Mini Project Report – Team 21

Interim Report

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**Abstract**

This project intends to provide a gaming console experience similar to a Gameboy. Designing a flappy bird game using a FPGA board (Cyclone V 5CEBA4F23C7) with the knowledge learnt from the course COMPSYS302.

**Introduction**

The goal of this project is to design a custom flappy bird themed game using digital logic and VHDL to program a FPGA board.

The rules of the flappy bird game are to keep the bird floating while avoiding obstacles such as pipes. Since the project is not finished there are more features to come such as extra score and score boosters.

**Game Features**

The flappy bird game is an endless game with one life. Similar to Jetpack Joyride. It currently only has one level and pipes as obstacles. Player will need to “flap” the birds through the opening of the gaps without the bird touching the pipe to score. The background is currently sent in extreme high altitude hence why the bird is not flying straight.

The game currently has the basic logic of flappy bird. A bird that flaps up when clicked, pipes moving from left to right with an opening.

**Setup and game tutorial**

**Equipment needed:** Cyclone V 5CEBA4F23C7, PS2 mouse, Cables, Screen.

Plug everything together, connect the HDMI cable to the back of any monitor. Press the red power on button.

Player can now left click to flap the bird.

**Design and Implementation**

Our project currently consists of two states, more will be added as we journey through this project. A diagram of a diagram

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Current state of implementation of the FSM.

A diagram of a computer program

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This is the potential FSM for later on design.

This is our Moore finite state machine. Currently it consists of only two states, starting of the FPGA board and left clicking to start the game. Since the game does not have any logic implemented so it does not end…

A diagram of a computer program

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