Computerized Rideshare Program

**Testing Report**

Group B

**Purpose**

This document provides an overview of the testing that was done for the Computerized Rideshare Program (CRP). It provides information on both unit and systems testing and details what was successful and what parts of the system failed.

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**A. Resources**

**1. People**

The CRP was created and tested by:

|  |
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**2. Environment**

Testing was performed under the Windows 7 32 bit and 64 bit operating systems. Tests were run in an empty database which was sourced from crp.sql in the sql folder. Before running the test suite crp.sql should be imported to clear any existing database entries and reset all values. CRPTestSuite was run as a JUnit Test to ensure that test cases were run in the correct order, rather than running the JunitTest package as a whole as a JUnit Test .

**3. Tools**

Testing was performed using Eclipse Juno with test cases created using JUnit4. GUI tests were performed in a Chrome web browser as there was no easy way to correctly test them in JUnit.

**B. Test Results**

**1. Unit Testing**

**1.1 Login Service**

|  |  |
| --- | --- |
| Test | Login attempt with empty details |
| JUnit Test | LoginServiceTestCases.testLoginEmptyEmailIDAndPassword |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | No employee is ever returned with empty details. |

|  |  |
| --- | --- |
| Test | Login attempt with wrong email and password |
| JUnit Test | LoginServiceTestCases.testLoginInvalidEmailIDAndPasswordCombination |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | No employee is returned if the email does not exist in the database. |

|  |  |
| --- | --- |
| Test | Login attempt with correct email but invalid password |
| JUnit Test | LoginServiceTestCases.testLoginInvalidPassword |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | No employee is returned if the password is incorrect. |

|  |  |
| --- | --- |
| Test | MD5 password generation |
| JUnit Test | LoginServiceTestCases.testMD5PasswordGeneration |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | An md5 of the selected password is correctly created. |

|  |  |
| --- | --- |
| Test | MD5 password generation with a null value |
| JUnit Test | LoginServiceTestCases.testMD5PasswordGenerationNullCheck |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly rejects creating an md5 of a null password |

|  |  |
| --- | --- |
| Test | MD5 password generation with a null value salted |
| JUnit Test | LoginServiceTestCases.testMD5PasswordGenerationNullCheckUsingSaltMethod |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly rejects creating an md5 with a salt of a null password |

|  |  |
| --- | --- |
| Test | MD5 password generation salted |
| JUnit Test | LoginServiceTestCases.testMD5PasswordGenerationUsingSaltMethod |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly creates a md5 of a password with a salt |

|  |  |
| --- | --- |
| Test | Salt generation |
| JUnit Test | LoginServiceTestCases.testSaltGeneration |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Creates a random 32 character salt, proved by creating 2 salts that are not equal to each other |

|  |  |
| --- | --- |
| Test | Driver registration |
| JUnit Test | LoginServiceTestCases.testUserRegistrationAsDriver |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly shows that the first user registered will be a driver |

|  |  |
| --- | --- |
| Test | Passenger registration |
| JUnit Test | LoginServiceTestCases.testUserRegistrationForPassenger |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly shows that if a second user registers they will be a passenger |

|  |  |
| --- | --- |
| Test | Login with valid credentials |
| JUnit Test | LoginServiceTestCases.testLoginValidLoginCredentials |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly shows that a user is able to log in as long as valid credentials are provided. |

**1.2 Email Service**

|  |  |
| --- | --- |
| Test | Generate email to carpool members (White box) |
| JUnit Test | EmailServiceTest.testGenerateEmailToCarpoolersWhiteBox |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly sends out emails to an entire carpool using a white box approach. |

|  |  |
| --- | --- |
| Test | Retrieve Driver List |
| JUnit Test | EmailServiceTest.testRetrieveDriverList |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Successfully retrieves a list of all drivers in the system. |

|  |  |
| --- | --- |
| Test | Generate email to carpool members (Black box) |
| JUnit Test | EmailServiceTest.testGenerateEmailToCarpoolersBlackBox |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly sends out emails to an entire carpool using a black box approach. |

|  |  |
| --- | --- |
| Test | Send Email |
| JUnit Test | EmailServiceTest.testSendEmail |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Emails are successfully sent out using the Email service class. |

**1.3 Schedule Service**

|  |  |
| --- | --- |
| Test | Find free carpools |
| JUnit Test | ScheduleServiceTest.testGetFreeCarpoolList |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly gets a list of the carpools with less than 4 members |

|  |  |
| --- | --- |
| Test | Get all carpools |
| JUnit Test | ScheduleServiceTest.testGetCarpoolList |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly gets a list of all the carpools |

**1.4 MyBatis Connection Factory**

|  |  |
| --- | --- |
| Test | Get SQL Session Factory |
| JUnit Test | MyBatisConnectionFactoryTest.testGetSqlSessionFactory |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | A connection to the database is successfully created, from information available in SqlMapConfig.xml, and returned. |

**1.5 CRS DAO**

All CRS DAO test are all black box tests and simply tests if the functions are working and doing the correct operations on the database.

|  |  |
| --- | --- |
| Test | Create new employee |
| JUnit Test | CrsDAOTest.testAInsertEmployeeRecord |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly creates a new employee in the database. |

|  |  |
| --- | --- |
| Test | Retrieve all the passengers of a carpool |
| JUnit Test | CrsDAOTest.testBBBRetrievePassengers |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly retrieves all the passengers of a certain carpool |

|  |  |
| --- | --- |
| Test | Remove driver status from an employee |
| JUnit Test | CrsDAOTest.testBBUpdateCurrentDriver |
| Pass/Fail | FAIL |
| Severity | 5/5 |
| Summary/Comments | An issue with the SQL query that is supposed to be performed with this function exists that prevents the function from executing correctly. |

|  |  |
| --- | --- |
| Test | Set driver status onto an employee |
| JUnit Test | CrsDAOTest.testBBUpdateNextDriver |
| Pass/Fail | FAIL |
| Severity | 5/5 |
| Summary/Comments | An issue with the SQL query that is supposed to be performed with this function exists that prevents the function from executing correctly. |

|  |  |
| --- | --- |
| Test | Create a temporary driver for a carpool |
| JUnit Test | CrsDAOTest.testBBUpdateTemporaryDriver |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly creates a temporary driver for a certain carpoool |

|  |  |
| --- | --- |
| Test | Get employee by email |
| JUnit Test | CrsDAOTest.testBGetLoginRecord |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly retrieves the employee by email id |

|  |  |
| --- | --- |
| Test | Canceling a carpool drive |
| JUnit Test | CrsDAOTest.testCancelCarpoolDrive |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly makes a driver a passenger and removes them from the carpool for that day. |

|  |  |
| --- | --- |
| Test | Cancel being picked up |
| JUnit Test | CrsDAOTest.testCancelCarpoolPickUp |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly marks the employee not to be picked up in the database |

|  |  |
| --- | --- |
| Test | Check in carpool |
| JUnit Test | CrsDAOTest.testCheckIn |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly updates a carpool to be checked in |

|  |  |
| --- | --- |
| Test | Check out carpool |
| JUnit Test | CrsDAOTest.testCheckOut |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly updates a carpool to be checked out |

|  |  |
| --- | --- |
| Test | Creating a new carpool |
| JUnit Test | CrsDAOTest.testCreateNewCarPoolGroup |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | A new carpool group is created correctly in the database |

|  |  |
| --- | --- |
| Test | Gets all the members of a carpool by carpool id |
| JUnit Test | CrsDAOTest.testFetchMembersEmailID |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly retrieves all the members of a carpool |

|  |  |
| --- | --- |
| Test | Get details of a carpool |
| JUnit Test | CrsDAOTest.testGetCarPoolGroupDetails |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly retrieves the details of a carpool specified by the carpool id |

|  |  |
| --- | --- |
| Test | Getting an employee record by ID |
| JUnit Test | CrsDAOTest.testGetEmployeeRecord |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly retrieves an employee based on the id |

|  |  |
| --- | --- |
| Test | Get the latest carpool group |
| JUnit Test | CrsDAOTest.testGetLatestCarpoolGroup |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly retrieves the last created carpool in the database. |

|  |  |
| --- | --- |
| Test | Get the carpool member details |
| JUnit Test | CrsDAOTest.testGetMemberInfo |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly retrieves carpool member details from the database for specified employee id |

|  |  |
| --- | --- |
| Test | Opting out of a carpool |
| JUnit Test | CrsDAOTest.testOptOutCarpool |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly removes employee from a carpool in the database |

|  |  |
| --- | --- |
| Test | Opting out of the CRP |
| JUnit Test | CrsDAOTest.testOptOutCrp |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly removes an employee from the database. |

|  |  |
| --- | --- |
| Test | Get the employees of carpools with less than 4 members |
| JUnit Test | CrsDAOTest.testRetrieveAllFreeCarpoolGroups |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly gets any carpool groups with less than 4 members. |

|  |  |
| --- | --- |
| Test | Retrieve all the drivers |
| JUnit Test | CrsDAOTest.testRetrieveDrivers |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly retrieves all current drivers. |

|  |  |
| --- | --- |
| Test | Retrieve all the members of a carpool |
| JUnit Test | CrsDAOTest.testRetrieveMembers |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly retrieves all the members of a particular carpool from the database |

|  |  |
| --- | --- |
| Test | Update an employee’s details |
| JUnit Test | CrsDAOTest.testUpdateUserDetails |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly updates the employee details in the database |

|  |  |
| --- | --- |
| Test | Get employee by ID |
| JUnit Test | CrsDAOTest.testcGetLoginRecordWithEmpID |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly retrieves the employee based on specified id |

|  |  |
| --- | --- |
| Test | Get carpool group with 4 members or less |
| JUnit Test | CrsDAOTest.testdGetCarPoolGroup |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Correctly gets an existing carpool group that contains less than 4 members if one exists. |

**2. System Testing**

The following tests were performed in a Chrome web browser using a fresh import of crp.sql from the sql folder. Two accounts were first created to test driver and passenger functionality, 3 extra accounts were created afterwards to test carpool opt out and carpool joining functionalities.

|  |  |
| --- | --- |
| Test | Login success |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Upon providing a correct email and password combination the user is taken to their carpool display page. |

|  |  |
| --- | --- |
| Test | Login failure |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Upon providing an incorrect email and password combination the login is unsuccessful. |

|  |  |
| --- | --- |
| Test | Logging out |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Upon pressing Logout the user is successfully logged out of the CRP. |

|  |  |
| --- | --- |
| Test | Registration success |
| Pass/Fail | PASS/FAIL |
| Severity | 1/5 |
| Summary/Comments | Upon providing a correct set of details the user object is correctly created in the database and the user is taken to their carpool display page, however, there’s a button missing until the user logs out and logs back in. |

|  |  |
| --- | --- |
| Test | Registration failure |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Upon providing bad, or no, information the system correctly displays error messages for the incorrect fields. |

|  |  |
| --- | --- |
| Test | Edit account details button |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Successfully brings up the edit account details page and pre-fills text boxes with your current information. |

|  |  |
| --- | --- |
| Test | Editing account details success |
| Pass/Fail | FAIL |
| Severity | 5/5 |
| Summary/Comments | After submitting correct and updated information the database entry for the employee is messed up and ruins the persons account. |

|  |  |
| --- | --- |
| Test | Editing account details failure |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | If user provides badly formatted information or does not provide their current password they are shown an error. |

|  |  |
| --- | --- |
| Test | Canceling pickup button |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Pressing the button successfully brings up a confirmation message. |

|  |  |
| --- | --- |
| Test | Canceling pickup |
| Pass/Fail | PASS/FAIL |
| Severity | 1/5 |
| Summary/Comments | User is updated in database, however, he is not removed from the carpool group display list. |

|  |  |
| --- | --- |
| Test | Canceling driver button |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Pressing the button successfully brings up a confirmation message. |

|  |  |
| --- | --- |
| Test | Canceling driving |
| Pass/Fail | FAIL |
| Severity | 4/5 |
| Summary/Comments | The SQL statement that is being attempted is not mapped and produces an error. |

|  |  |
| --- | --- |
| Test | Issuing Emergency |
| Pass/Fail | FAIL |
| Severity | 4/5 |
| Summary/Comments | A misconfigured SQL statement prevents an emergency being fulfilled correctly. |

|  |  |
| --- | --- |
| Test | Checking in |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | The carpool is successfully checked in and the driver/passenger screen layouts are correctly updated. |

|  |  |
| --- | --- |
| Test | Checking out |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | The carpool is successfully checked out and driver/passenger screen layouts are correctly updated. |
| Test | Opting out of carpool |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | Confirmation is displayed and user is successfully removed from their current carpool upon selecting the option to opt out. |

|  |  |
| --- | --- |
| Test | Joining a new carpool |
| Pass/Fail | PASS/FAIL |
| Severity | 1/5 |
| Summary/Comments | A server error occurs after selecting the option to join a new carpool, however, when logging back in as the same user the carpool has changed to the new one. |

|  |  |
| --- | --- |
| Test | Opting out of CRP |
| Pass/Fail | PASS |
| Severity | 0/5 |
| Summary/Comments | User is successfully deleted from the system after selecting the option to opt out of the CRP. |