Computer Science 4482A: Game Engine Development

Assignment 5

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Development, we have decided to create a computer game that is designed for a desktop computer platform. The following document serves to create an overview of the game itself, as well as identify some of the finer details and goals that we are going to try and reach.

The game can best be conceptualized as the lovechild of threesome between between Battleship, Pong and Air Hockey. The game is to be played over a network, with two computers communicating over a UDP connection. Both players will have access to their own screen, but not the screen of their opponent. At the start of the game, each user will have a set allotment of stars, planets and other celestial bodies. They will use these objects to design a set of obstacles which will spawn across the field of play. The kicker is that the field that they design will be displayed on their opponents side of the board and vice versa.

Each player is assigned a goal that they must defend - the goal is obviously on the side of the screen which is visible to them. From there, the ‘puck’ (which is most likely going to be another celestial body) will be inserted into the field of play. Remember, each player can only see their own half of the screen - they can’t see what’s going on on their opponents board. The celestial bodies that were placed in the field of play by both of the players will then exert their gravitational fields on the ‘puck’ as it flies by. This adds an element of unpredictability to the game and makes it a bit more difficult for the player to defend their goal as the ‘puck’ flies into their screen. In addition, this also helps players trying to score, as they can ‘deek’ the opponent.

The game continues as players exchange blows or hits on the ‘puck’. Goals are scored when the player cannot successfully defend the ‘puck’ from entering the goal in which they are defending. In addition, players will be able to view the current score of the game, as well as the total time in which the game has been played. If time permits, we would like to add a neat feature that allows the speed of the ‘puck’ to increase as well as the strength of the gravitational fields of the celestial bodies as the game progresses. This feature keeps the players alert and prevents them from getting bored with slow game play.

Technically, the game is going to feature a combination of basic animation, a small, but relatively realistic physics engine, as well as networking over UDP and multithreading. Though, as time progresses and development ensues, one or two features may be added, while some may be omitted - we are just trying to provide a basic overview of what we are doing and what exactly we are trying to accomplish in the next few weeks.

As partners, we have decided to have are game market on the technical attributes, as well as the actual enjoyment and game play experience as a whole. While the emphasis is to show our technical prowess behind the keyboard, we would also like to make something that is fun and actually enjoyable to play.

be use Perl, SDL and perhaps OpenGL to develop this game. Using this platform will allow us to showcase rapid game prototyping, and game scripting.

Components :

- → Game Framework: Meshing multiple components
  - → Collaborative
- → Networking: Protocol Design
  - → Leke
- → Game Scripting: Rapid Prototyping
  - → Kartik
- → Multi-Threading: Threads for Sound, Video and Physics
  - → Leke
- → Physics Engine: Dynamic and Static Collision, Gravity
  - → Kartik

Please contact either of us for further discussion about the project.