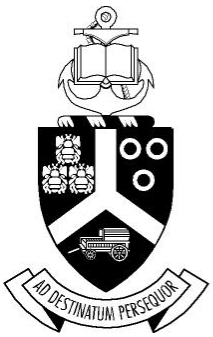

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Department of Computer Science

COS 301 - Software Engineering

OnlyRugby
Functional Requirements

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September 25, 2015

Software Requirements Specification and Technology Neutral Process Design

OnlyRugby Mobile App/Main Project

Version: Version 1.0 Beta For further references see gitHub. September 25, 2015

Contents

1 Functional requirements

1.1 Introduction

The OnlyRugby App will be used to log various types of match time data and then store that information on the OnlyRugby database (which can also be accessed by the OnlyRugby website). The purpose of this document is to identify and explain all possible use cases associated with the app and to show how the functional aspects of the app interact with each other.

1.2 Use case prioritiation

Critical

- Log in/log out
- Load info (from database)
- Game time
- Scoring

Important

- Substitutions
- Discipline

Nice-To-Have

- Line-outs
- Scrums
- Tackles
- Possession
- Turn-overs
- Clean breaks
- Offloads
- Rucks
- Mauls

1.3 Use case/Service contracts

Use Case	Pre Condition	Post Condition	Description
Log in/log out	The app has to be connected to the internet in order to verify the information. Only an administrator of a rugby page or user given rights can log in to use the record details part of the app. Once the user is logged in he/she can then use the logout functionality to log out	The user is logged in now and information on upcoming games from the page that the user is a part of should be displayed. The user can then choose the game to record details for.	This use case provides a method for logging in to record match data and log out once done.
Load info	The app has to be connected to the internet in order to load the info from or to the server (and by extension, the database). Specific info can only be loaded when a person is logged in (like profile information). Statistical information being uploaded needs to know and verify where it is being sent to (i.e. to a player's profile or a team's statistics page).	The information should be loaded into the app from the server and statistical match information should be uploaded and stored in the database via the server, in the correct locations where it is meant to go. This is done by verifying the destination and the data being received each time.	This use case provides a method of uploading and downloading data from the database via the server, to and from the app.
Game time	The user must be logged in, the app must be aware that a match is scheduled for play and the game state should be "Not started".	The start and end time of each half of the match along with game pause intervals and reasons should be persisted to the database. The game state should be set to "Finished".	This use case provides an interface for capturing the game time of a rugby match.

Scoring	The app must be aware that a match is currently being played (i.e. scoring can only occur during game time), the app must be aware of which teams are playing and also be aware of which players are currently on the field (i.e. it must know if any player substitutions have taken place).	All scores must be verified by the user and then uploaded to the database where it can be added to team-, player- and league statistics (including points scored, at what time during the match the points were scored, if it was a try, drop kick, etc).	This use case provides a system whereby event-, team- and player statistics can be gathered during a match so that it can be viewed, analysed and compared with at a later stage.
Substitutions	The app must be aware that a match is currently being played (although substitutions can still be allowed at half-time). The app must have a list of players currently on the field as well as players in reserve.	After a substitution is made the on-field team and the list of reserve players must be updated accordingly, the time of the substitution will be logged and any special reasons for the substitution (such as injury) will be noted.	This use case provides a way of logging changes in the on-field team (which is important to know for some other functions like Scoring). This use case also provides additional statistical information about the match such as which players were forced off the field due to injury.
Discipline	The app must be aware of which teams are playing and also be aware of which players are currently on the field.	After a player has been given a card, the user must specify the player, the reason for the card and the colour of the card(white/yellow/red). The incident will be added to the relevant player's profile.	This use case provides a way of quickly logging both the player's infraction and the card reveived.

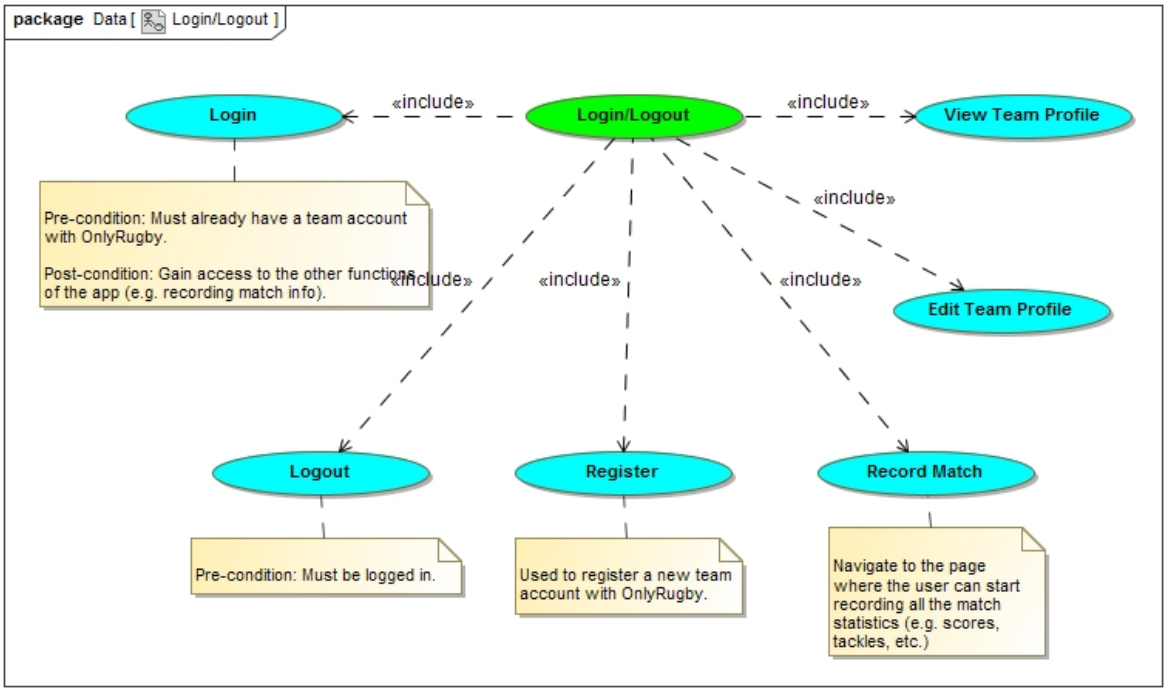
Lineouts	The app must be aware that a match is currently in play (i.e. lineouts can only occur during game time) and the app must be aware of which teams are playing.	This function gathers information on when a lineout occurred during game time, which team was responsible for throwing in the ball, the identity of the player throwing in the ball, whether or not the lineout was successful, if successful which team won the lineout, and a reason if the lineout failed.	This use case provides a way of quickly logging information about lineouts.
Scrums	The app must be aware that a match is currently being played and a list of all the players (both sides) currently on the field. It should also know the conditions for when a scrum can occur.	The scrum onwer and winner should be verified and statistics saved	This case provides a way to save statistics of a scrum and to see what percentage a team wins of their own scrums
Tackles	The app must be aware that a match is currently being played and have a list of all players (both sides) currently on the field to be able to log tackles made between teams.	The tackler's identity should be verified and the statistics added to the relevant player's profile in the database.	This case provides a way to be able to log how well some players can defend by seeing how many successful tackles they have made throughout their career.
Possession	The app must be aware that a match is currently being played and know which two teams are currently on the field, in order to log the possession of each team, during the match.	The percentage of ball possession by each team during the match must be recorded, then logged on the respective teams' profiles	This use case provides a way of logging a team's posession, during a match.

Turn-overs	The app must be aware that a match is currently being played and which teams are currently playing (individual players as well).	The name of the player who performed the turn-over must be logged.	This use case provides a way of quickly logging information about turn-overs.
Clean breaks	The app must be aware that a match is currently being played and which teams are currently playing with their individual players.	The name of the player who perfromed the clean break must be logged.	This case provides a way to track clean breaks and which player performed the clean break.
Offloads	The app must be aware that a match is currently in play (i.e. offloads can only occur during game time) and the app must be aware of which teams are playing.	The team and identity (name or player number) of the player that made a successful offload should be persisted to the database.	This use case provides a way of quickly logging information about offloads.
Rucks	The app must be aware that a match is currently being played (i.e. rucks can only occur during game time) and the app must be aware of which teams are playing.	This function gathers information on when a ruck occurred during game time, which team was defending in the ruck and which team "won" the ruck (i.e. if possession of the ball changed then the Possession function will also be notified).	This use case provides a way of quickly logging information about rucks.
Mauls	The app must be aware that a match is currently being played which teams are currently playing (individual players are not a necessity).	It should be logged which team won the maul and if the ball was turned over (the other team won the ball) or not.	This use case provides a way to represent how many mauls were present in the match, by logging each time a player tried to defend the ball on the ground.

1.4 Required functionality

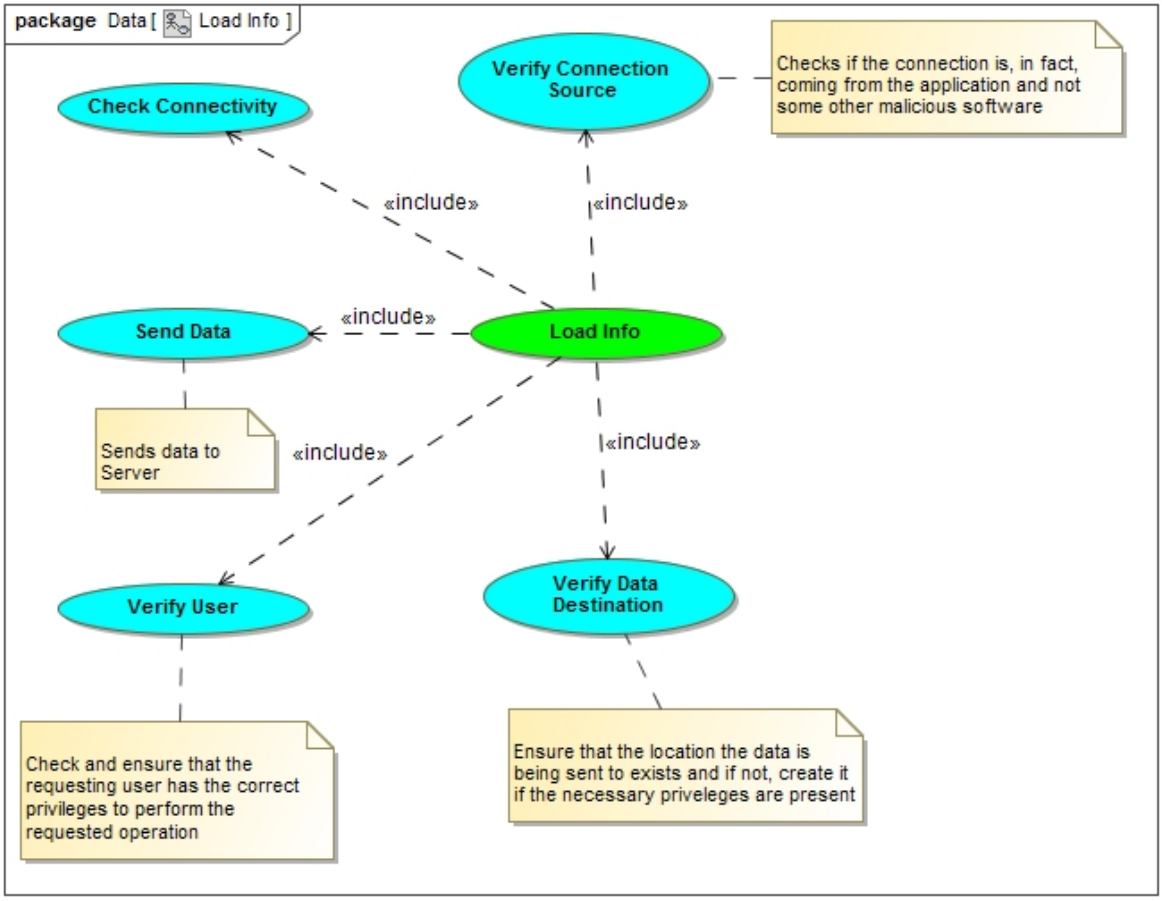
- **Log in/log out**

  The login/logout will be used to let people log in that is an administrator/privileged user of a rugby page on the onlyRugby site. This will verify if the user has the right credentials to be scoring for a team. Also check the rugby page to see if there are any upcoming games the team will be playing to record the details of the match.



- **Load info**

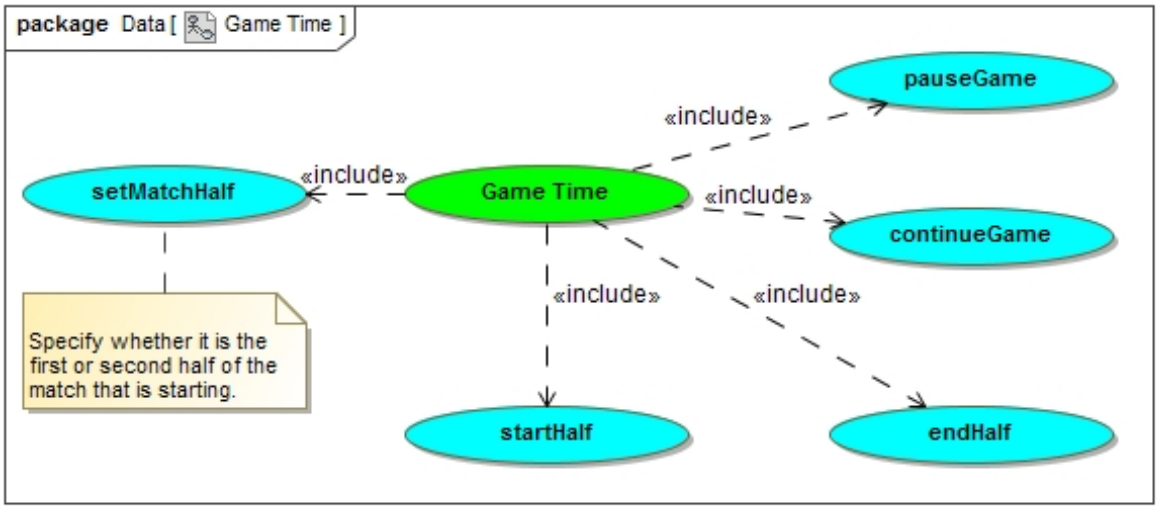
  The Load Info module will be used to transfer information to and from the database, using the server. All destinations are to be verified before attempting to access them and incoming connections to the server need to be verified that they are from a trusted source.



- **Game time**

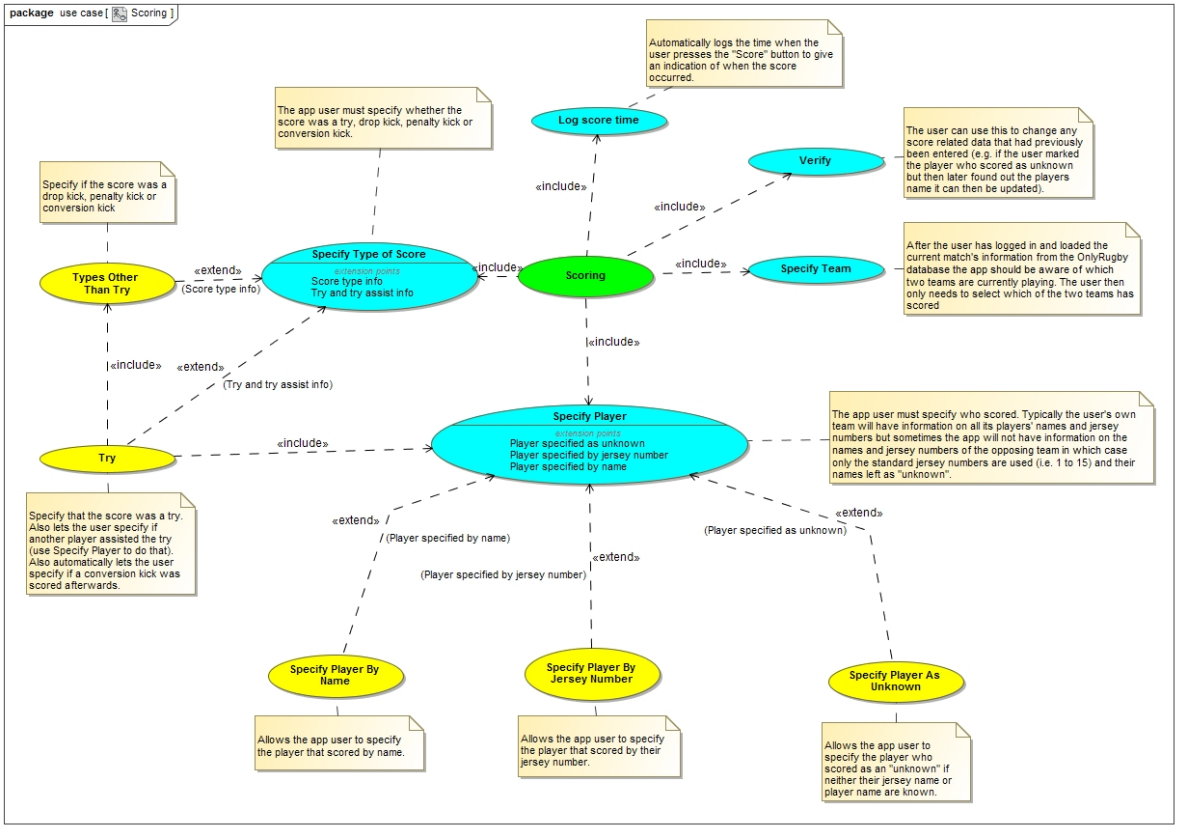
  This use case will be used to log the start and end time of each half of a match, as well as any intervals during which time was lost (the game was paused) and a reason for this time loss (injury, substitution, referee consultation, replacement of damaged player clothing).

Time.jpg



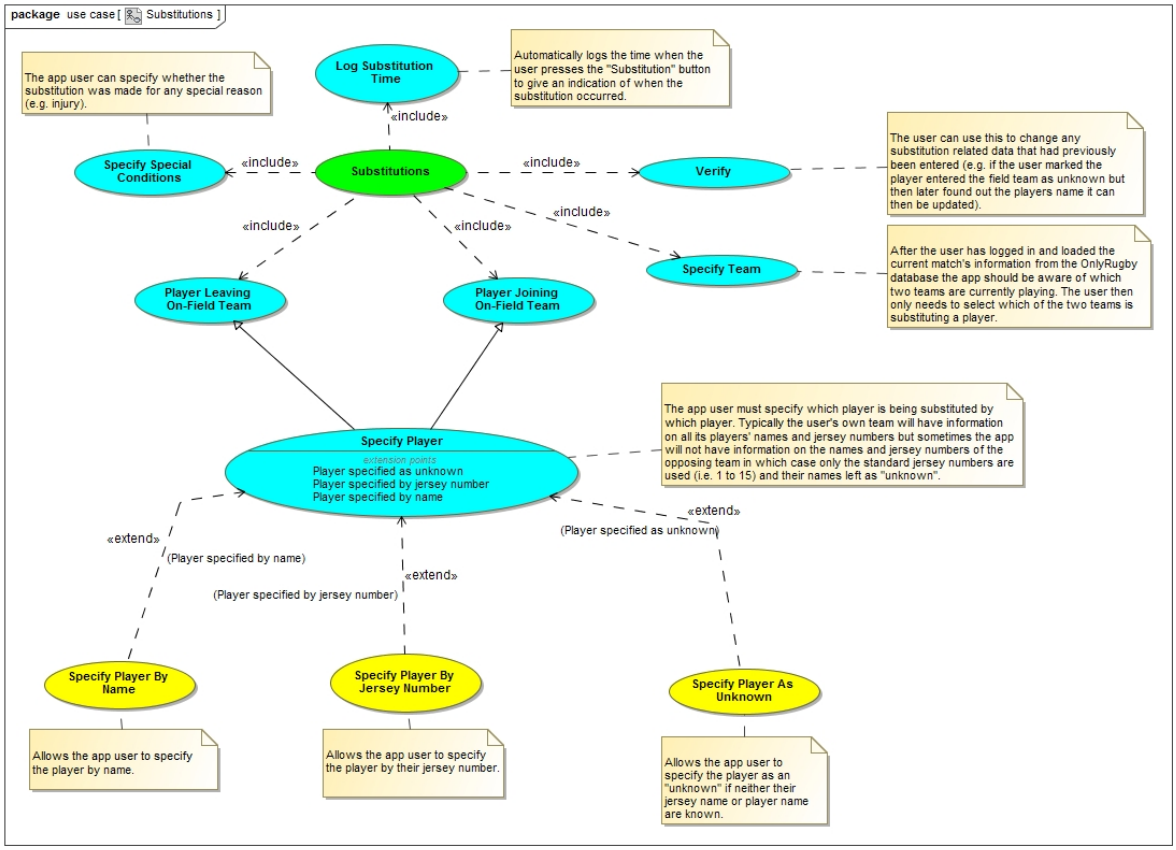
- **Scoring**

  This use case deals with logging, verifying and storing all the information related to scoring points during a match. When a player scores during a match the app user must use this use case to specify which team scored, the individual player who scored, if the player scored with a try, drop kick, penalty kick or conversion kick and (in the case of the try) if any other players should be credited with a try assist. This use case will also automatically log when the points were scored. All this information is then verified by the app user before it is stored in the database. Once stored this information can then be used to give team- and player statistics.



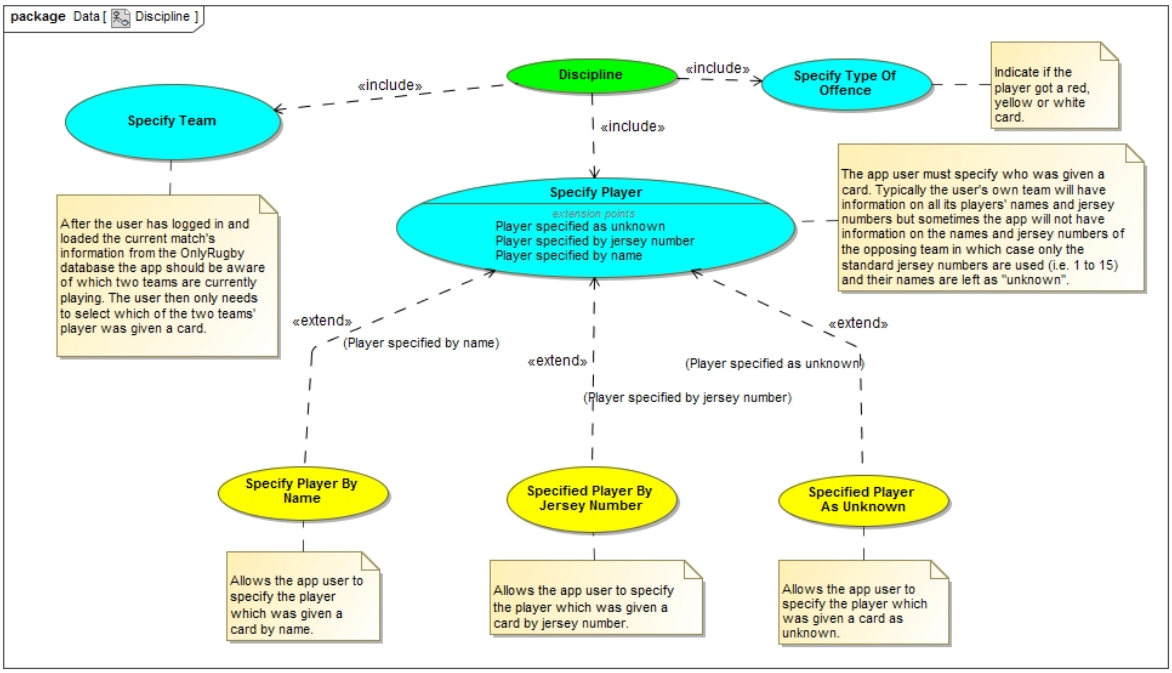
- **Substitutions**

  This use case deals with logging and updating any changes made to either teams on-field teams. When a team makes a substitution the user of the OnlyRugby app will use this use case to specify which team made the substitution, which players were swapped and if there was any special reason for the substitution. This use case will also automatically log when a player has been swapped. All this information is then verified by the app user before it is stored in the database. Once stored this information can then be used to give team- and player statistics.



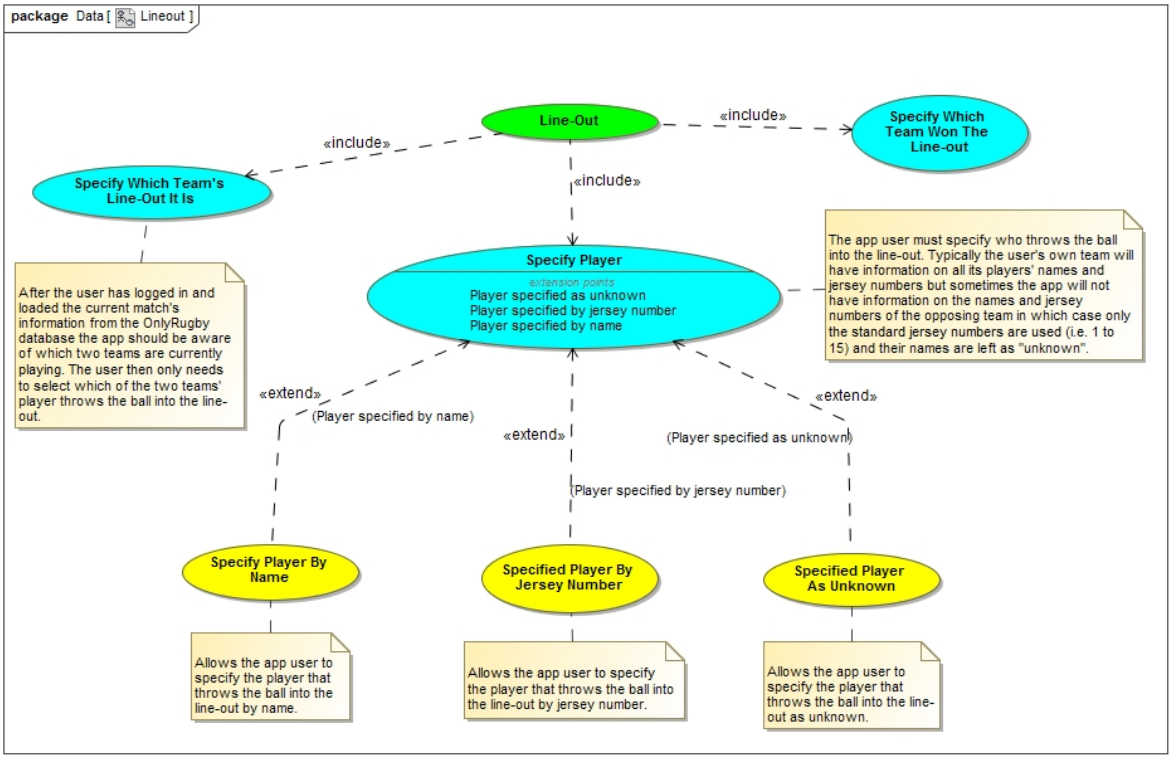
- **Discipline**

  This use case will be used to log any infractions and subsequent punishment for players. If a player is given a card, the reason for the card, as well as the colour of said card. This data will then be logged to the player's profile.



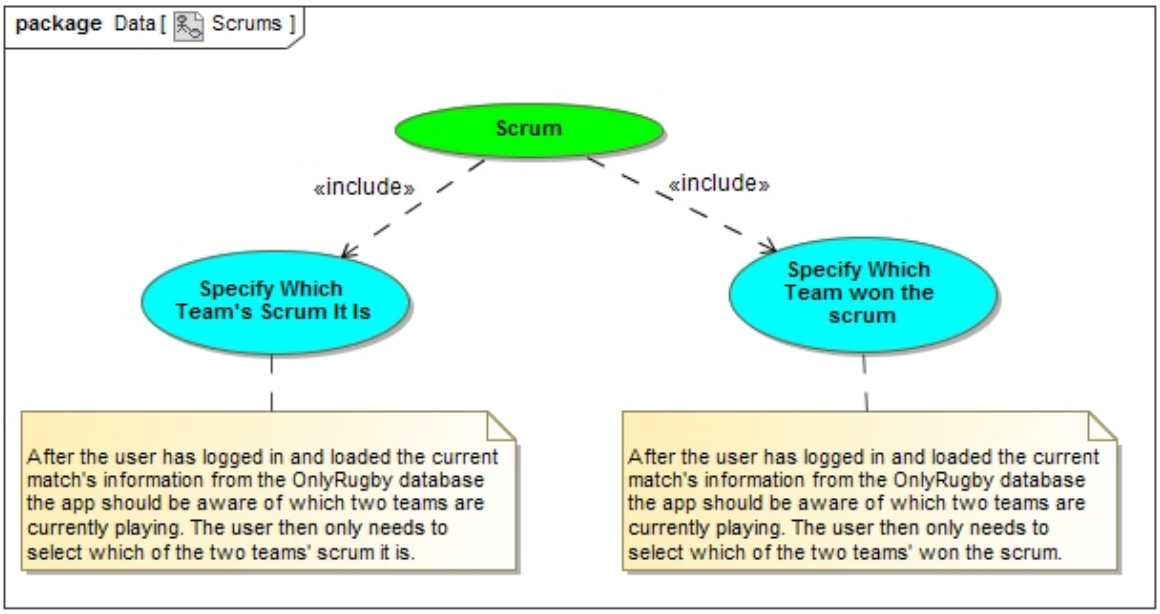
- **Lineouts**

  This use case will be used to log information on when a lineout occurred, which team was responsible for throwing in the ball, the identity (name or player number) of the player that threw in the ball, whether or not the lineout was successful, if successful which team won the lineout, and if unsuccessful a reason why the lineout failed.



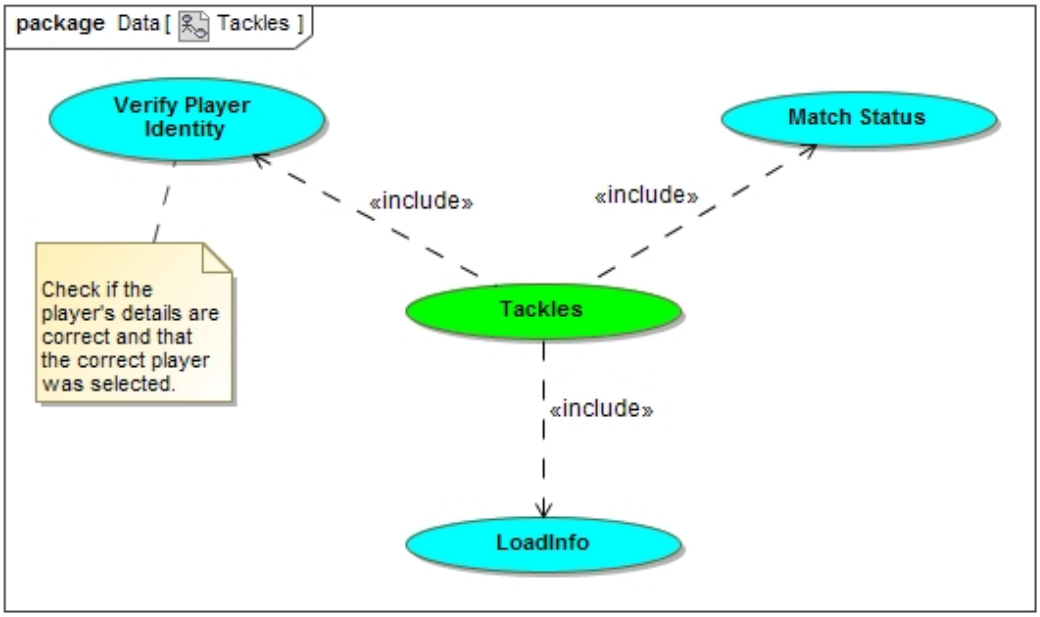
- **Scrums**

  This use case will be used to log information on when a scrum occurred, which team the scrum belonged to and which team won the scrum. The app can check if there are any current reserves on for any forwards or scrum half, and with this info record who was in the scrum.



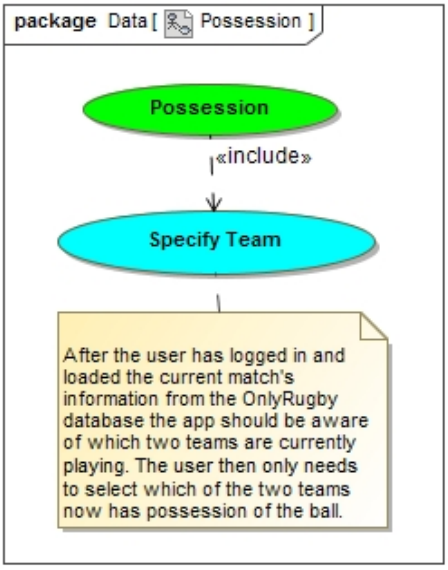
- **Tackles**

  This use case will be used to log the amount of tackles made, by which team member of which team and when it was made. Knowing who was tackled is not required, since it will not be recorded in their statistics.



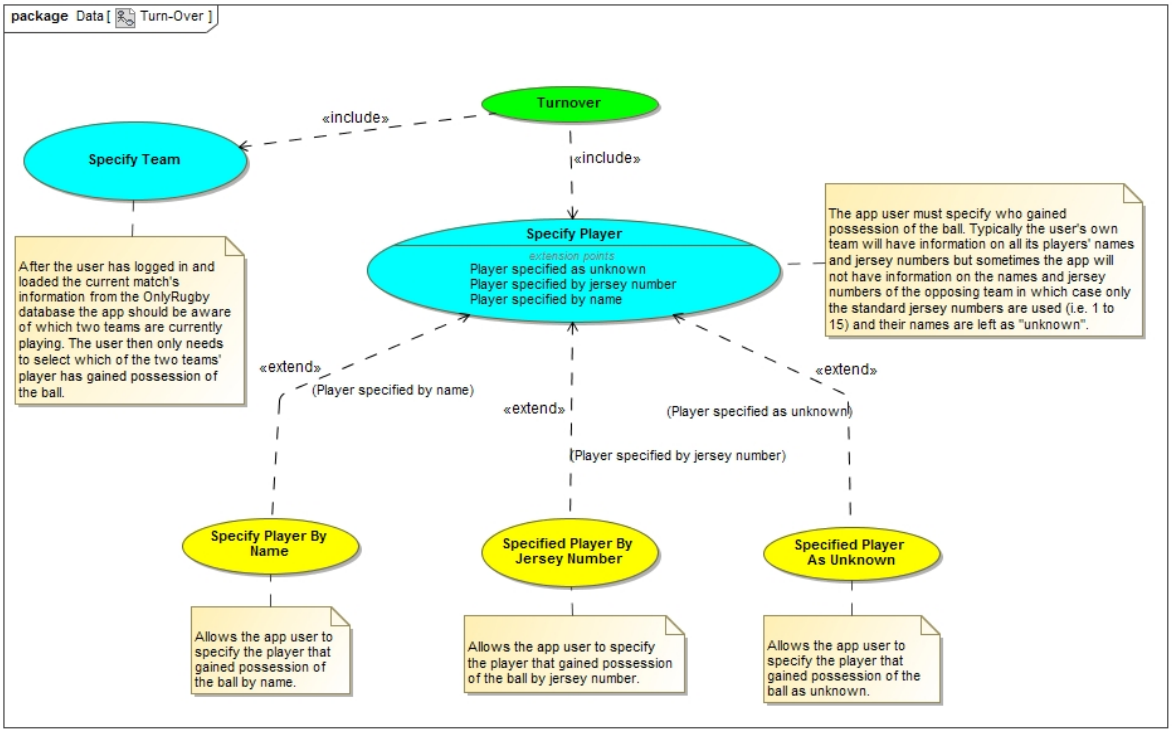
- **Possession**

  This use case will be used to log the percentage of each team's possession for a match. The application will ensure that the total percentages cannot exeed 100 percent.



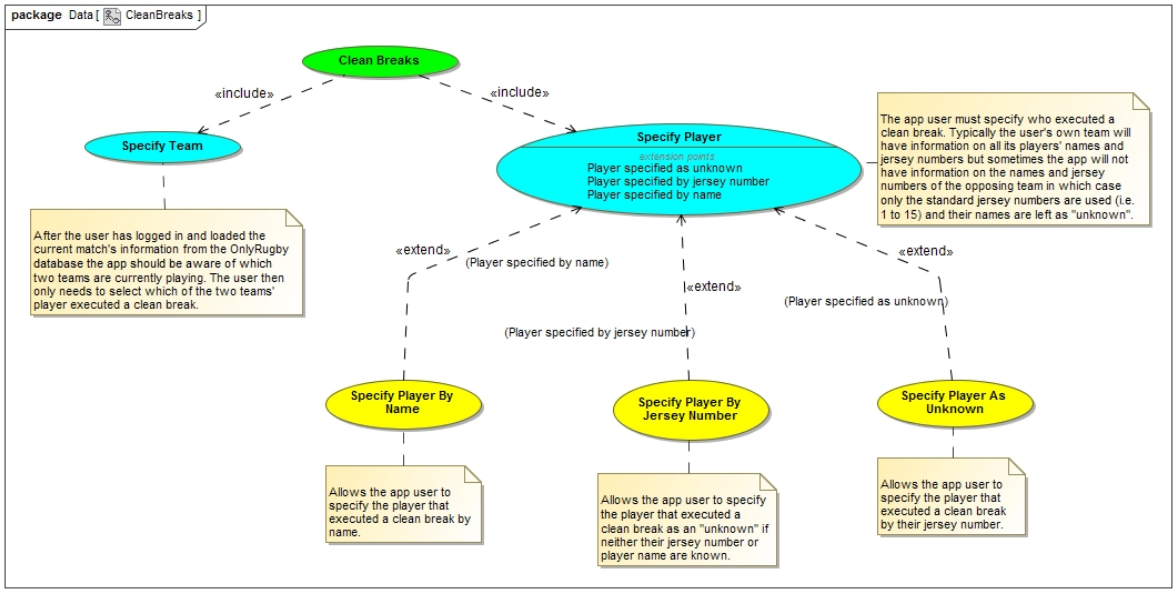
- **Turn-overs**

  This use case will be used to log the occurrence of a turn-over, which team got the ball, which team lost the ball and the players who were involved in the turn-over.



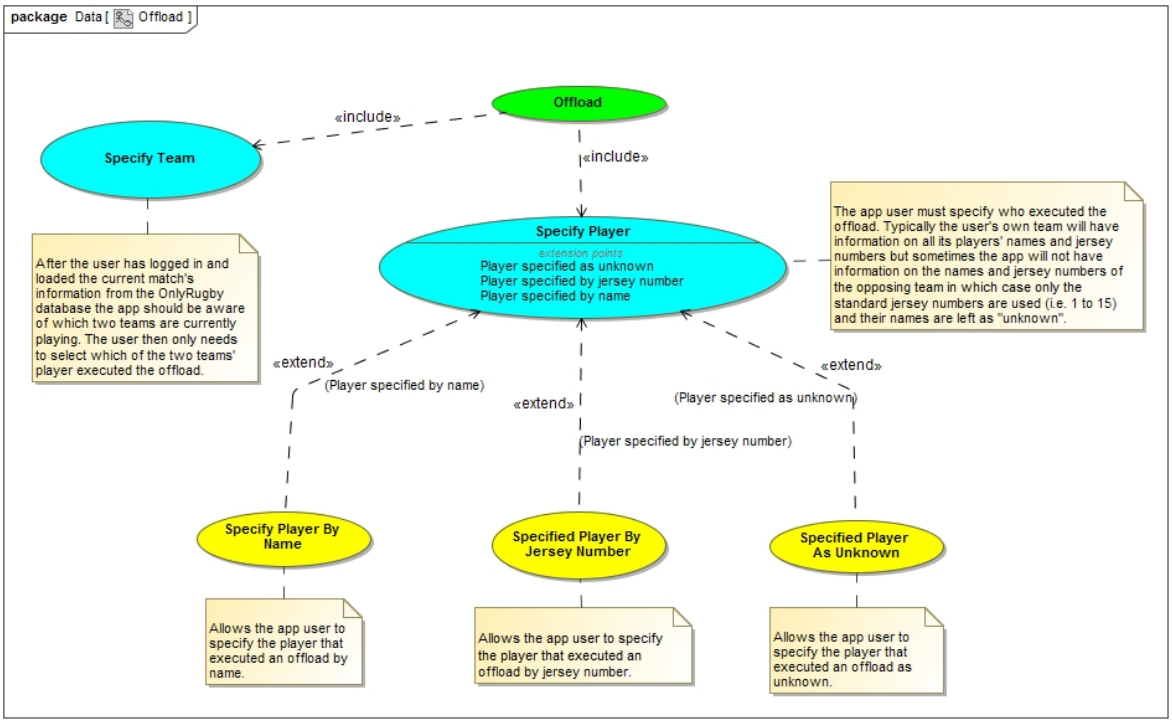
- **Clean breaks**

  This use case will be used to log when clean breaks occur, the player that got the clean break will also be recorded.



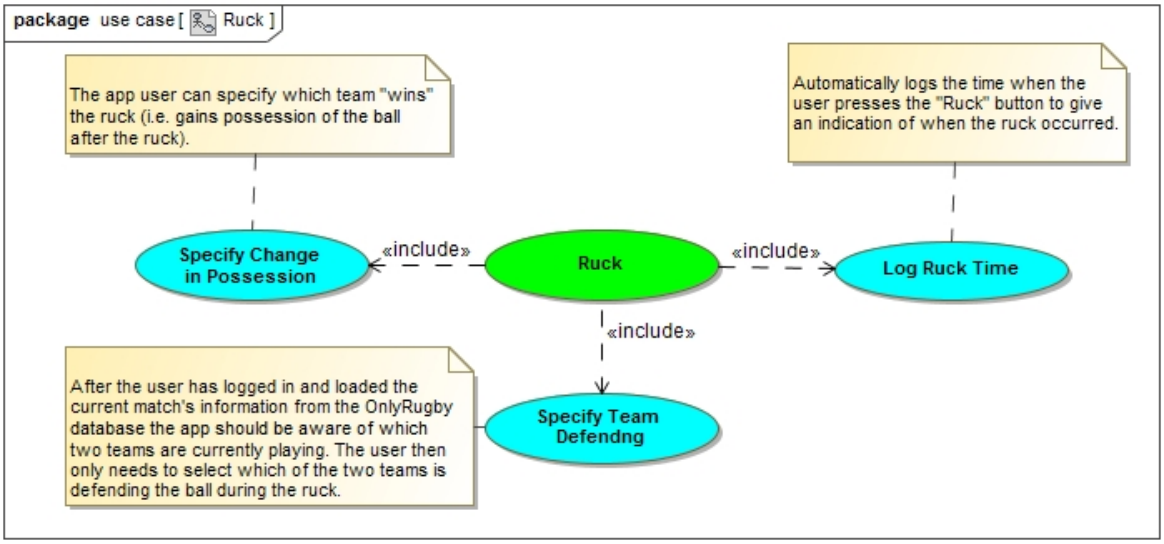
- **Offloads**

  This use case will be used to log information on when an offload occurs, which team performed the offload, and the identity (name or player number) of the player that performed the offload.



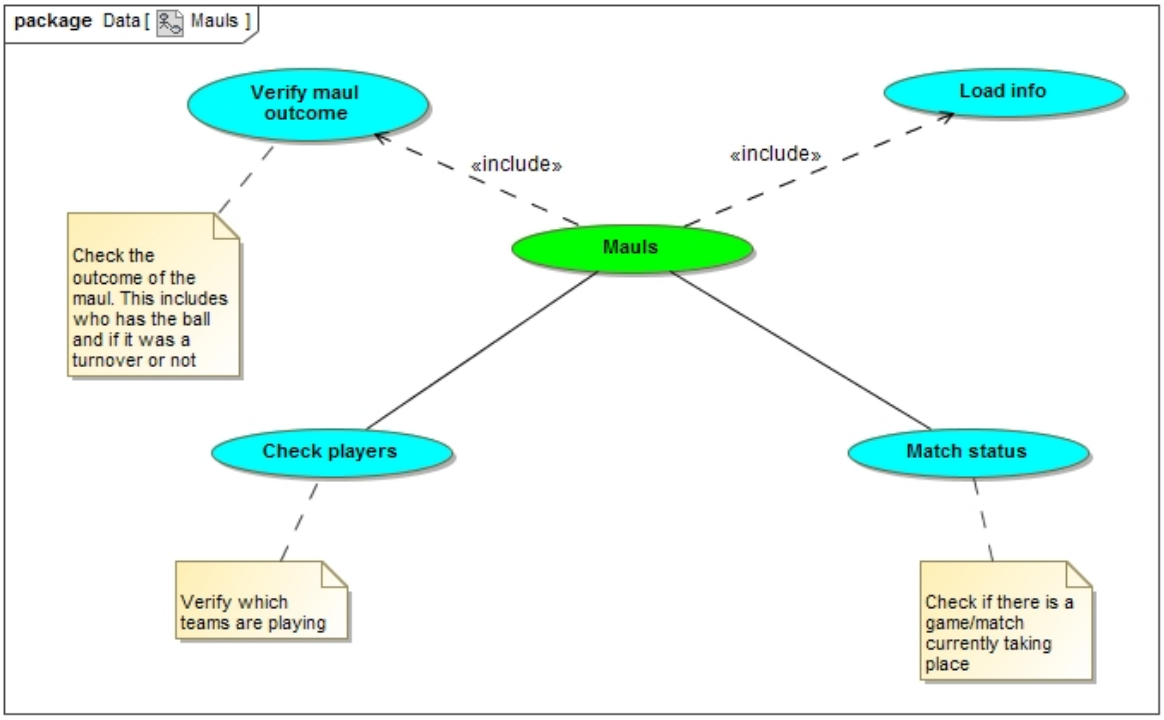
- **Rucks**

  This use case deals with logging any instance of a ruck during match time. When a ruck occurs during a match the OnlyRugby app user can then use this use case to specify which team was defending during the ruck and whether possession of the ball changed during/after the ruck. This use case will also automatically log when a ruck occurs. All this information is then verified by the app user before it is stored in the database. Once stored this information can then be used to give team- and player statistics.



- **Mauls**

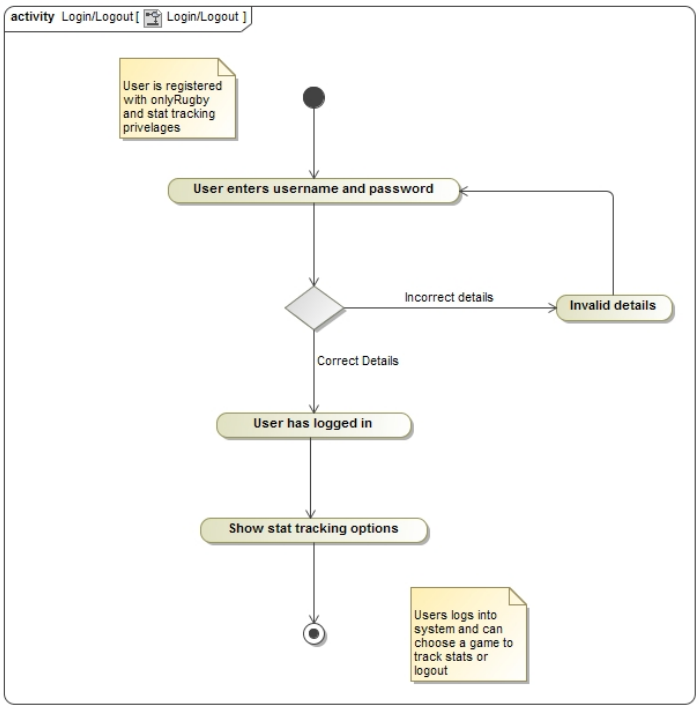
  This use case will be used to log how many mauls occurred throughout the match. It will record how many occurred, when they occurred and who won the outcome of the maul (whether there was a turnover ball or not, or if a penalty was conceded).



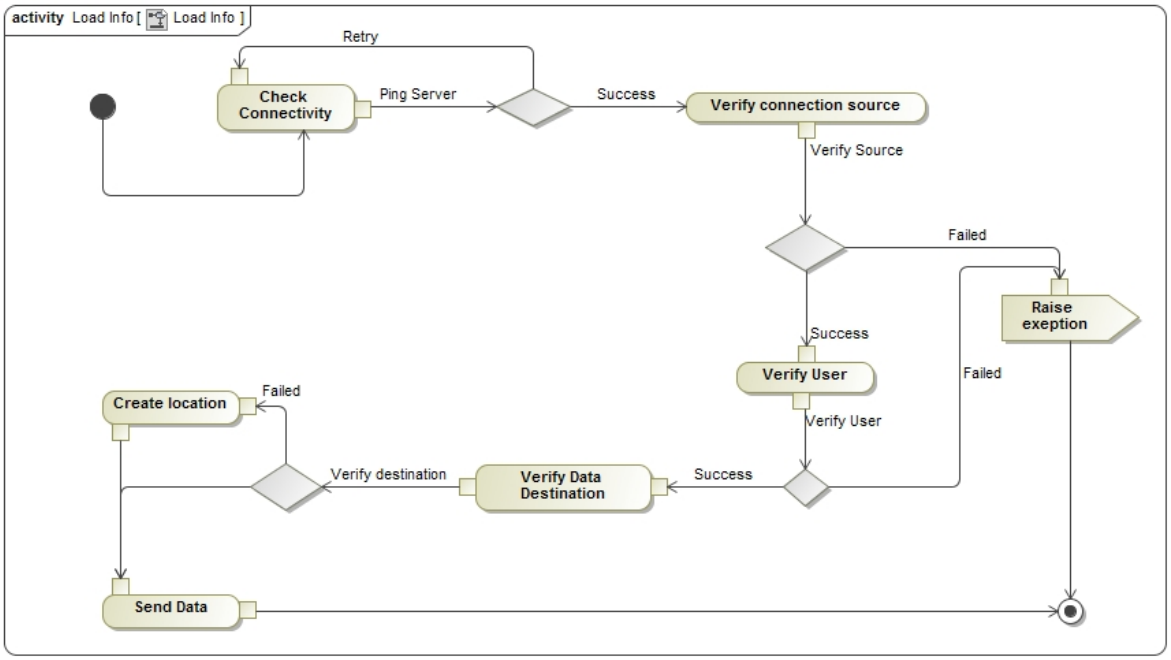
1.5 Process specification

The processes followed when using some of the more important functions of the OnlyRugby app system are displayed below:

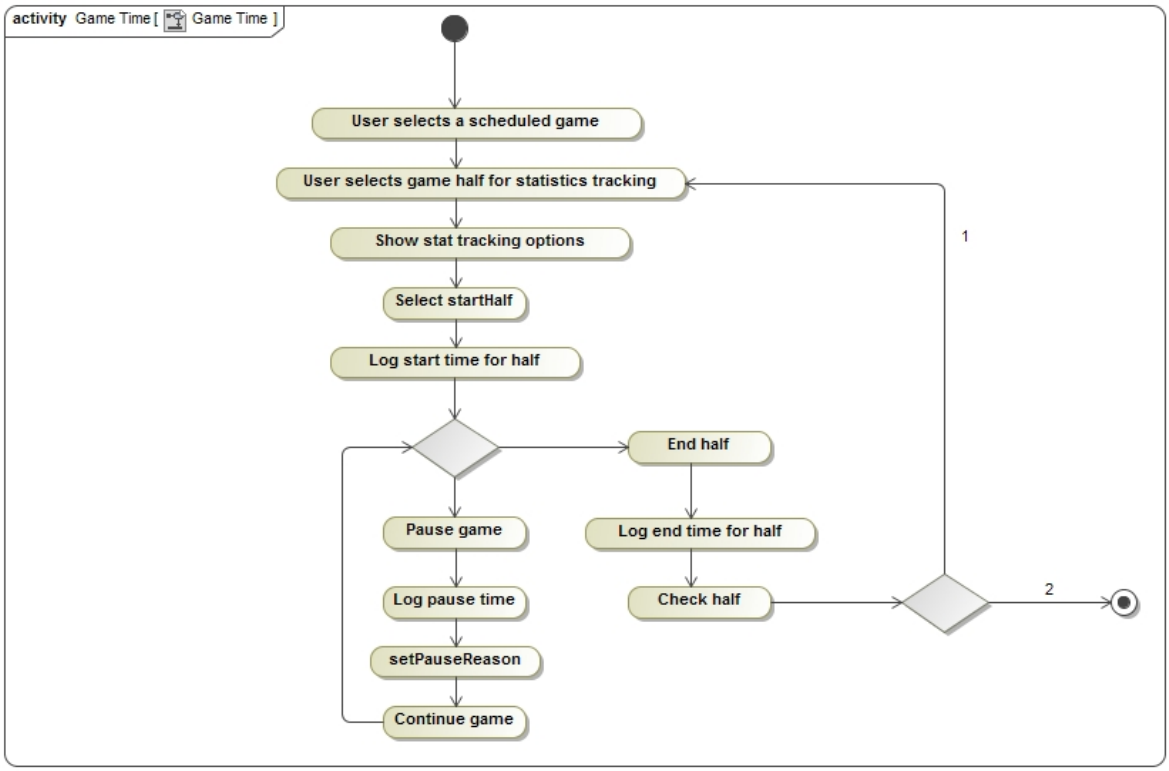
- Log in/ log out



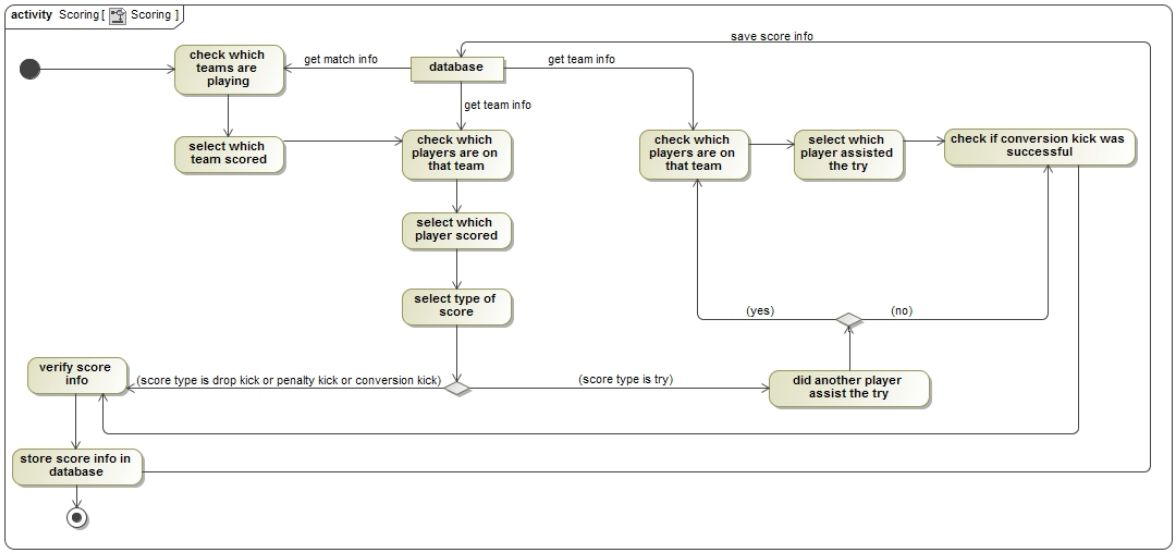
- Load info



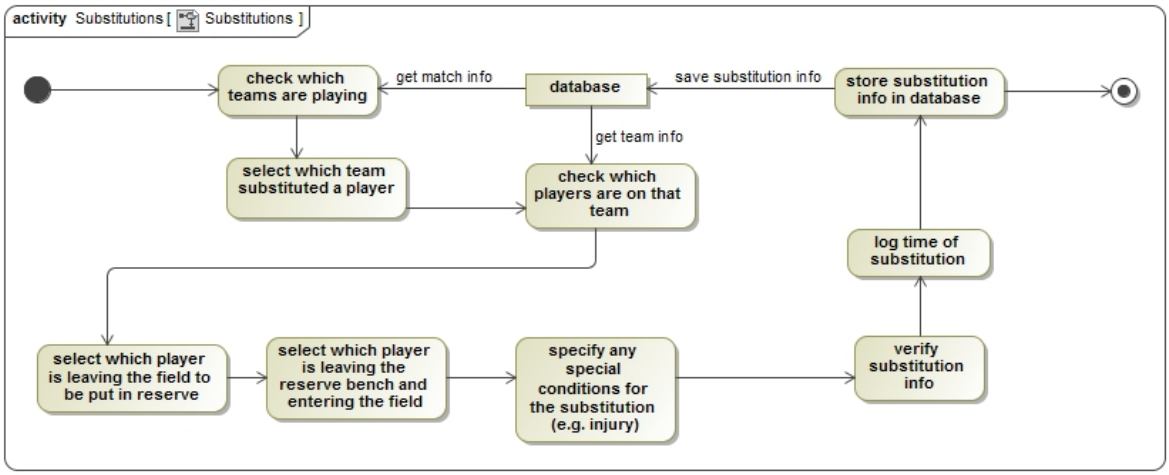
- Game time



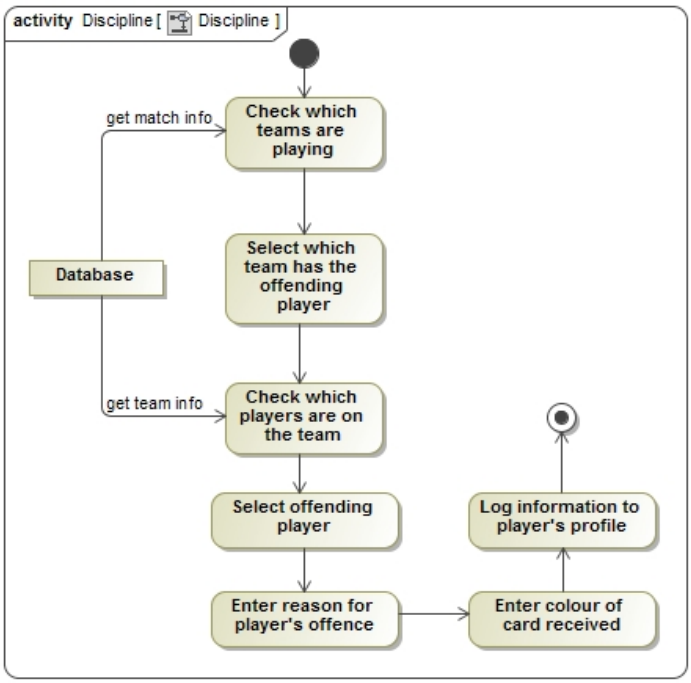
- Scoring



- Substitutions



- Discipline



1.6 Domain Model