UNIVERSITY OF TECHNOLOGY, JAMAICA

FACULTY OF ENGINEERING AND COMPUTING

School of Computing and Information Technology

Object Oriented Programming (CIT2004)

Group Project- RPLS & TIOCS System

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# Object Oriented Analysis

|  |  |  |
| --- | --- | --- |
| Class | Attribute | Methods |
| System 1: Red Plate Licensing System (RPLS) | | |
| Name | firstName  middleName  lastName |  |
| User | fullName  trn  role | log() |
| Date | day  month  year |  |
| PPV | LicenceNo  ownerName  driverName  pastOwner  pastDriver  issueDate  expDate |  |
| ProcessingOfficer | fullName  trn | addPPV()  updatePPV()  viewPPV()  viewAllPPV()  getParishForDriver(Name, List<Driver>)  deletePPV()  report()  deleteDriver() |
| Application | trn  ownerName  driverName  dob  address  email  contact  numOfTicketOutstanding  ticketOwing  policeRecordReason  policeDeniedReason | searchApp()  createApp()  updateApp()  deleteApp()  rejectApp() |
| Driver | dob  address  contactNo  paymentDueDate  courtDate  courtLocation  totalUnpaidTickets  totalFineAmount | log()  addDriver()  displayAllDrivers()  ticketCheck()  onlinePayment()  viewPayable()  updateDriverDatabase(Ticket, double)  checkPastDueDate()  viewTicket()  checkWarrant()  viewPaidTicket()  viewOutstandingTickets() |
| System 2: Ticketing Issuing and Offender Checking System (TIOCS) | | |
| Officer | badgeNum  policeStation | log()  addOfficer()  add() *view ticket also*  check()  viewAll() |
| Ticket | ticketNo  driverTrn  issueDueDate  offenceCode  offenceDescription  fineAmount  licensePlateNo  driverFullName  driverDob  driverAddress  driverContact  badgeNum  officerFullName  officerStation |  |

# Object Oriented Design

# Group Report

Javone-Anthony Gordon

* Assisted in performing the Object-Oriented analysis (OOA) to identify and develop the necessary classes, attributes, and methods.
* Created the Object-Oriented Designs (OOD) using UML diagrams for all the classes and the class relationship diagram.
* Created the Application Class (Constructors, Accessors, Mutators and toString)
* Created the ProcessingOfficer Class (Constructors, Accessors, Mutators and toString)
* Implemented the *addDriver* method in the Driver Class.
* Implemented the *displayAll* method in the Driver Class.
* Implemented the *onlinePayment* method in the Driver Class.
* Implemented the *updateDriverDatabase* method in the Driver Class.
* Implemented the *rejectApp* method in the Application Class.
* Implemented the *viewPPV* method in the ProcessingOfficer Class.
* Implemented the *report* method in the ProcessingOfficer Class.
* Assisted with the main commenting of source code.
* Assisted with the project documentation.

Kemone Laws

* Assisted in performing the Object-Oriented analysis (OOA) to identify and develop the necessary classes, attributes, and methods.
* Created the Object-Oriented Designs (OOD) using UML diagrams for all the classes and the class relationship diagram.
* Created the User Class (Constructors, Accessors, Mutators and toString)
* Created the Name Class (Constructors, Accessors, Mutators and toString)
* Created the Driver Class (Constructors, Accessors, Mutators and toString)
* Implemented the log method in the Driver Class.
* Implemented the *viewTicket* method in the Driver Class.
* Implemented the *addOfficer* method in the Officer Class.
* Implemented the *check* method in the Officer Class.
* Implemented the *updateApp* method in the Application Class.
* Implemented the *createApp* method in the Application Class.
* Implemented the *deletePPV* method in the ProcessingOfficer Class.
* Assisted with the main commenting of source code.
* Assisted with the project documentation.

Olivia McFarlane

* Assisted in performing the Object-Oriented analysis (OOA) to identify and develop the necessary classes, attributes, and methods.
* Created the Object-Oriented Designs (OOD) using UML diagrams for all the classes and the class relationship diagram.
* Created the Date Class (Constructors, Accessors, Mutators and toString)
* Created the Officer Class (Constructors, Accessors and Mutators and toString)
* Created the Ticket Class (Constructors, Accessors, Mutators and toString)
* Implemented the *viewPaidTicket* method in the Driver Class.
* Implemented the *viewOutstandingTicket* method in the Driver Class.
* Implemented the *log* method in the Officer Class.
* Implemented the *add* method in the Officer Class.
* Implemented the *viewAll* method in the Officer Class.
* Implemented the *updatePPV* method in the ProcessingOfficer Class.
* Implemented the *viewAllPPV* method in the ProcessingOfficer Class.
* Implemented the *getParishForDriver* method in the ProcessingOfficer Class.
* Assisted with the project documentation.

Diwani Walters

* Assisted in performing the Object-Oriented analysis (OOA) to identify and develop the necessary classes, attributes, and methods.
* Created the Object-Oriented Designs (OOD) using UML diagrams for all the classes and the class relationship diagram.
* Created the PPV Class (Constructors, Accessors, Mutators and toString)
* Implemented the *ticketCheck* method in the Driver Class.
* Implemented the *checkPastDueDate* method in the Driver Class.
* Implemented the *checkWarrant* method in the Driver Class.
* Implemented the *viewPayable* method in the Driver Class.
* Implemented the *searchApp* method in the Application Class.
* Implemented the *createApp* method in the Application Class.
* Implemented the *deleteApp* method in the Application Class.
* Implemented the *addPPV* method in the ProcessingOfficer Class.
* Assisted with the project documentation.

User Manual

# Introduction

This document provides a guide to the user regarding the use of the RPLS & TIOCS System. This is done through screenshots and explanations on how the user is to interact with the system and how the program should work as we go through its implementation.

# Welcome to the System

Upon entry to the system, the user is greeted with the Main Menu where they are given the option to either access the Red Plate Licensing System, Ticket Issuing and Offender Checking System or the Processing Officer’s Maintenance. The user is prompted to enter the corresponding integer of their choice, if this isn’t done the user is printed an invalid entry message and the system is terminated. If an incorrect integer entry is made the menu is given again with the prompt, following an error message stating to choose between 1 and 3. 0 can be entered on this menu to terminate the program. On first use it is recommended that the Processing Officer populates the system with JCF Officers' Records and General Driver’s Records, these actions can be done using option 3. This manual will explain the menu options in the order that they appear so if you want to know how to populate these records click [here](#_Processing_Officer_Maintenance).

A screen shot of a computer

Description automatically generated

## Red Plate Licensing System

Upon choosing option 1 of the Main Menu the user is prompted to indicate the type of user they are. The user is prompted to enter the corresponding integer of their choice, if this isn’t done the user is printed an invalid entry message and the system is terminated. If an incorrect integer entry is made the menu is given again with the prompt, following an error message stating to choose between 1 and 2. 0 can be entered on this menu to return to the previous menu (Main Menu). -1 can be entered to terminate the program.

A screenshot of a computer program

Description automatically generated

### Processing Officer

Upon choosing option 1 of the Red Plate Licensing System Menu the processing officer is prompted to enter the password (P@$$word). If the password is incorrect the system indicates that it was wrong and redisplays the Red Plate Licensing System Menu. If the password is correct, the processing officer is prompted to enter the corresponding integer of their choice, if this isn’t done the user is printed an invalid entry message and the system is terminated. If an incorrect integer entry is made the menu is given again with the prompt, following an error message stating to choose between 1 and 5. 0 can be entered on this menu to return to the previous menu (Red Plate Licensing System Menu). -1 can be entered to terminate the program. When you go back to the previous menu the officer would have to log in again.

A screenshot of a computer program

Description automatically generated

#### Create an Application

Below are the various prompts that the processing officer will see and have to answer when creating an application (option 1). TRN entry is to be a 9-digit entry with a dash after the third and sixth digits. Owner’s and Driver’s names are to be entered as separate strings, and the Driver must exist in the driver database of the system already. Applicant’s email must include an ‘@’ and a “.com” at the end. Components of the applicant’s date of birth are entered into separate integers. Applicant’s address can be entered with spaces but must have a parish at the end and when inputting parishes with Saint they must be written as “St.” with a space afterwards as shown in the image. Contact Number can be 7 digits (dash after 3rd digit) or 12 digits (dash after 3rd and 6th digit). The following questions can be entered using uppercase or lowercase. The report of the applicant is output, and the processing officer menu is redisplayed.

A screenshot of a computer

Description automatically generated

#### Update an Application

When Option 2 is chosen from the processing officer menu, the same rules apply for data entry from what was done in the creation of the application. It is at this point that the Police Record Denied reason is entered into the application. After the processing, the officer menu is redisplayed.

A computer screen shot of a computer program

Description automatically generated

#### Delete an Application

When option 3 is chosen the processing officer is prompted to enter the TRN of the applicant they want to delete, and when the correct TRN is entered the processing officer is shown the record that was deleted. Following the processing officer menu is redisplayed.

A screenshot of a computer

Description automatically generated

#### Reject an Application

When option 4 is chosen the processing officer is prompted to enter the TRN of the applicant they want to reject. They are shown whether or not it is successfully and then the menu is shown again. This is ideally done before an application is deleted.

A screenshot of a computer

Description automatically generated

#### Generate Report for an Application

When option 4 is chosen the processing officer is prompted to enter the TRN of the applicant, they want to do a report for. They are shown all outstanding tickets for the driver as well as a report of the application that was made.

A screenshot of a computer

Description automatically generated

### Driver

Upon choosing option 1 of the Red Plate Licensing System Menu the driver is prompted to enter their TRN to log in. If the TRN doesn’t exist in the system, it indicates that it was wrong and redisplays the Red Plate Licensing System Menu. If the TRN exists the driver is prompted to enter the corresponding integer of their choice, if this isn’t done the user is printed an invalid entry message and the system is terminated. If an incorrect integer entry is made the menu is given again with the prompt, following an error message stating to choose between 1 and 7. 0 can be entered on this menu to return to the previous menu (Red Plate Licensing System Menu). -1 can be entered to terminate the program. When you go back to the previous menu the driver would have to log in again.

A screenshot of a computer program

Description automatically generated

#### Check All Past Tickets

Upon choosing 1 the driver displays all their tickets paid and unpaid, along with the total of all the tickets and the count of how many there are. The Driver Menu is redisplayed.

A screenshot of a computer

Description automatically generated

#### Make Online Payments

Upon choosing 2 the driver is displayed all their unpaid tickets that haven’t passed due, (display says you don’t have any if you don’t) then prompted to choose one to pay for when chosen the updates are made for the payment and the Driver Menu is redisplayed.

A screenshot of a computer

Description automatically generated

A black screen with a number

Description automatically generated

#### Check Past-Due Tickets

Upon choosing 3 the driver displays all their past due tickets. Displays they don’t have any if that is the case. The Driver Menu is redisplayed.

A screen shot of a computer

Description automatically generated

#### View Ticket Payments (not passed due)

Upon choosing 4 the driver displays all their ticket payments that haven’t past due. Displays they don’t have any if that is the case. The Driver Menu is redisplayed.

A screenshot of a computer

Description automatically generated

#### Check For Warrants

Upon choosing 5 the driver is displayed at all the police stations that have a warrant out for their arrest and tells the driver they have a warrant out for their arrest for not appearing in court, if they don’t it states that they don’t have a warrant. Displays they don’t have any if that is the case. The Driver Menu is redisplayed.

A screen shot of a computer

Description automatically generated

#### View Paid Tickets

Upon choosing 5 the driver is displayed all the tickets they already paid for and is told if they haven’t paid for any tickets. Displays they don’t have any if that is the case. The Driver Menu is redisplayed.

A screenshot of a computer

Description automatically generated

#### View Outstanding Tickets and Due Date

Upon choosing 5 the driver displays all their outstanding tickets and their due dates. The same rule applies if they have none. Displays they don’t have any if that is the case. The Driver Menu is redisplayed.

A screenshot of a computer

Description automatically generated

## Ticket Issuing and Offender Checking System

When option 2 is selected from the main menu the officer is prompted to enter his/her TRN to log into the System. If it is incorrect they are told it is invalid and sent back to the main menu. When correct the officer menu is shown and they are expected to input integers. 0 brings you back to main and -1 terminates the program.

A screenshot of a computer

Description automatically generated

### Add New Ticket

When the officer chooses to add a ticket, the driver TRN input must exist in the system, the offence code has to be one of the four below it is a capital ‘O’ not zero. The offence description has to be only one word, and the license plate number should be 6 characters, the first 4 digits and the next 2 letters. When these are entered, the officer is asked to confirm the ticket displayed or change the ticket if they choose to change, they given a menu of attributes they can change.

A screenshot of a computer

Description automatically generated

### Check Status of a Driver

When option 2 is chosen from the officer menu the officer is given the choice to check unpaid past due tickets, check outstanding tickets in a specific parish and also all offenders with outstanding tickets. These options do their jobs and redisplays the officer menu.

A screen shot of a computer

Description automatically generated

### View All

When 3 is chosen in the officer menu all tickets are displayed sorted by the parish they were given in (the officer’s parish), After which the officer is prompted to decide if they want to update a ticket. After this is done or isn’t based on the decision the officer menu is shown again.

A screenshot of a computer

Description automatically generated

## Processing Officer Maintenance

When three is chosen from the main menu the processing officer is prompted to log in again when successfully the menu is shown. When you go back to the previous menu the processing officer would have to log in again.

A screenshot of a computer

Description automatically generated

### Add General Driver to System

This allows the processing officer to add driver to the system when they choose 1, following the examples of inputs below and what has been done before. The menu is displayed again afterwards.

A screenshot of a computer program

Description automatically generated

### Add PPV to System from Application

This allows the processing officer to add to the PPV file from an application that is in the application file, so when prompted for a TRN, it has to be one that is in the application file, the license plate of the vehicle is also promoted for and then the menu is displayed again.

A screenshot of a computer

Description automatically generated

### Update PPV/ Driver File

When 3 is chosen from the menu the processing officer is prompted to choose between updating the driving file and the PPV. Refer to previous sections for how to enter information to update driver. For the PPV similar rules apply for the license plate number the one entered to search must already exist in the file, and the new driver must be already in the general driver file.

A screenshot of a computer

Description automatically generated

### View a Driver's Record

When 4 is chosen from the menu the processing officer is asked to enter a driver’s TRN that is in the system and the Driver’s past tickets are shown and the count and total amount also. The menu is redisplayed after.

A screenshot of a computer

Description automatically generated

### View All Drivers with PPV License Badge

When 5 is chosen from the menu all drivers with a PPV license are displayed. The menu is displayed after.

A screenshot of a computer

Description automatically generated

### Delete PPV Record

When 6 is chosen the Processing officer is prompted to enter the license number of a person, he wants to delete from the PPV file, this is done, and the menu is redisplayed.

A screenshot of a computer

Description automatically generated

### Delete Driver Record

When option 7 is chosen, the officer is prompted to enter the TRN of the driver, when deleted the menu is displayed again

A screenshot of a computer

Description automatically generated

### Vehicle Current and Past Report

When 8 is chosen the current and past drivers and owners are shown for a vehicle as wells as their number of outstanding tickets when the license is entered. If the driver or owner hasn’t been changed those fields will show as N/A.

A screenshot of a computer

Description automatically generated

### Add JCF Officer to the System

When 9 is chosen from the menu, this allows the officer to add JCF officers to the system. This is another action that is essential to the general workings of the system, especially for the ticket system because it needs officers. Afterwards, the menu is displayed again.

