## M256 Computer Programming Name Noriaki Handa

## Final Project Proposal

Complete the following proposal for your major project. Use complete sentences and *be as specific as possible*.

1. Describe your game idea in a couple of sentences. What is the main idea/theme/purpose?

This game is for you vs. computer or you vs. your friend. You will take a shot to a basket by adjusting power and angle. You and your opponent will alternate every one shot. If you score before your opponent score, you can go to the next stage. Stages get more difficult if you go to the higher stages.

1. List some of the features (details) you plan to include in your game.

When the game is started, fist, it will show instruction screen to explain how to play this game. Every time the player scores, distance between character and the goal is randomly generated. Angle and power will be reset to the original position. As single play, computer will generate random number for both power and angle. As player goes to higher stages, the random number will be generated in tighter restrictions so that computer can score early.

1. What type of data structures will you use in your project? (What data will need to be stored and how will you store it? Variables? Arrays? Structures? Classes? Etc?) Be specific – name some of them and what information they will store.

I will need to use four random number variables in order to generate

1. Distance between player 1 and the goal.
2. Distance between player 2 (computer) and the goal.
3. Angle of throwing ball for computer.
4. Power of throwing ball for computer.

I will need to use gamestate to control the game

Gamestate = “loose” // Show game over screen

Gamestate = “win” // Generate random number for distPlayer and distComputer

Gamestate = “intro” // Show instruction display

I will also use other variables to store score, stage, and rectanles.

1. How do you foresee using decision structures (if/else, switch/case statements)? Be specific (What decisions will need to be made in your code? For what purposes? Give an example of the main decision structure in the game.)

The display will change based on gamestate variable. Ex. if(gamestate==”win”) //Go to the next level.

The player will be using keyboard to change power, angle and shoot.

I would use timer to make some intervals between random number generation and throwing the ball. (for computer’s turn)

1. Briefly describe the layout (outline) of code for your project. Include general code module descriptions to explain what your plans are (classes, helper functions, etc.).

* Load pictures and spritesheet
* Set gamestate to “intro”
* Display instruction when gamestate is “intro”
* onclick 1 key to set gameModeState = “single”, playerState=”player1”
* onclick 2 key to set gameModeState = “multi”, playerState=”player1”
* gameModeState==“single”&&playerState==”player1”
* start the game
* player 1’s turn
* up and down arrow key to adjust angle
* right and left arrow key to adjust power
* space bar to shoot a ball
* start running spritesheet (as if the character is throwing a ball)
* the ball goes based on an equation of parabola
* if the ball goes into the basket
  + playerState=”win”
  + display winning message
  + go to the next stage
* else
  + playerState=”com”
* computer’s turn
* generate random number between x and x for power (not yet determined)
* generate random number between y and y for angle (not yet determined)
* wait for two seconds
* shoot a ball
* same thing as player 1
* if the ball goes into the basket
* gamestate=”lose”
* display gameover screen
* gameModeState==”multi”&&playerState==”playe1”
* start the game
* same as above
* spacebar to shoot
* same as above
* else

playerstate=”player2”

1. On a separate sheet of paper, draw sketches of your proposed screens.

## Proposal must be turned in by the end of class on Friday, April 15th