Assignment 1 - group 48

Exercise 1 - Requirements Engineering

Must have :

A login screen where user can register and login

A database for all users (SQL/ perhaps online)

Functionality for collisions between paddle and puck

Functionality for collisions between walls and puck

A player can score a goal

Score count is displayed

Win and loss screens when the game is over

Functionality for multiplayer match making

A leader board (global win-loss/score count tracker)

Should have :

Customizable paddle features (acceleration, size, ..)

Customizable puck features

A friend list

Different playable tables

Unlockable paddles and pucks with different characteristics

Achievements system

A game currency for unlockables

A proper paddle collision

Could have :

Power up collectibles during match

Single player mode, computer controlled opponent (AI)

Different difficulty levels for single player mode

ELO system (skill rating)

Skill based matchmaking

Custom table builder

4 player matches

Knock off game mode (a lot of players)

Shouldn’t have :

Multiplatform

Touch screen support

Pixel level accurate collisions

3d graphics

Exercise 2 - Modelling Use Cases

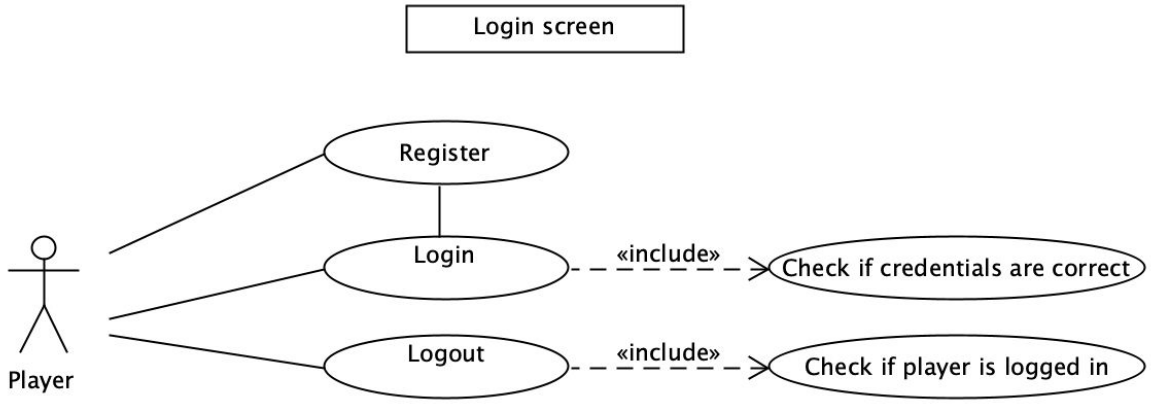
Assignment 1 - Deadline 29/11/2019 at 18h45.

Must Have Cases:

- Login Screen.
- Scoring goal.
- Score count.
- Win and loss screens.
- Collisions between paddle and puck.
- Collisions between walls and puck.

Login Screen

1. Use Case Diagram:



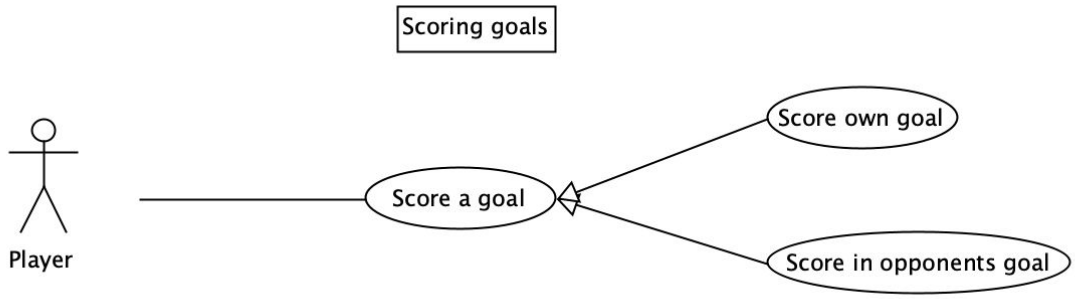
2. Natural Language Description:

   Oliver Neut , 28/11/19

   When the player fills in his credentials and presses play, the credentials are checked. If the credentials turn out to be right the user is logged in, otherwise he isn't.

Scoring Goals

1. Use Case Diagram:



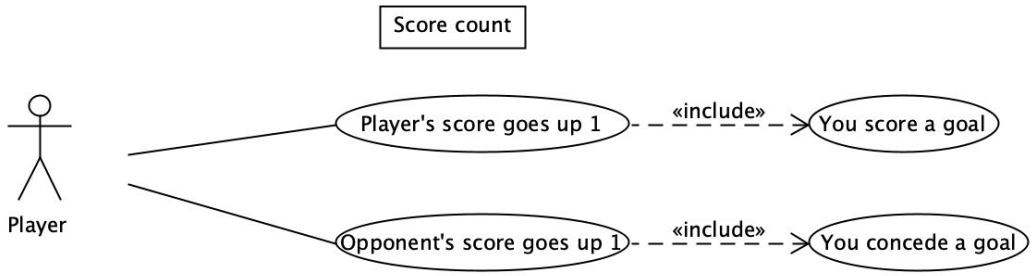
2. Natural Language Description:

   Oliver Neut , 28/11/19

   A player can score a goal by pushing the puck into a goal. When the player scores a goal, it can either be an own goal or a regular goal.

Score Count

1. Use Case Diagram:



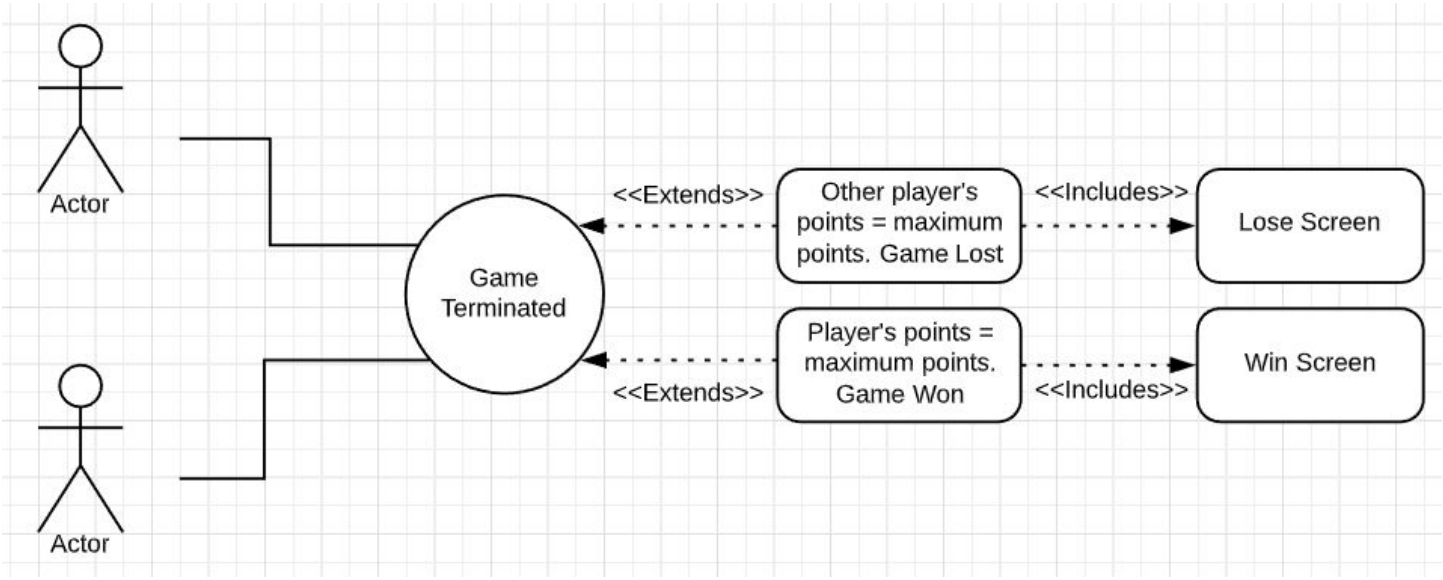
2. Natural Language Description:

   Oliver Neut , 28/11/19

   When the player scores a goal, his score count goes up by 1. If the player concedes a goal, the opponent's score count goes up by 1.

Win and Loss Screens

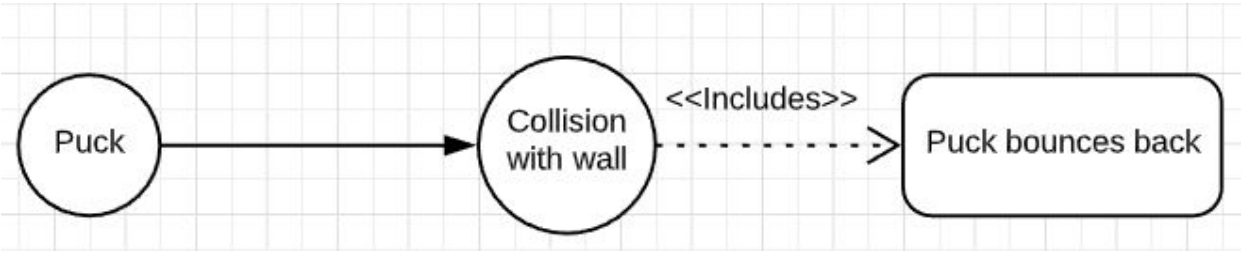
1. Use Case Diagram:



2. Natural Language Description: With this requirement, we specify that at the end of a game between two players, depending on the final score, our program should show a Win screen to the winner and a Loss screen to the loser.

Collisions between Walls and the Puck

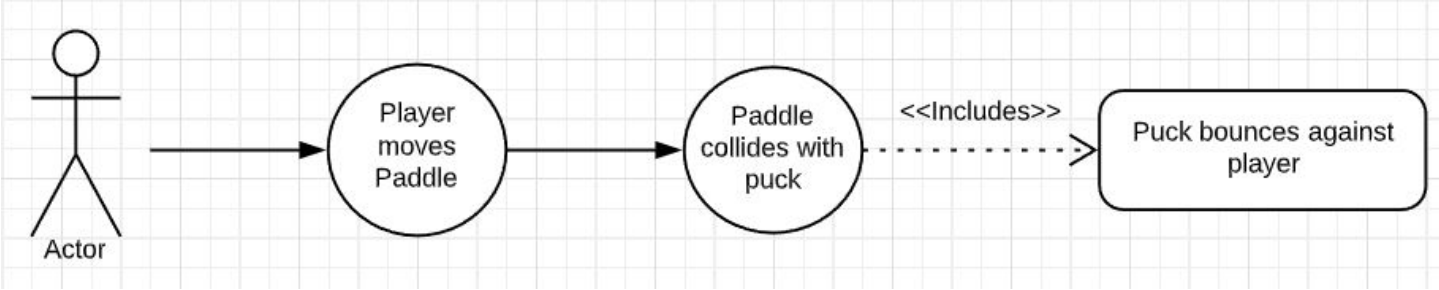
1. Use Case Diagram:



2. Natural Language Description: This requirement specifies that the puck should always stay in the boundaries of the board. When the puck hits one wall, it should bounce against it and change its trajectory in order to stay within the board.

Collisions between Players and the Puck

1. Use Case Diagram:



2. Natural Language Description: When a player hits the puck, the puck should bounce back in the direction of the player and move at a speed that depends on how hard the player hit the puck. This requirement is essential as the puck/player collision is necessary for a player to score goals and thus win a game.