DRIVESTATS

Functional Requirements Documentation

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https://github.com/AxelInd/COS301_DriveStats/

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Contents

High Level Class Diagrams

Client Side Android Functionality

This section refers to the mobile application aspect of the DVT DriveStats program. This details the use of activities, external application requests, sensor data aggregation, and their respective management.
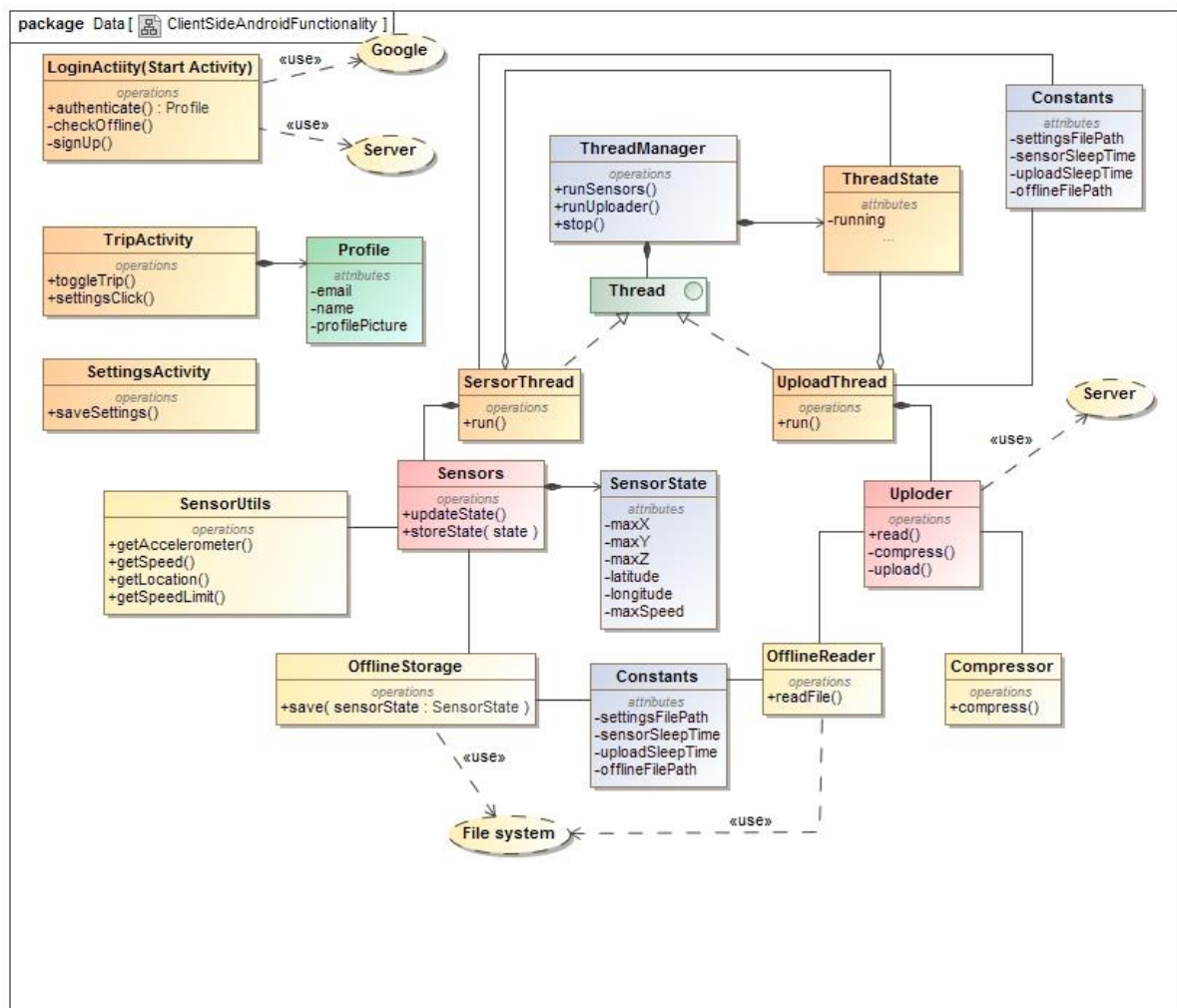

Figure 1- Client-Side Class Diagram

Server Side Functionality

This section refers to the server-side implementation of the database manager. The server is responsible for several tasks, including but not limited to, Object Relations Mapping, Equation Coefficient storage, login-authentication, user registering, and statistical and meta-statistical calculations
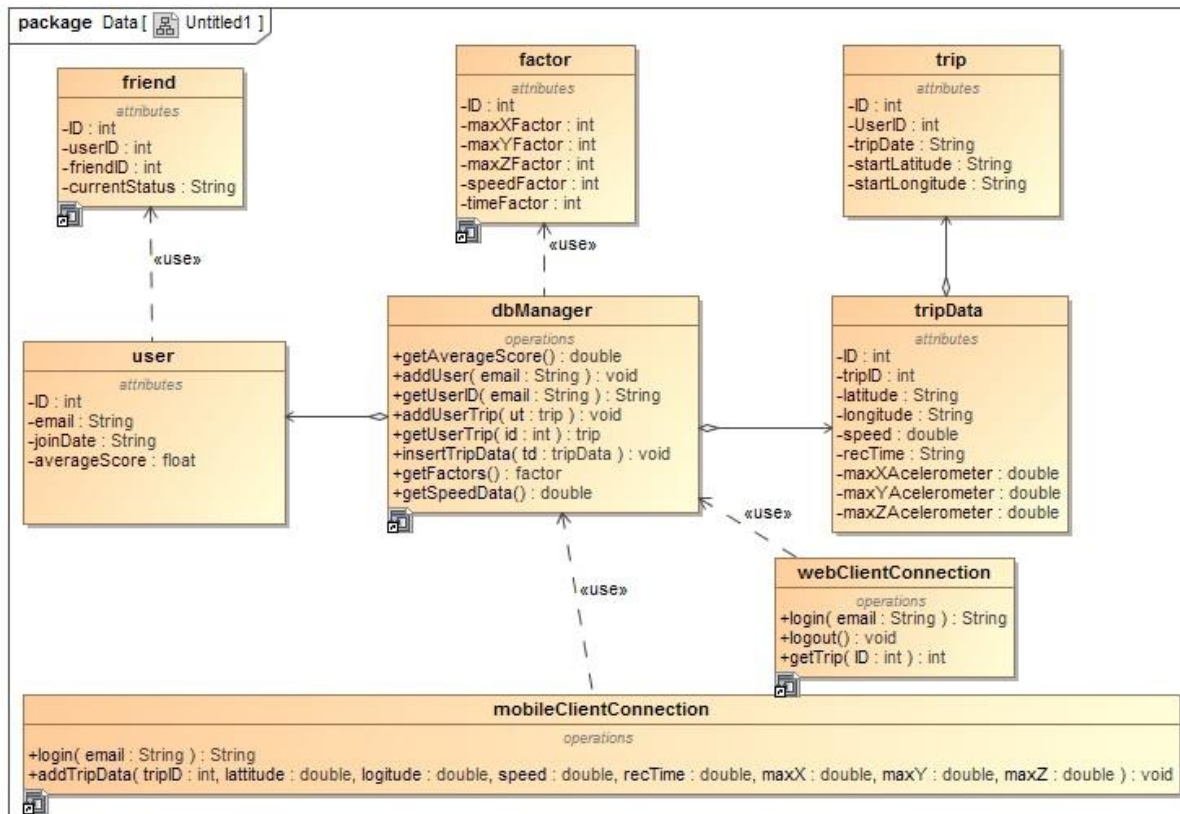

Figure 2- Server-side Class Diagram

Database Diagram

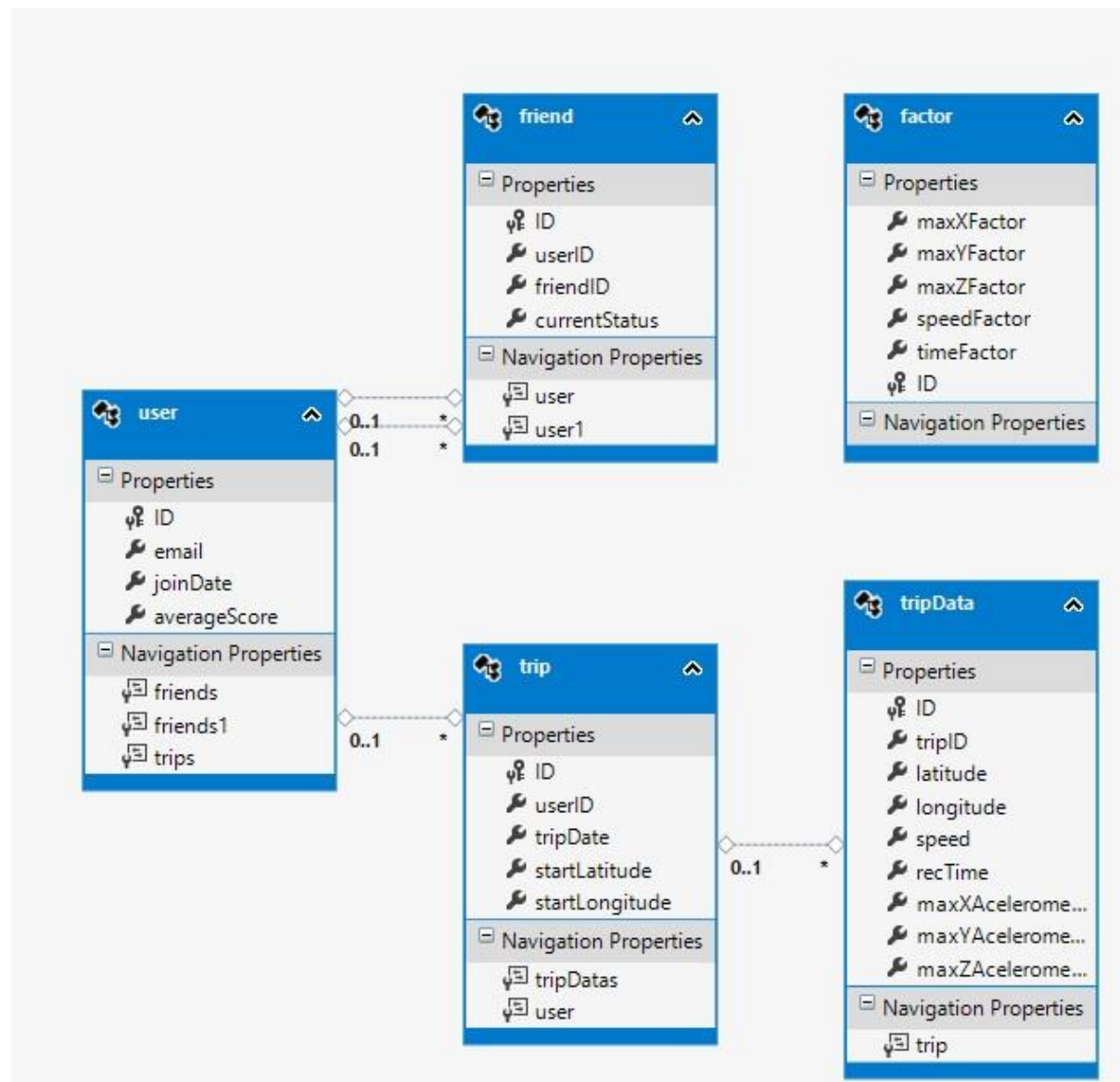Tables relate to the storage of data, description of metadata, and algorithmic modifiers

Figure 3- Database Organisation Description

Use Cases

All use cases described here-in are in direct compliance with the initial specification as released by the company, DVT (DVT, 2015). As expounded upon the first meeting with the client.

Critical

userRegistration

Description

This use case will be used by the android client and the web interface to allow new users to save their information in the database.
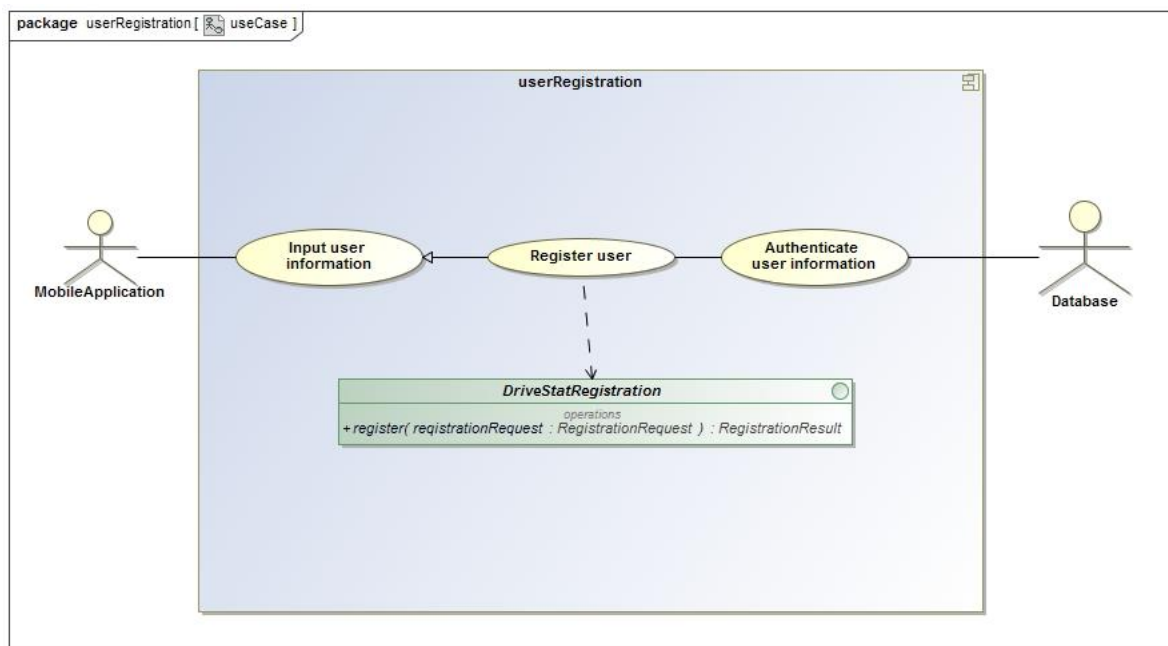
Use Case

Figure 4- User Registration use case diagram

Service Contract

The Service contract for the userRegistration service is shown in Figure x. This is a simple database element creation service.
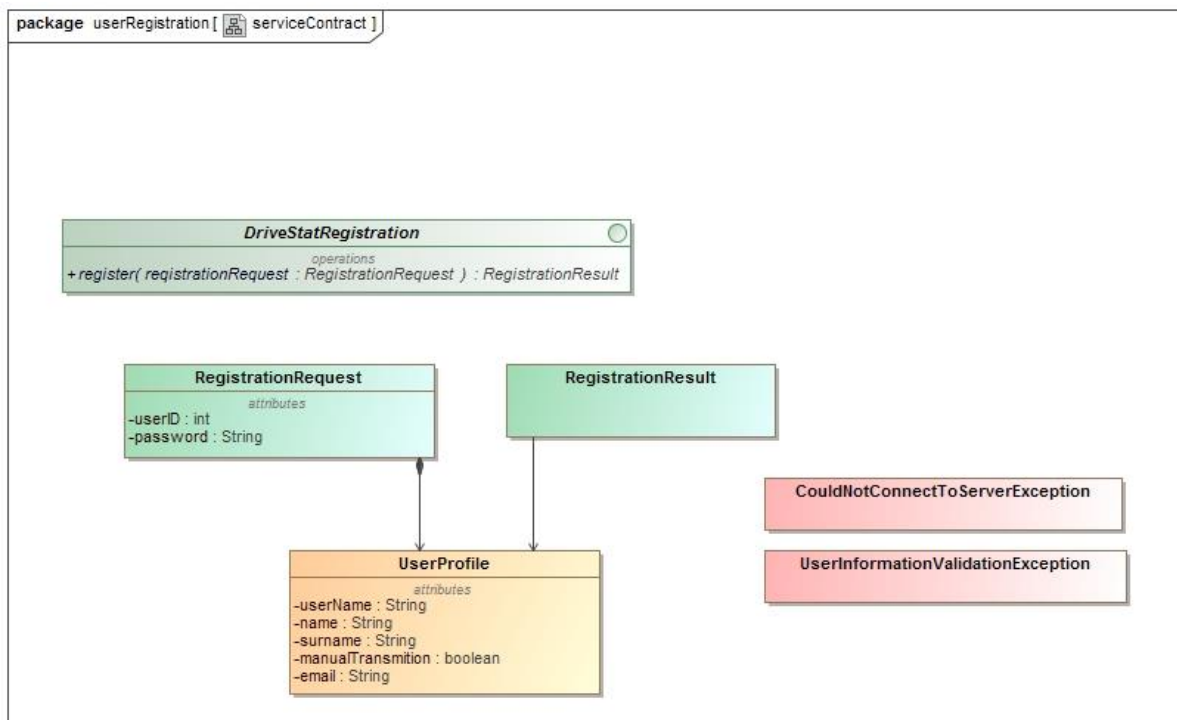
Figure 5- User Registration service contract

Process Specification

The process specification contract for the userRegistration service is shown in Figure x. This is a simple database element creation specification.
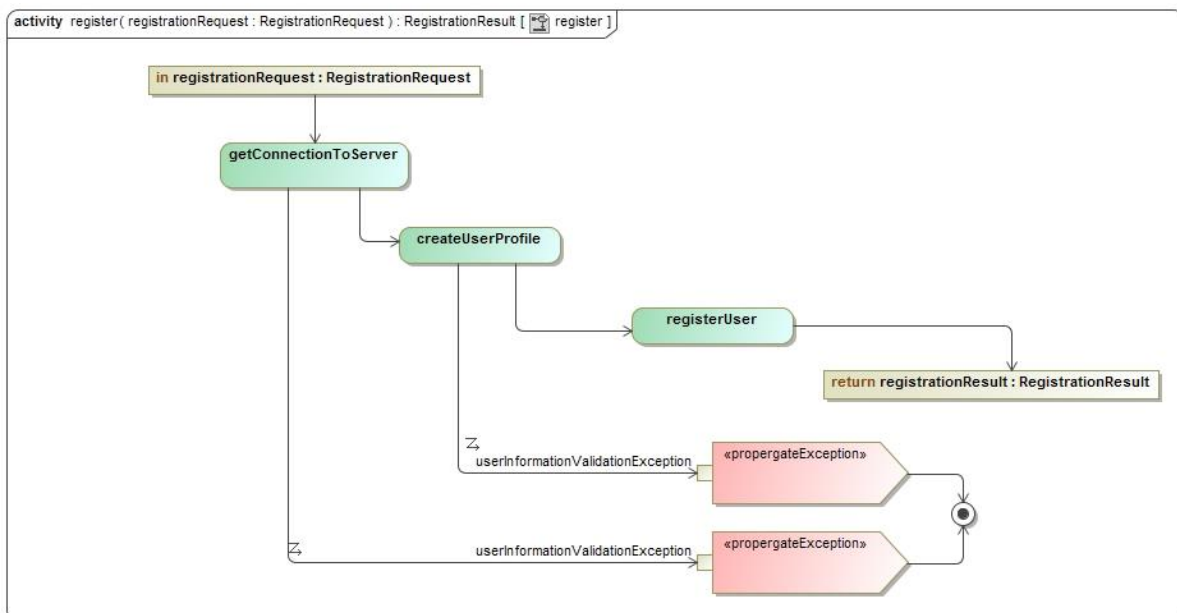

Figure 6 User Registration process specification

userLogin

Description

This use case will be used by the android client to initiate login, via the server, for use on the client-side Android application. This use case extends to direct login of a system admin for server manipulation.
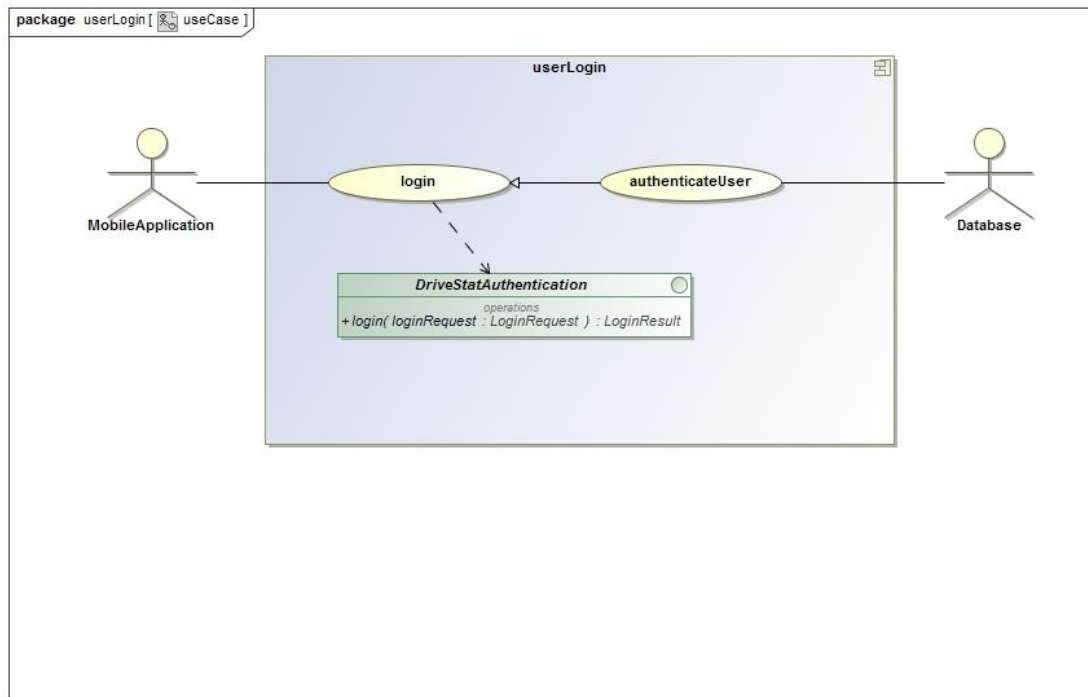
Use case

Figure 7 - User Login use case

Service Contract

This service contract outline the process used by the android client to initiate login, via the server, for use on the client-side Android application. This contract extends to description of the direct login of a system admin for server manipulation.
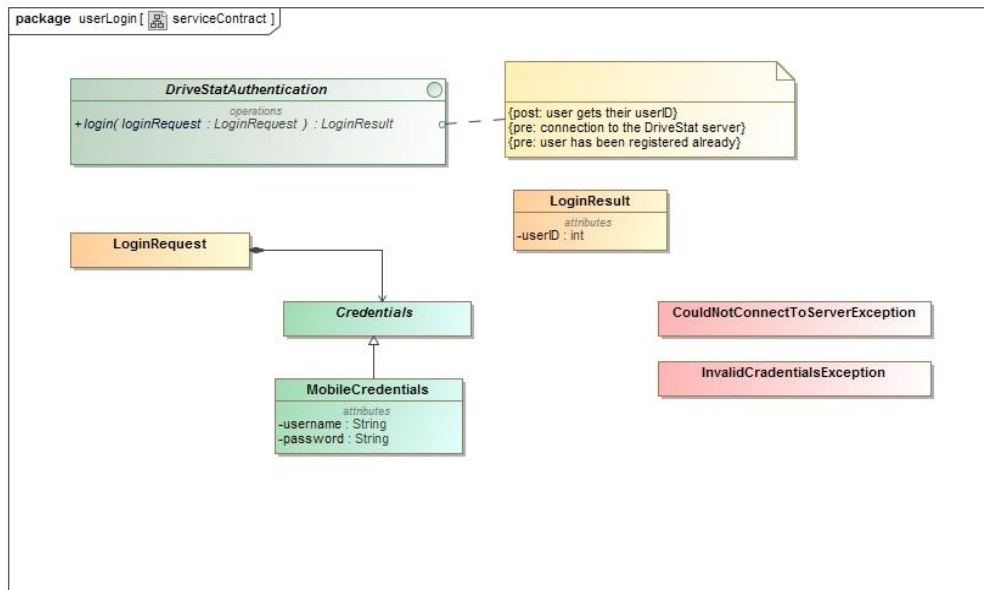
Figure 8- User Login service contract

Process Specification

This process specification outline the process used by the Android client to initiate login, via the server, for use on the client-side Android application. This specification extends to process description of the direct login of a system admin for server manipulation.
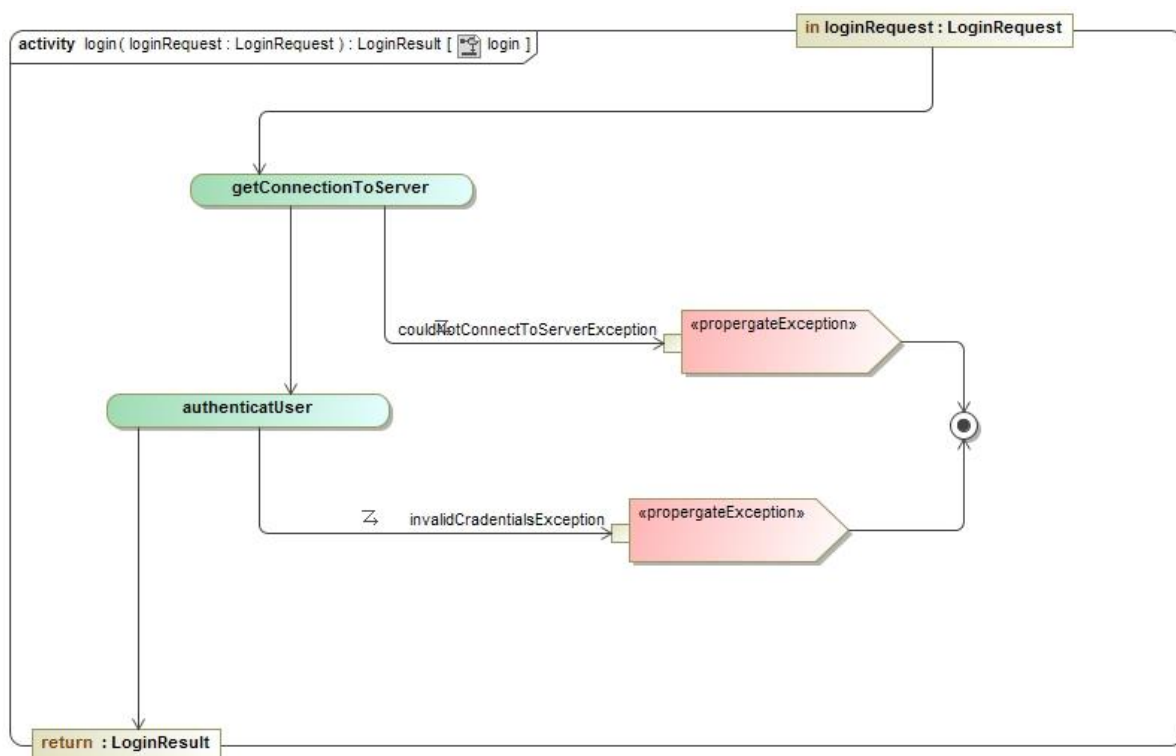
Figure 9 - User Login process specification

TripMonitorState

Description

This use case will be used by the user to activate and deactivate the monitoring of the phones sensors.

Use cases

Figure 10 - Start Recording Trip use case

Figure 11 - Stop Recording Trip use case

Service Contract

The Service contract for the Trip Recording service is shown in Figure x. This is a dual functioned service providing sensor monitoring and feedback to the database.
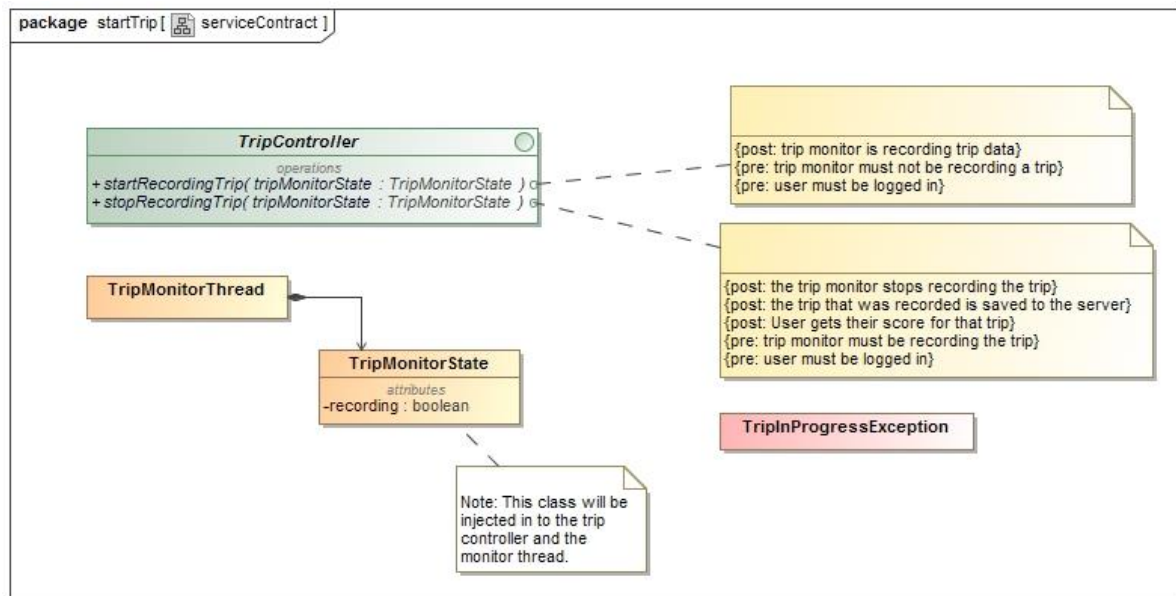

Figure 12 - Start Trip service contract

Process specification

The process specification for the Trip Recording service is shown in Figure x. This is dual-functioned specification outlining sensor monitoring and feedback to the database.
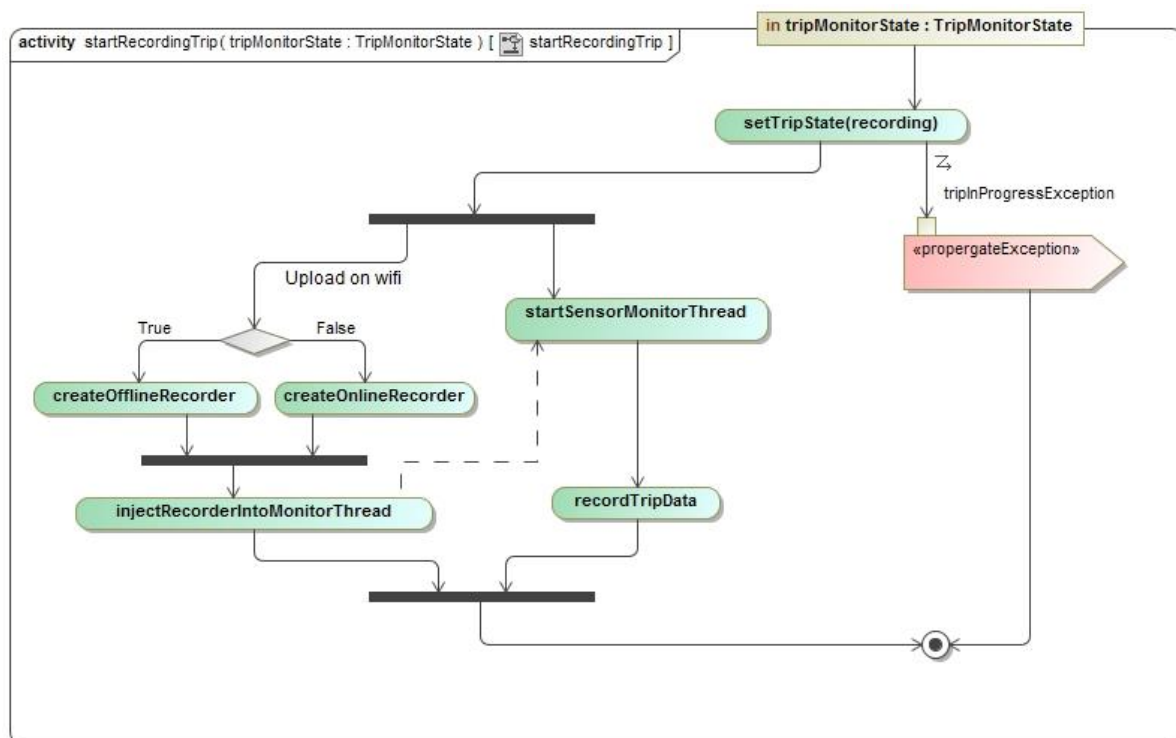

Figure 13 - Start Recording Trip service contract

Important

DisplayTripInformation

Description

This use case will be used by the user to receive a graphical display of the use information from their current trip.
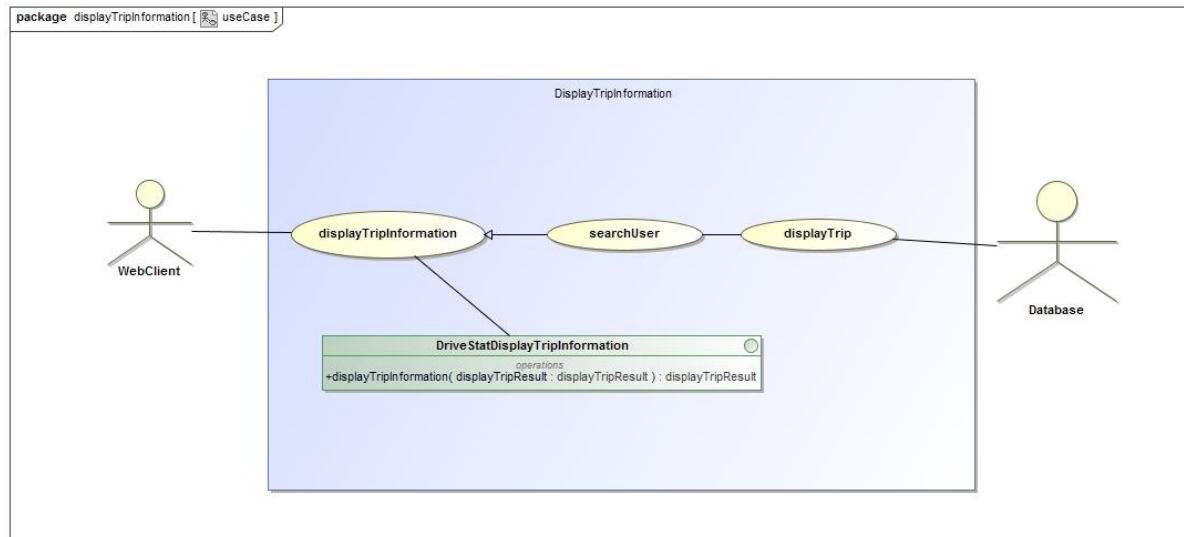
Use case

Figure 14 - Display Trip Information use case

Service Contract

This service contract describes the mechanism by which the user will receive a graphical display of the use information from their current trip.
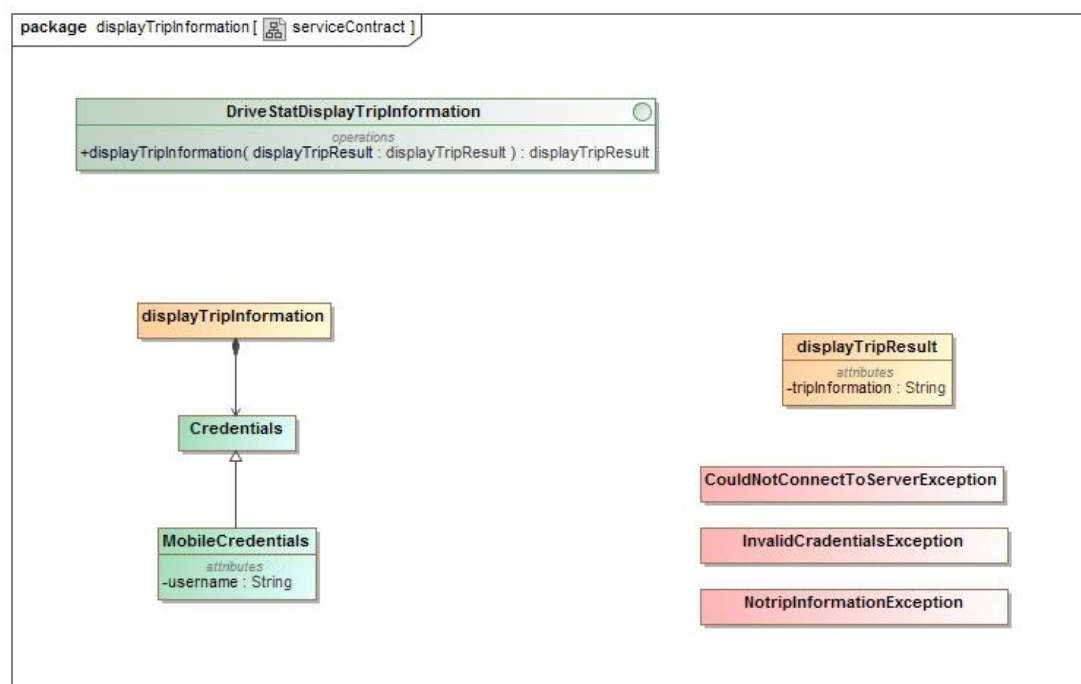

Figure 15 - Display Trip Information service contract

Process Specification

This process specification describes the mechanism by which the user will receive a graphical display of the use information from their current trip.
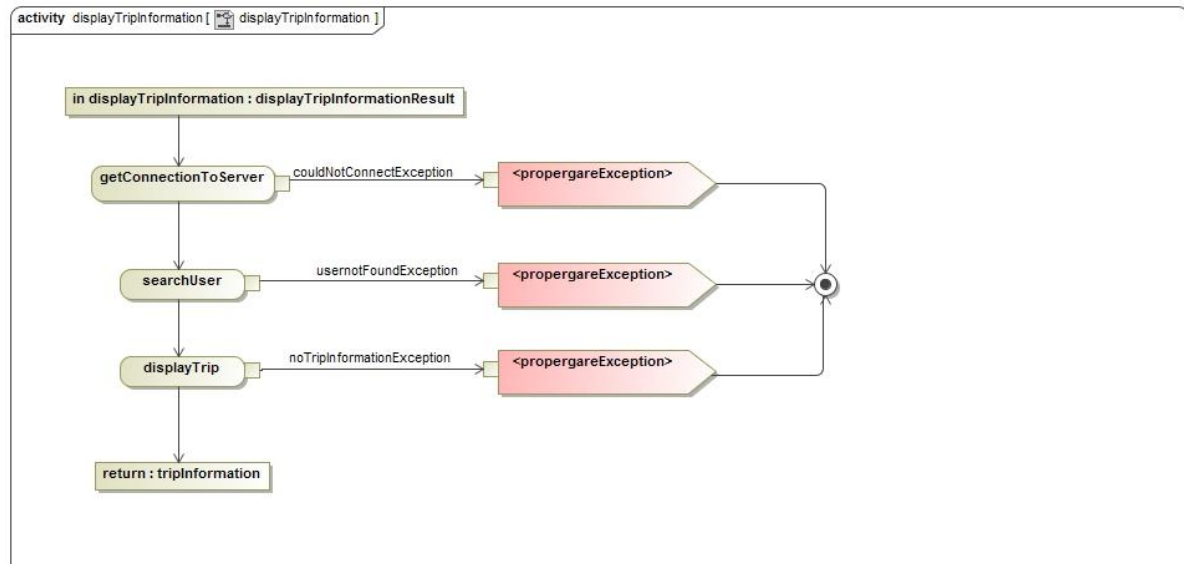

Figure 16 - Display Trip Information process specification

Nice-To-Have

viewComparedResults

Description

This use case describes the mechanism by which the user will be able to compare their trip information against that of their "Friends".

Use case

Figure 17 - View Compare Results use case

Service contract

This service contract describes the mechanism by which the user will compare their trip information against that of their "Friends".

Figure 18 - View Compare Results Service Contract

Process specification

This process specification describes the mechanism by which the user will be able to compare their trip information against that of their "Friends".

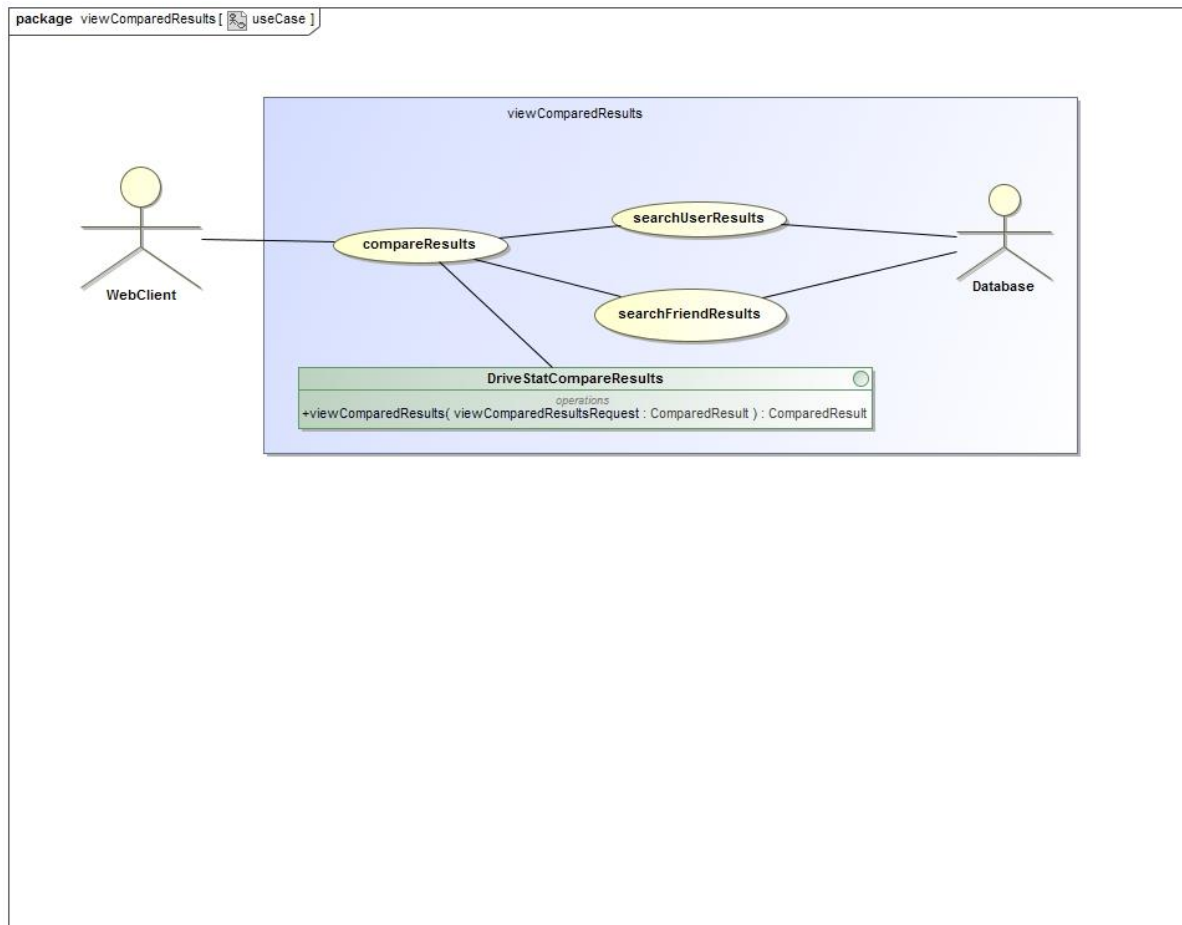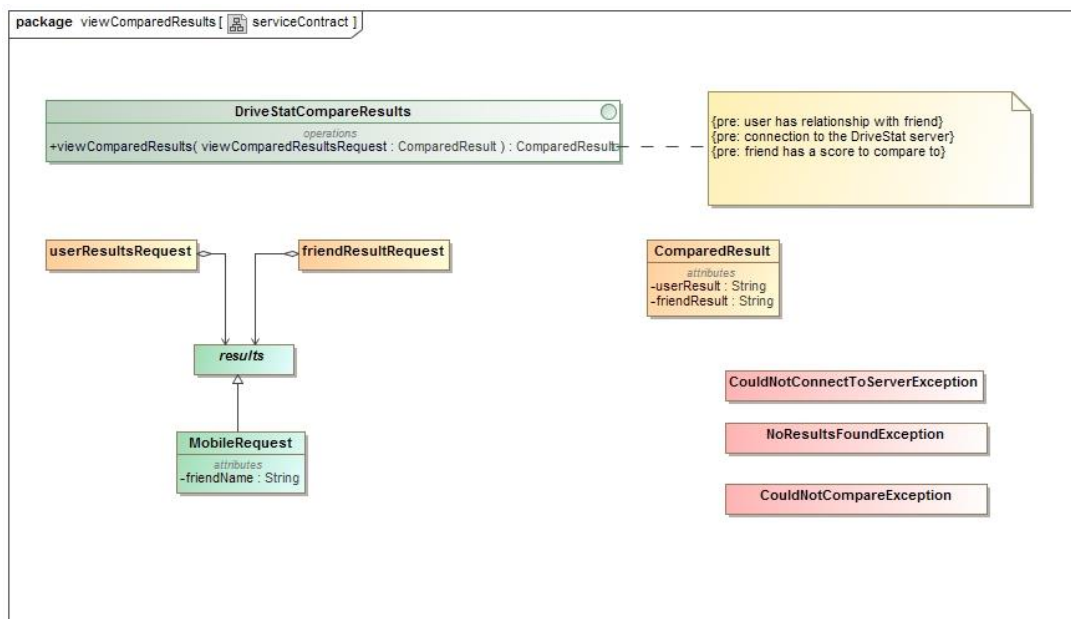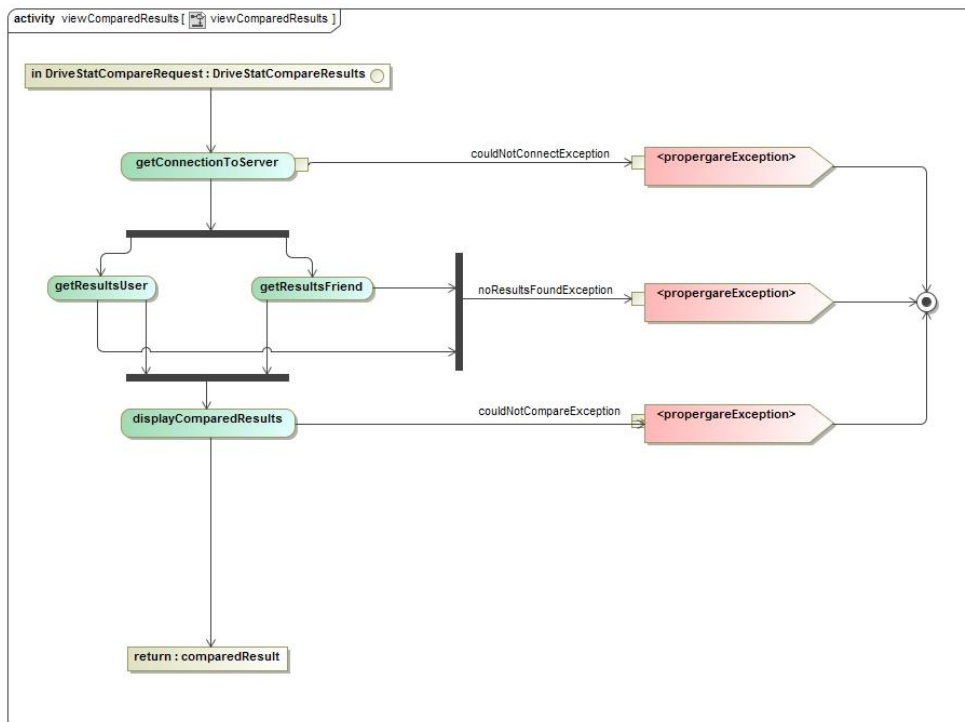*Figure 19 - View Compare Results Process specification*

May 2015

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
	Develop core functionality of server and app					
31						

June 2015

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1 Obtain test data	2	3 Develop Score algorithm and interfaces	4	5	6
7	8	9 Testing and Documentation updating	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Bibliography

DVT, 2015. *DVT DriveStats,* s.l.: DVT.