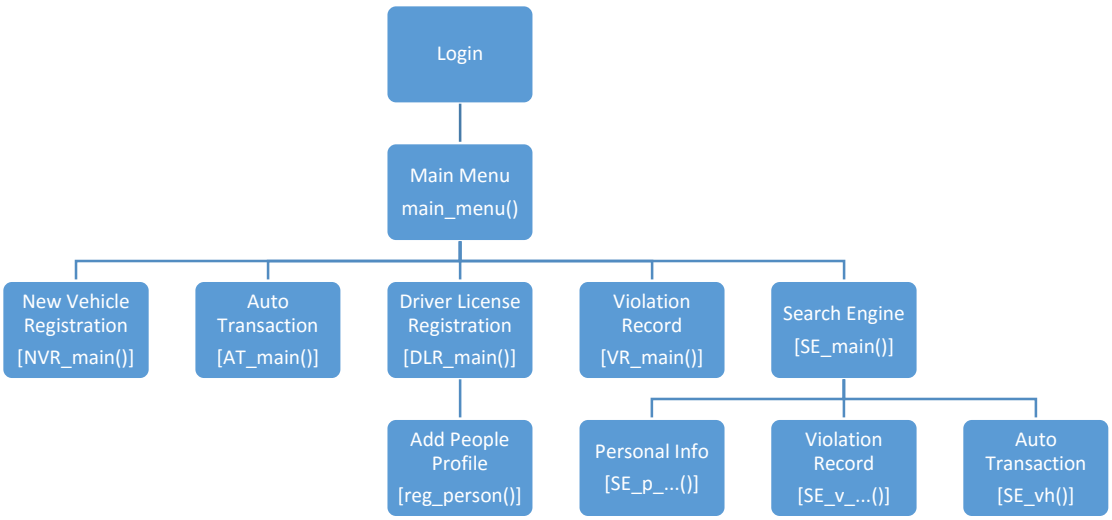
This program use cx_Oracle module to handle several designed case in a Linux terminal environment. As required, the program's features including:

- New Vehicle Registration - to register a new vehicle by an auto registration officer.
- Auto Transaction - to complete an auto transaction.
- Driver License Registration - to record the information needed to issuing a drive license, including the personal information and a picture for the driver.
- Violation Record - to issue a traffic ticket and record the violation.
- Search Engine - Search for personal information/violation record/auto transaction based on given information.

To start use this program. It is assumed that the user have network access and full permission account to the SQL Server (gwynne.cs.ualberta.ca in this case.)

In this project we chose Python and cx_Oracle because each of the group member is familiar with Python. Another reason is, by using Python, we were able to put our focus on achieve specific features without spending too much time dealing with other topic like collect used memory.

2. Features Diagram



3. Functions

1. DLR: user can register the new license for the person using the function reg_licence():
   a) Who has registered in the database
   b) Who has not registered in the database

→ ask user if he wants to add this person to the database→ reg_person()
→ enter a new SIN number

c) Directly register a new person who is not in the database→reg_person()

2. VR: help the user to register a new violation record:
   a) Add the record for the PRIMARY OWNER
   b) Add the record for the PRESENT OWNER

3. For the function of new vehicle registration (NVR), it allows user to add a new vehicle into the database, and it will handle various of errors that users might input.
   a) ''Is_exist_car'' can check if there is an exist vehicle in the database, and return a Boolean value about that.
   b) ''is_exist_person'' can check if there is an exist person in the database, and return a Boolean value about that.

4. For the function of Auto transaction(AT), it allows user to sale his/her cars to a buyer or a lot of buyers, but there is only one primary owner from buyer. It also will record a lot of other data into database.
   a) "is_exist_transaction" can check if there is a duplicated issue at the beginning of the function, in other words, if there is a same transaction id as user imputed in database, this function would return a true message.
   b) ''is_owner''can check if the cars that is sold by sellers are actually owned by that people, and it will return a Boolean message of true or false in either one of the case.
5. For Search Engine, it would take in user input, and obtain related rows using SQL queries.
   a) Search personal information by drive license number or name
      The output of personal information can be repeated if multiple remarks exists in the profile.
      Name search would only match exact case as the user input (user input are implicitly converted to lower case to match stored data in DLR.reg_person())
   b) Search vehicle transaction history by vehicle serial number
      The search for transaction history and violation record are separately conducted, to avoid joining table where transaction exist and no violation recorded.

4. Work Break-Down

Yang (1421992): Module DLR&VR
Chen (1412408): Module NVR&AT
Fu(1447466): Module Main menu & SE