# 6.111 Abstract - Fpglappy Bird

Team Members:

Wei Low

Nicholas McCoy

Julian Mendoza

Abstract:

We propose an interactive game that incorporates elements of motion tracking, graphics and VGA output, and audio / sound effects.

We plan implementing this project using a NEXUS4 board for game control logic, an SD card loaded with pre-created sprites and game environment backgrounds, a webcam for vision tracking, speaker for sound output, and computer monitor for graphics display. The camera will track a bright visual target (the "beak") that will be worn on the face of the player. A vision tracking algorithm will identify the location of this beak in the frame and use it to identify when the player jumps. Additionally, the game will extract a circle of the image around the beak (the player's face) and use it as a player sprite in the game. The game visuals are generated in hardware and output over VGA from the Nexus 4. Sounds will come from files preloaded on the SD card.

Typical gameplay flow would be as follows: player puts on beak and presses a button to begin the game. By jumping, the player can fly higher to dodge obstacles. When not jumping, the player will simply float downwards at some given rate. The game ends when the player runs into an obstacle, and their high score is saved.

Main elements:

Vision / motion tracking

Graphics / sprites

Music / sound effects