Charles Sturt University

Assessment 3 cover sheet

Student Name: Elizabeth H Burgess   Student number: 11571039

PLEASE RETAIN A COPY OF THIS SUBMISSION

DECLARATION

I certify that:

1)   This assessment is my own original work and represents my intellectual property and that the material presented in this assessment, which is not otherwise acknowledged, is my own work.
2)   This assessment has not been submitted before by me or anyone else in this or any other subject at a tertiary level for assessment.
3)   I have read and understand the CSU Student Academic Misconduct Rule and associated penalties for academic misconduct.
4)   I have retained a copy of this assessment.

Name: E. H. Burgess

Date: 20/08/15

Project Proposal
Total Marks: 20

In this assessment task you need to develop a detailed project proposal based on the project title proposed in assessment item 1. You are required to choose/plan a mobile application development plan and propose project execution plan. The report may include the following information, but the report may not be limited to only following information. You may think of any other relevant and important information relevant to your project that may become part of your report.

Note: You are required to develop a document (MS Word or PDF) for this assessment submission. There is no page limit or word limit for this assessment; however, your document must not be overly length and must not be very brief. The document must contain the assessment requirements given in the task and in the marking guide. Use proper APA style referencing wherever required.

(1) Introduction

The Mobile application I propose is The Digital Vehicle Expenses Log or The D.V.E.L. This application is for the recording of all business and vehicle expenses during a financial year for taxation / business purposes.

The information that will be recorded:

- Multiple vehicles and their insurance details
- FBT year dates
- Taxation year
    - Calculates and creates reports for percentage of business use
    - Logbook period –minimum of 12 weeks recording
- Initial Odometer reading
- Easy selection of journey purpose
- Calculate your trip data from odometer readings at start and end of trip if manual entry
- Optional use of GPS to automatically calculate to calculate end odometer value and record start/end locations as well as route information. (Phase 2 implementation)
- Editing of existing trip records if some details are wrong.
- Calendar & contact entries selection for purpose of journey
- Records expenses such as fuel, insurance payments, repairs - capture invoice / receipt via camera
- Publishes both CSV and PDF copies of your expenses logbook that can be either saved to your cloud storage, or emailed to your accountant or tax agent.

As this application is recording information that will be used for taxation purposes it is important that the application be ATO compliant

(2) Development Platform and Programming Language

The platform for the development of this application is Android 5 (Lollipop) using C# and Xamarin.

The reasoning behind choosing the Android platform is:

- According to research has a larger market share through the diversity of hardware manufacturers. According to TomiAhonen Consulting's Analysis - Installed based of Smartphones by Operating System as of 30 June 2015 Android is installed on 76% of smartphones (Ahonen, 2015). Table 1 below shows the statistics in detail.

Rank	OS Platform	Units	Market share	Was Q1	Main Manufacturers of current base
1	Android	**1,730 M**	**76 %**	(75 %)	Samsung, Huawei, Sony, ZTE, LG, Lenovo/Motorola, Xiaomi, Coolpad, TCL-Alcatel
2	iOS	**449 M**	**20 %**	(20 %)	Apple
3	Windows Phone	**46 M**	**2 %**	(2 %)	Microsoft (Nokia), Samsung, HTC
4	Blackberry	**24 M**	**1 %**	(1 %)	Blackberry
	Others	**30 M**	**1 %**		
TOTAL Installed Base		**2,284 M** smartphones in use at end of Q2, 2015			

Table 1: INSTALLED BASE OF SMARTPHONES BY OPERATING SYSTEM AS OF 30 JUNE 2015 (Ahonen, 2015)

- Initially the application was going to be built for Windows Phone. This will not happen at the moment as Microsoft's market share in the smartphone arena is dwindling and may disappear completely. In the future this application may be created as a Universal application to be used on tablets and notebooks.
- By building the application in Xamarin and C# porting the code over to iOS and Windows in the future is able to be done without having to refactor for a different

programming language i.e. Java to Objective C or Java to C#, saving both time and money.

(3) Device Capability Requirement

The Device envisioned for this application has the following capabilities:
- GPS location data
- Access to API provided by third party
- Access to cloud services like Google Drive to store reports via data access
- Data access to send report via email
- Calendar & contacts access
- Touch screen

(4) Use Case (UML) and Class Diagram (5 Marks)
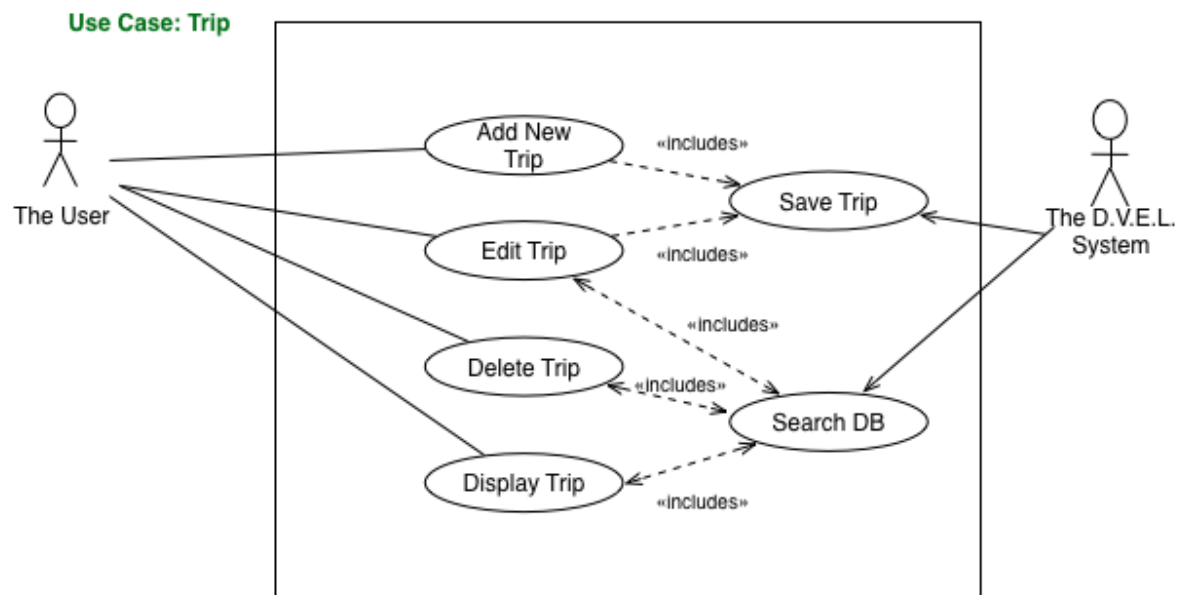

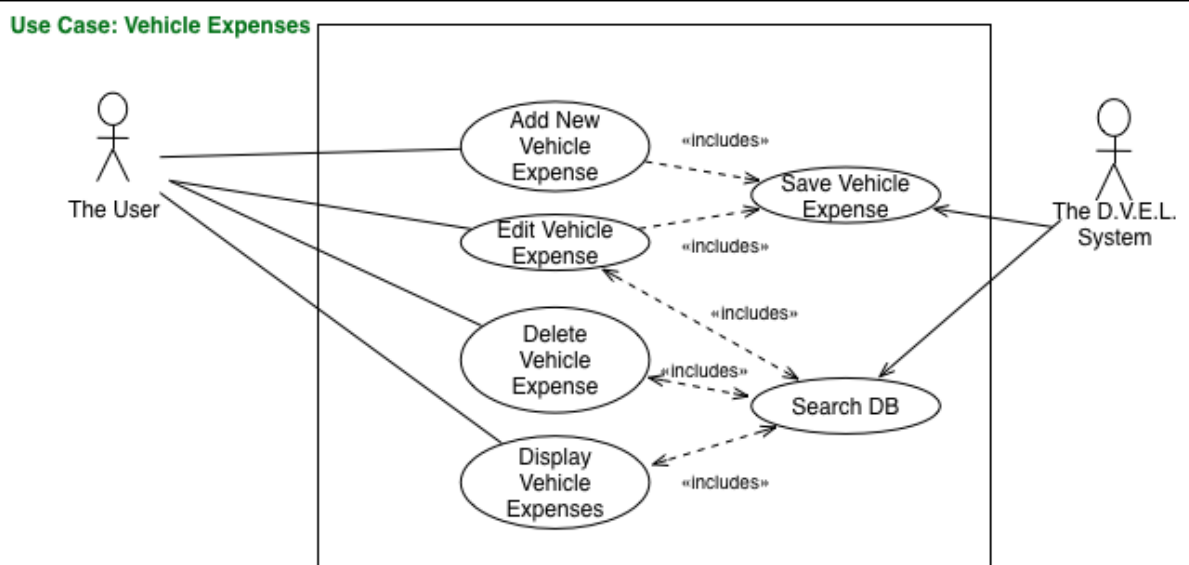**Figure 1: Trip TAB Use Case Diagram**

Figure 2: Vehicle Expenses TAB Use Case Diagram

Use Case: Business Expenses
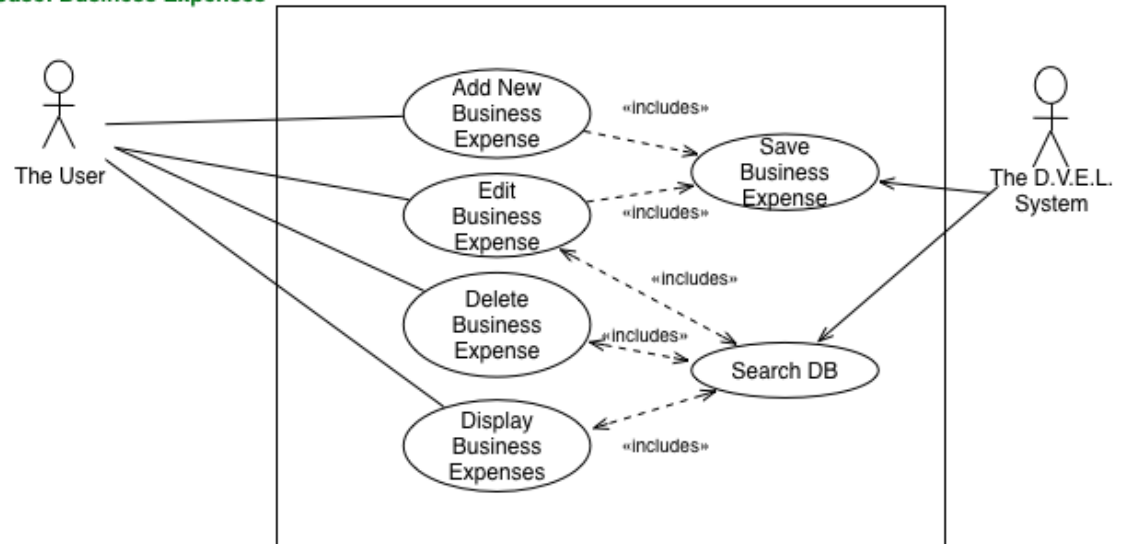
Figure 3: Business Expenses TAB Use Case Diagram

Use Case: Create Report
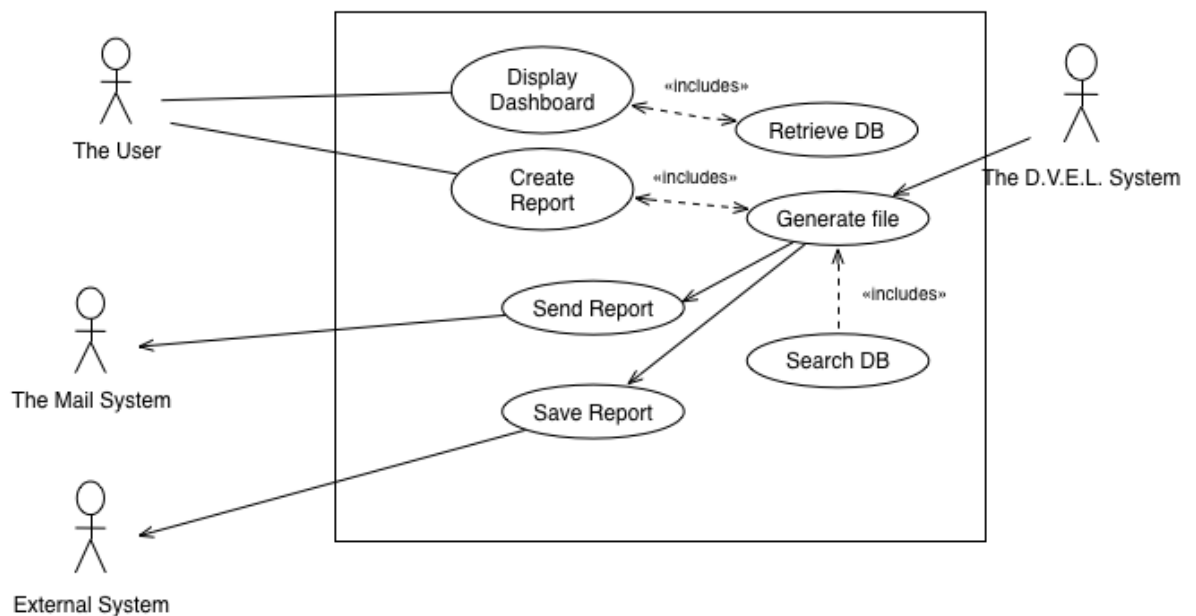
Figure 4: Create Report Use Case
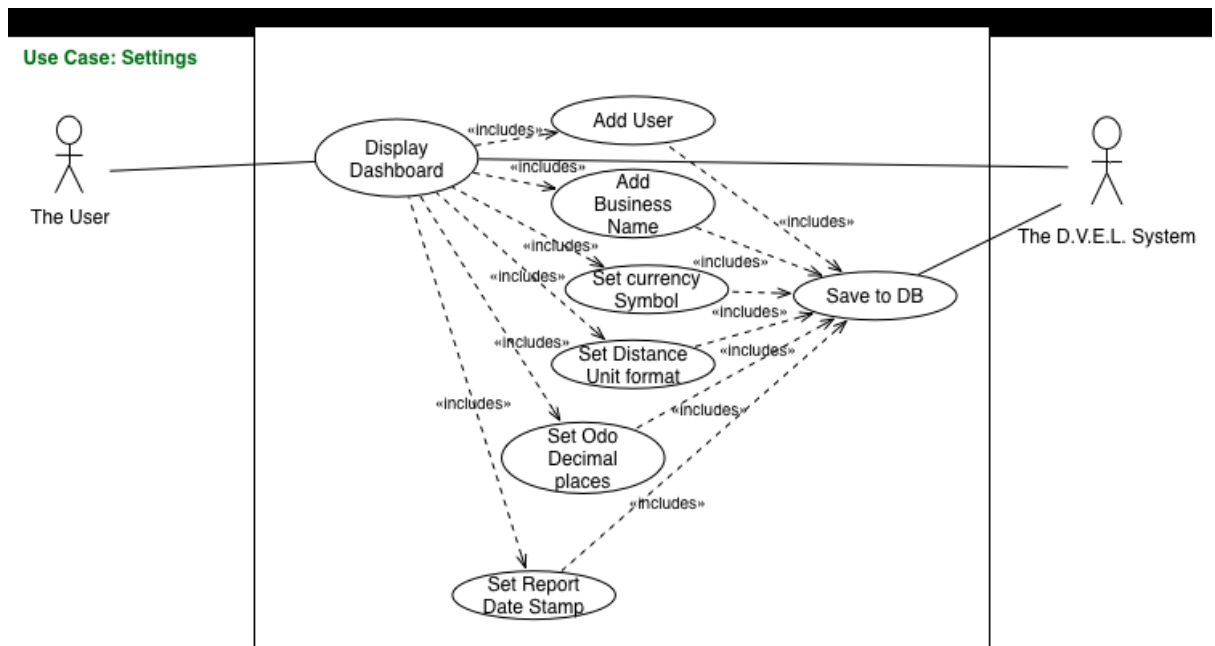
Figure 5:Settings Use Case

Class Diagram
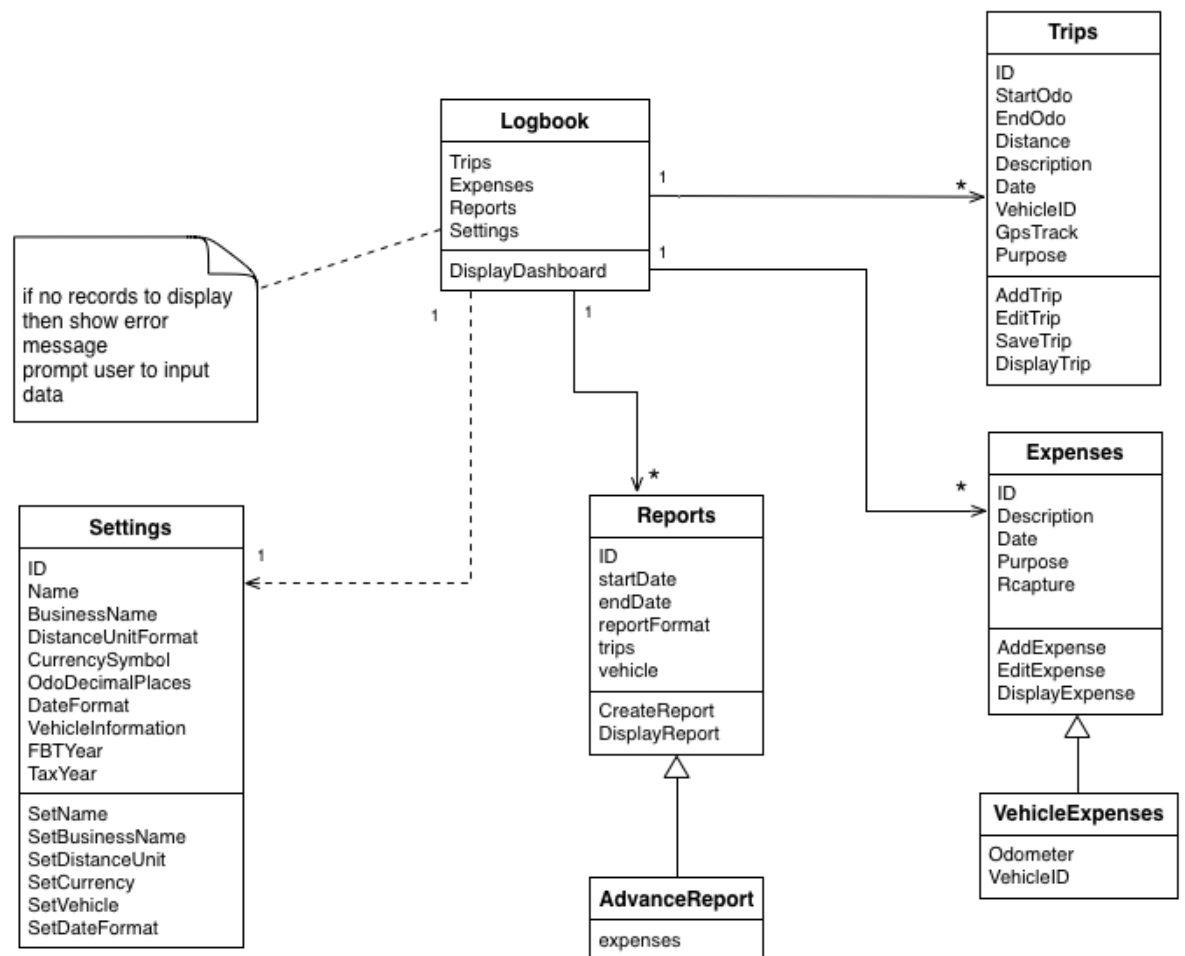
Figure 6: Class Diagram for The D.V.E.L.

(5) User Interface and Interaction (3 Marks)

The following set of diagrams provides the Interaction design and user interface. The information on the interface has been guided from the Wildon Vehicle & Business Expenses Log book as well as looking at existing vehicle logbook applications on the Google Play Store.

There are four sections buttons on the front screen that give a clear indication through iconography and wording of their purpose. Each section has a landing screen that provides a small history of transactions that have been done.

To put all the transaction in a similar area like in the physical logbook the user can swipe to the various historical screens.

I have provided more than one way to get to the various parts of each section with the Business Log providing a shortcut to the Business Expenses screen.

The screens have been kept consistent so that when a user inputs data the screen is already familiar to them for saving or cancelling the input. Visual clues for editing and deleting records have also been put in the design to make it more intuitive.

The application also adheres to Google Material Design guidelines in regards to icons, images etc.

Figure 7: Front page & Trip information interface Interaction

Canvas
Vehicle Expenses - input and edit

Swipe Left or right to get to next record to input / edit

Trip tab now off screen to the left.

The D.V.E.L.

Vehicle Log GOT IT
Enter your trip details fuel and other vehicle expenses & review your trip and expenses History
NEW TRIP   NEW EXPENSE

Business Log GOT IT
Enter your business expenses and get details of your expenses history
NEW BUSINESS EXPENSE

Reports GOT IT
Create and save all your reports for taxation / business purposes
CREATE REPORT

Settings GOT IT
Enter the details of your vehicles, FBT year and taxation

Selecting "New Expense" takes you directly to New Expense screen for Vehicle Expenses

Creates new expense record on selection

The D.V.E.L.
VEHICLE EXPENSE   BUSINESS EXPENSE

+ NEW EXPENSE

August 2015

22 AUG FUEL $39.00
Odometer Business
Litres / 100kms
Vehicle

22 AUG Service $39.00
Odometer
Litres / 100kms
Vehicle

22 AUG FUEL $39.00
Odometer Business
Litres / 100kms
Vehicle

Edit Icon selected expense record

Vehicle Expense dropdown list

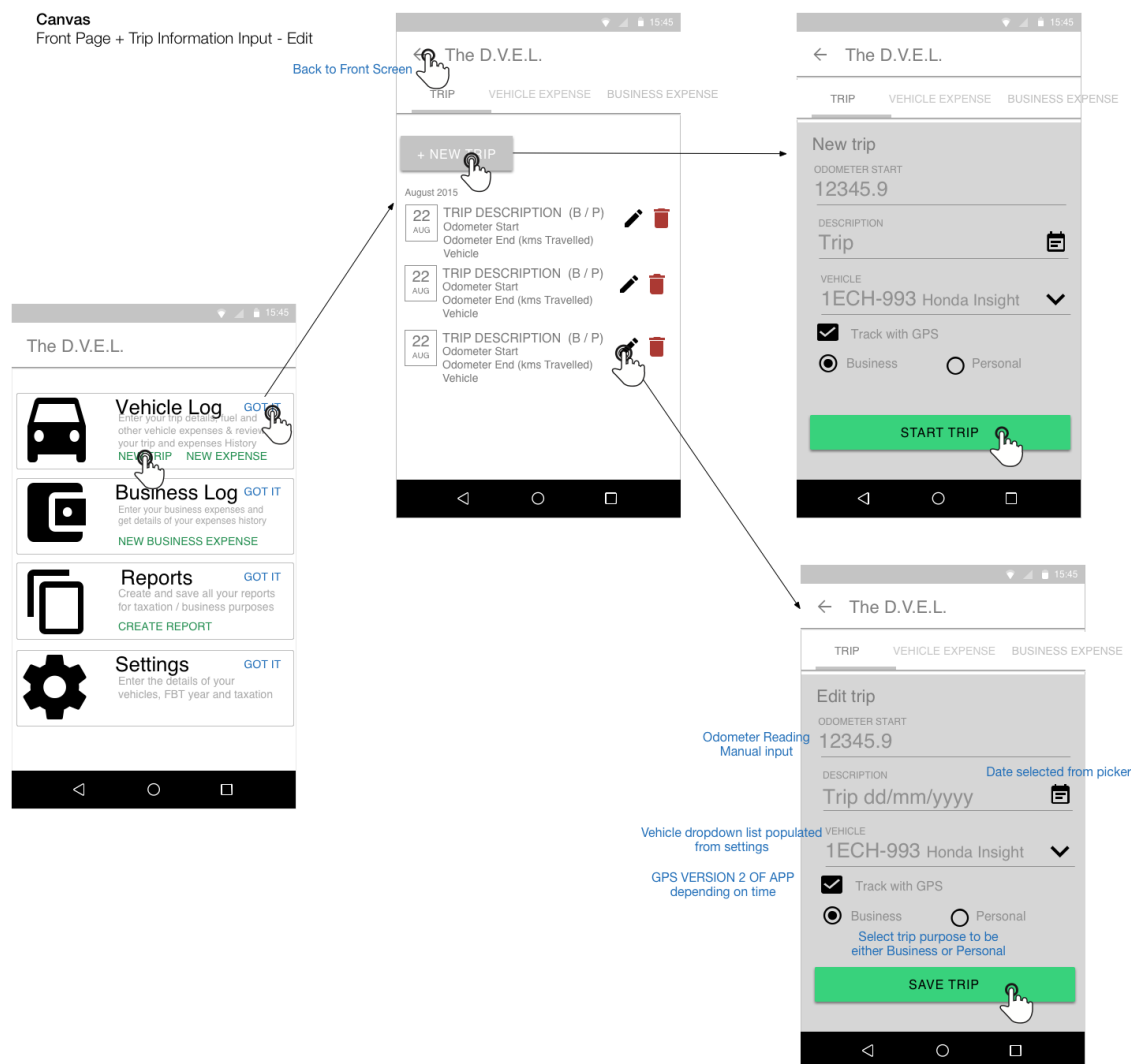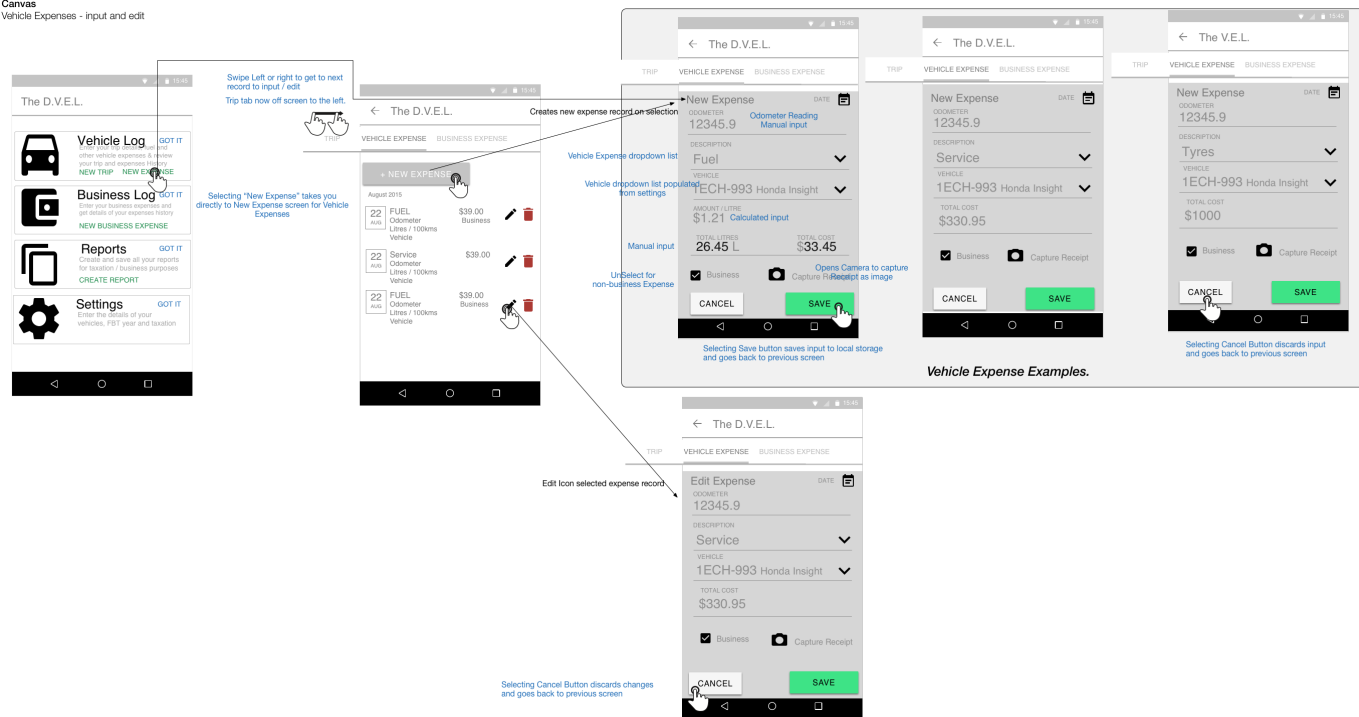Vehicle dropdown list populated from settings

Manual input

UnSelect for non-business Expense

Opens Camera to capture Capture Receipt as image

The D.V.E.L.
TRIP   VEHICLE EXPENSE   BUSINESS EXPENSE

New Expense DATE
ODOMETER Odometer Reading
12345.9 Manual input
DESCRIPTION
Fuel
VEHICLE
1ECH-993 Honda Insight
AMOUNT / LITRE
$1.21 Calculated input
TOTAL LITRES TOTAL COST
26.45 L $33.45

Business   Capture Receipt

CANCEL   SAVE

Selecting Save button saves input to local storage and goes back to previous screen

The D.V.E.L.
TRIP   VEHICLE EXPENSE   BUSINESS EXPENSE

New Expense DATE
ODOMETER
12345.9
DESCRIPTION
Service
VEHICLE
1ECH-993 Honda Insight
TOTAL COST
$330.95

Business   Capture Receipt

CANCEL   SAVE

The V.E.L.
TRIP   VEHICLE EXPENSE   BUSINESS EXPENSE

New Expense DATE
ODOMETER
12345.9
DESCRIPTION
Tyres
VEHICLE
1ECH-993 Honda Insight
TOTAL COST
$1000

Business   Capture Receipt

CANCEL   SAVE

Selecting Cancel Button discards input and goes back to previous screen

Vehicle Expense Examples.

Edit Icon selected expense record

The D.V.E.L.
TRIP   VEHICLE EXPENSE   BUSINESS EXPENSE

Edit Expense DATE
ODOMETER
12345.9
DESCRIPTION
Service
VEHICLE
1ECH-993 Honda Insight
TOTAL COST
$330.95

Business   Capture Receipt

CANCEL   SAVE

Selecting Cancel Button discards changes and goes back to previous screen

Figure 8: Vehicle Expenses interface Interaction

Canvas
Business Expenses

Swipe Left or right to get to next record to input / edit.
Vehicle Expenses and Trip now off the the left

The D.V.E.L.

Vehicle Log GOT IT
Enter your trip details fuel and other vehicle expenses & review your trip and expenses History
NEW TRIP   NEW EXPENSE

Business Log GOT IT
Enter your business expenses and get details of your expenses history
NEW BUSINESS EXPENSE

Reports GOT IT
Create and save all your reports for taxation / business purposes
CREATE REPORT

Settings GOT IT
Enter the details of your vehicles, FBT year and taxation

Business Expenses can be accessed by either
- Swipe Left from Vehicle Expenses or
- selecting Business Log from front screen to go to listing page of Business Expenses
- selecting New Business Expense to go directly to New Expense screen

The D.V.E.L.
TRIP   VEHICLE EXPENSE   BUSINESS EXPENSE

+ NEW EXPENSE

August 2015

22 AUG Parking Fee $14.00
Supplier Name Business
Vehicle

22 AUG Phone Calls $39.00
Supplier Name

22 AUG Samples $39.00
Supplier Name Business

Manual input

Calculated input

UnSelect for non-business Expense

Selecting Cancel Button discards input and returns to previous screen

The D.V.E.L.
TRIP   VEHICLE EXPENSE   BUSINESS EXPENSE

New Expense DATE
SUPPLIER
Pete's Parking
ABN: 49 000 000 000
DESCRIPTION
Parking
NET COST   GST   TOTAL COST
$13.64 $1.36 $15.00

Business   Capture Receipt

Opens Camera to capture Receipt as image

CANCEL   SAVE

Selecting Save button saves input to local storage

The D.V.E.L.
TRIP   VEHICLE EXPENSE   BUSINESS EXPENSE

Edit Expense DATE
SUPPLIER
Pete's Parking
ABN: 49 000 000 000
DESCRIPTION
Parking
NET COST   GST   TOTAL COST
$13.64 $1.36 $15.00

Business   Capture Receipt

CANCEL   SAVE

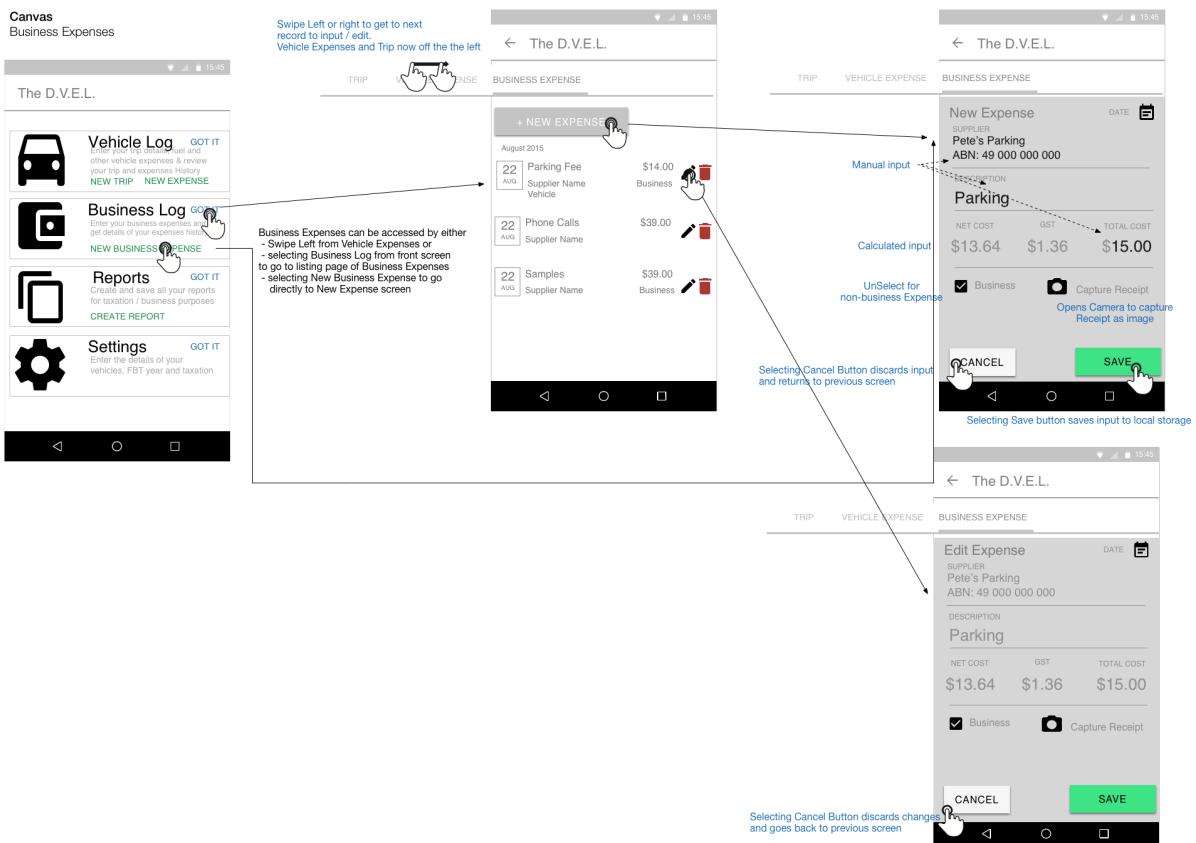Selecting Cancel Button discards changes and goes back to previous screen

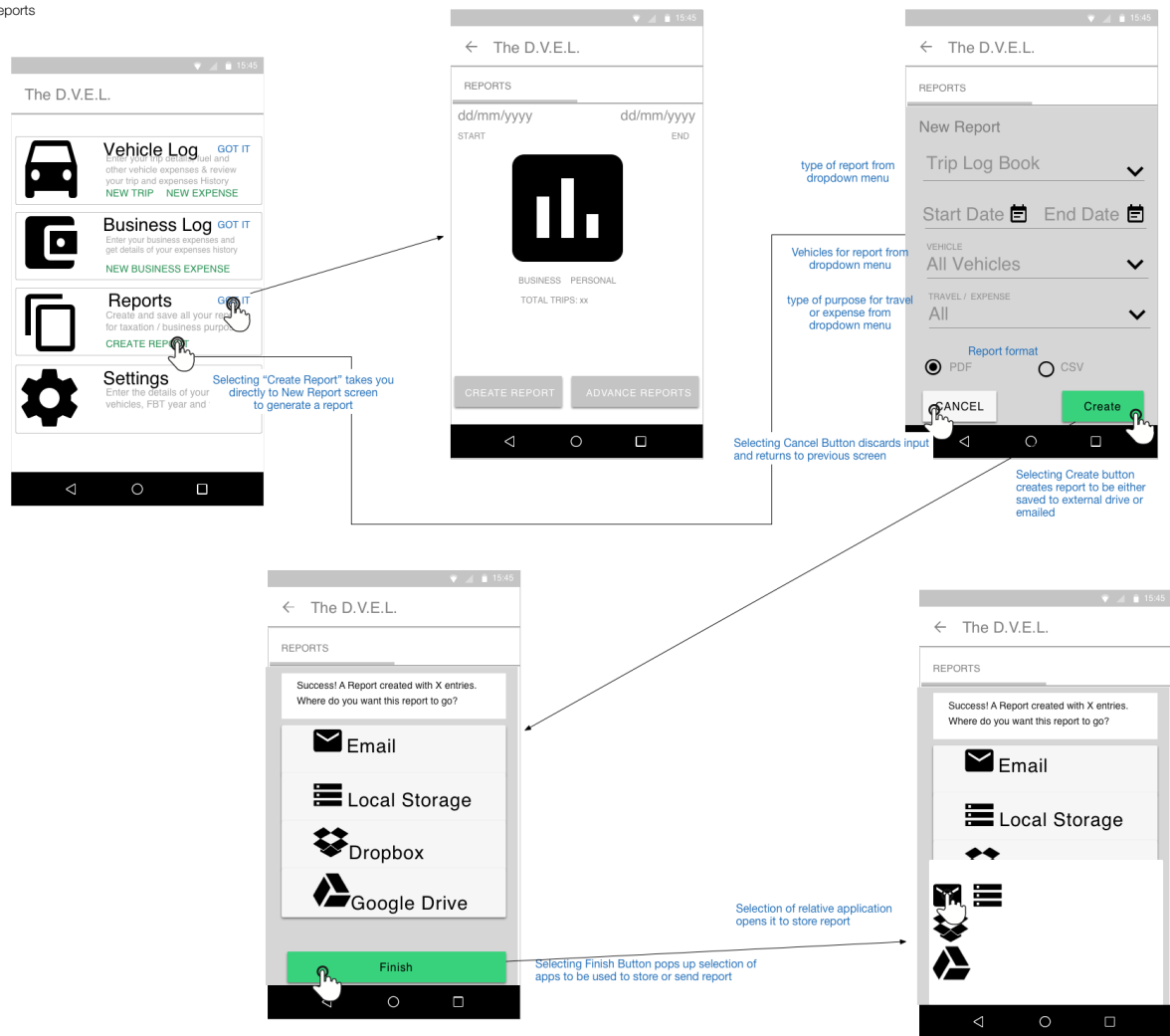**Figure 9 Business Expenses interface Interaction**
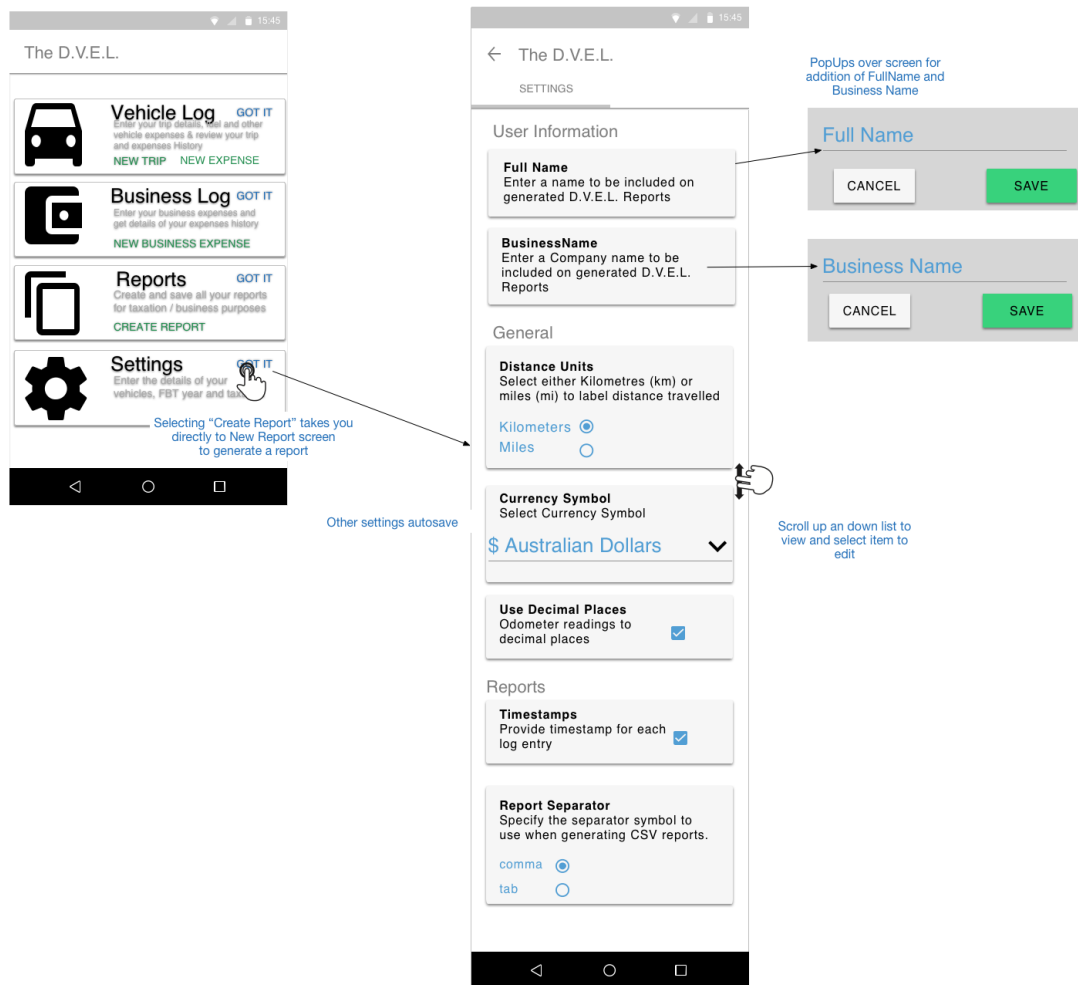
Figure 10: Reports Interface Interaction

Figure 11: Setting interface Interaction

Bibliography

Ahonen, T. T. (2015, August 10). *Smartphone Wars Q2 Scorecard*. Retrieved August 14, 2015 from Communities Dominate Brands, Business and Marketing Challenges for the 21st Century: http://communities-dominate.blogs.com/brands/2015/08/smartphone-wars-q2-scorecard.html

Freepik. (2015, 1 1). *http://www.flaticon.com/free-icon/dropbox-logo-black-silhouette_37246*. Retrieved 8 17, 2015 from Flaticon: http://www.flaticon.com

Freepik. (2015, 1 1). *http://www.flaticon.com/free-icon/google-drive-logo-symbol_24266*. Retrieved 8 17, 2015 from FlatIcon: http://www.flaticon.com

Ahonen, T. T. (2015, August 10). *Smartphone Wars Q2 Scorecard*. Retrieved August 14, 2015 from Communities Dominate Brands, Business and Marketing Challenges for the 21st Century: