Snake Game (might change topic later)

ECE153B Final Project Proposal
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Overview

We are going to design a snake game by using LPC 4088 microprocessor. One LCD screen will be used to display. During the game process, snake continuously moves toward one direction and users can change its direction by controlling the joy-stick on the board. After eating food, the snake will increase its length by one unit with sound hint. Along with the gaming process, the difficulty of game will increase by the increment of snake's body, since the space is limited. Score will be shown on the top of screen and the game will be over when snake's head touch the wall or its body.

Peripherals

- LCD screen
- Joy-stick (on the board)
- Buzzer (on the board)
- Button (on the board)

Software Design

To use button to start the game, we are going to use a while loop to check the states. When it receives a signal of "start", another while loop to control the whole game will execute; when the "stop" signal appears in the process, the loop will break and wait for another input signal to restart. Every time when snake gets food, the length of snake will be increase by one, which means adding one pixel to the head position of snake. When it senses the next position has already occupied by a pixel, the game will be over. At the same time, we use random function to generate food randomly and change speed setting to change difficulty.

Goals

- Press SW6 to start the game
- Moving joystick to control the direction of snake
- Increasing body length by one unit after eating food
- Buzzer sounds when snake gets food, score increases by one.
- Game over when snake hit wall or its body
- Earn the highest score in the game

Group Responsibilities

Lei will be responsible for the programming of snake game, which is to control the difficulty of game, including setting moving speed of snake, and to design the rules of the whole game.

Jingzhe will be responsible for the connection between microprocessor and LCD screen, setting joystick and button, as the input signals of the game, and making buzzer sounds at each specific condition.