2-player Pong   **Martin Hwasser (840516-0253)**
Extended Project Abstract (Draft)   2017-10-08
IS1500

Objective and requirements

The objective of this project is to create a simple replica the classic game of Pong on an embedded platform with limited resources. In this game, one player controls the left pad and another player controls the right pad. The goal of each player is to not allow a moving ball to move past their pad.

The main requirements are:

- The pad to the left is controlled using the left-most switch, while the pad to the right is controlled by the right-most switch.

- When the game starts, a ball should appear in the middle and move randomly in some direction.

- The game should have different difficulty settings, eg the speed of the ball.

If time allows, it would be nice to include the following features:

- Let players to play with handicap, eg a shorter or longer pad. This could be controlled by the push buttons.

- Keep a scoreboard of the left and the right player, and allow this scoreboard to be reset using the push buttons.

- Make the game best-out-x, and show a nice end screen congratulating the winning player.

Solution

The project will be developed on the CHIPKIT UNO32 board together with the BASIC I/O SHIELD. The graphics of the game will be drawn on the small OLED display on the BASIC I/O SHIELD. The game movements will be controlled by the push buttons, using interrupts triggered by timers All the development is done using the MCB32 Tools and all code is written in C.

Verification

The program will be accompanied by a suite of test that verifies the physics of the game, such as collision detection and reciprocal angles.

Contribution

The project is the individual work of Martin Hwasser.

Reflections

In the final abstract, the this section will contain reflections and thoughts after completing the project.