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CS152a Final Project Proposal

Overview:
We plan on making a game similar to “Flappy Bird” that was out a few years ago. The objective of the game will be to get the bird/object through walls that have openings at varying heights.. We will be implementing this using an FPGA board, and verilog code. We will be using the seven segment display to show the score, and the buttons to make the bird jump.

Game Rules:
Instead of using the bird, we use a block to fly. The more the block can pass the walls, the more points you score which will be displaying on the seven segment. If you hit one of those walls, it will be game over.

Game Implementation:
. We plan to implement this game using FPGA board’s button to make the block jump.
. We only change the y coordinates and x coordinates are always constant.
. When the player hits the wall, we will display some unique features to let the player know it is a game over.
. In this game, we only need to move the walls not the bird (block). We will make the walls move by a constant value because they all have to move at the same time and constant.

Grading Rubric:

Implementation of the walls (30%):

- (10%): The walls should be moving properly relative to the player, and relative to each other, they should not get closer or further than the way they appear on the screen.
- (10%): Walls should be properly generated, and random at the heights at which they appear.
- (5%): Each pair of walls with a gap should be a constant x-distance apart from the next pair.
- (5%): If we hit the walls, then it should be game over.

Implementation of the sides/edges of the screen (15%):

- (10%): The sides/edges should contain all the moving parts in the screen, without spilling anything.
- (5%): If we hit the sides/edge of the screen, then it should be game over.

Implementation of the block/bird(25%):

- (10%): The y-coordinate movements should be proper in that they should let the player actually simulate a “jumping” motion as it would happen with gravity on Earth
- (10%): Collisions with the any objects or edges of the screen should end the game
- (5%): The player’s x-coordinate movements should be consistent and not vary relative to the edges of the screen

Sounds(10%):

- (10%): Make sounds every time you score a point.

Score Counter(10%):

- (10%): Keep track of the score. Upon death/restart, reset score counter to 0.

Game Restart(10%):

- (10%): Game should restart in a proper manner, by showing game over to the player, and then resetting score.