Bilkent University
Department of Computer Engineering

CS 223 – Digital Design

Auto Racing

Şamil İraz (21501033)
Çağatay Sel (21502938)
Section-1

13.03.2017

Description of the Project

General Goals

The aim is to remake the vanilla version of the famous Gameboy race game. In this game, player drives a car in a highway. 4x4 keypad module will be used to get inputs. Keyboard can be used to get inputs as well but we left this feature as future work. RGB Matrix on the Beti Board will be utilized for the outputs. We will also try to implement the game for the VGA Monitor later.

Inputs

Two buttons keypad module will be used to get inputs from users. One of the buttons will move the car to the lane on the left and the other button will move the car to the lane on the right. A keyboard could be used to move the car instead of these direction buttons. This can be considered as future work since keyboard is more user-friendly.

Outputs

Game screen will be displayed on the RGB Matrix on the Beti Board. The car will be represented with green 2x2 squares and other cars will be represented with red 2x2 squares. There will be barricades on the rightmost column and the leftmost column which will be represented with blue lights. Player's score, which is the number of the cars overtaken, will be displayed on the monochrome screen on Basys3 board.

Gameplay

Player can control the car using direction buttons. The car can be at 5 different lanes at any time since the size of the car is 2x2 and we have 6 columns left. The aim is to overtake as many cars as possible. The car gets faster and faster. Game ends when we hit another car.

Equipment

- Basys3 : Buttons and Monochrome Screen
- CS223 Beti Board : RGB Matrix
- Keyboard (For future)
- VGA Monitor (For future)

Delivery Dates

Project Proposal Report : 15.3.2017
Project Progress Report : 10.4.2017
Final Project Report : 8.5.2017
Presentation of the Project : N/A
Peer Grading Form : N/A