

Columbia Defense Video Game

CSEE 4840 Final Project Proposal

Team member:

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Discription:

In this project, our team is going to build a video game called Columbia Defense. In the game we will set up the human elements of Columbia University such as undergraduate, MS,PHD student, TAs, professors and so on as the university guard with different types of method to defend various attackers from other Ivy league universities. We have 5 paralleled paths towards our campus and we should build our heros on each path to accomplish the goal of protection. Futhermore, we have a unique bonus system which can be used for upgrading guards and buying secret weapons.

Inputs and outputs:

Input:

We may adopt mouse device to achieve 2-dimension control. Such control will enable us to drag & put objects on the screen just as the interaction between human and personal PC. The mouse, of course, has to be connected to the system via USB port, and corresponding driving software should be added.

Output:

1. After the code and input control got processed within the board, the corresponding signal output was transmitted to the screen via the VGA port. Of course, related driving code is needed.
2. Game data, game status, audio background music are stored in the SRAM. And the music get played via the audio device on the board while the game is on going.

** Since most of the inputs and outputs are achieved via mouse and screen repectively, the buttons on the Sockit Board will not be employed so much. The Sockit Board will act as a compiler and running platform.

Software Implementation :

Since the project is based on Sockit Board and the main interactive device is mouse, we decide intuitively to realize it by SystemVerilog and C. Considering we are also used to Matlab and other programming languages, however, we do not exclude the possibility that we may apply other related languages.

Milestone:

Milestone 1 : (Apr 1)

Design and build the structure of game map: pixel positions and graphic design.

Design different models in the game: different university guards and attackers.

Milestone 2: (Apr 15)

Work on and implement the character behavior with mouse and hardware configuration.

Build the sound effect, the bonus and upgrading system.

Achieve code and build the basic level of game.

Milestone 3: (Apr 29)

Achieve changing and building different levels.

Finish coding software and hardware configuration.

Testing and debugging the game.