Crossy Road

This game is a Verilog version of the game “Crossy road”. In this game, you can control a little sticker-like guy cross the endless heavy traffic until he get hit by a car-like square. The players’ main goal is to avoid the “car” and go across the lanes safely. We can keep track of this poor guy for how many lanes did he cross before he died in game in HEX and respawn him right after his death. You can only control this guy to move forward, left or right, which means that it cannot move backward. The hex decoder will display the current score that you get, and the highest score that you have achieved.

In this project, we will implement many counters and registers. We will use FSM to determine what is current state of the sticker-like guy like dead or alive. Also, we can use it to reset our game to initial state. Clock is a must in this design, we shall use clock to control the speed of car. What’s more, we might use random speed for each lane and VGA to display the images on the screen. In order to count the lanes, we would use counter or ALU to count.

We can learn something new such as random generator and develop a real game using the knowledge that learned in CSC258. This will be the first game that made by ourselves and we would make it as fun as possible. For non-CSC258 students, we can provide them a fun new game to play.

We are so addictive to "Crossy Road", that I want to make a similar game by Verilog by ourselves. It looks cool when you can play a fun game which made by yourself and we love a game that is endless and challenging.

First milestone:

Using VGA adapter to separate the screen in four lanes. Make one object (car) to move along one of the lane automatically by implementing car control and data path. The “car” is a square in different colour with the background colour. One object move test could be done.

Second milestone:

Multiple objects (cars) can move along lanes by implements control and data path. The little guy can jump to other lanes and move left or right by pressing some of the KEYs. What’s more, the counter counts how many lanes did the guy pass and show on HEX. Multiple objects move and counter should be tested.

Third milestone:

Implement the collision detector and FSM that allows the little guy to be alive, dead and respawn. Final combination should be done and the game can be played.