**Adam Fraser AH CS project**

**Multi-screen remote controlled asteroids**

**System overview**

this system is a modern take on the classic arcade game “asteroids”. While in the original users generally played alone only interacting with other users through a leader board this version will …

* Allow users to engage in multiplayer games across a large arena comprised of many screens
* Give users the ability to control their “ship” from any device with the latest browser technology but preferably a mobile / touch device
* Add lots of interesting game mechanics like powerups (e.g. speed boosts) and the ability to setup mining colonies on asteroids (give a certain number of points per cycle)

**End-users**

End users will likely be relatively experienced with computer systems due to the hassle of setting up the server and database. They will probably play the game in large groups since it requires many devices and will be most fun that way.

**Perceived need for system**

Currently there are no systems I am aware of that allow as many people as are available to play the classic arcade game asteroids across a large “arena” much less control it with their phones. this system will allow users to use whatever compatible devices they have to hand as a potentially giant arena to competitively play asteroids.

**Key features / objectives**

* The game should be responsive with latency low enough over a local network to be unnoticeable
* There should be an intuitive way to initiate a game with other users
* There should be a simple to use and scalable leader board
* The game should display the score as it is being played
* The game should include interesting features like power ups, point boosts and obstacles
* The server should have a useful and intuitive dashboard showing such information as current number of games, total games and server uptime
* The server should keep extensive logs in an external persistent file
* The server should make use of a database to store scores
* The controller interface should be optimized for mobile devices
* The transition of entities from one screen to annother should be seamless or at least only involve a few ms of delay
* The asteroids automatically generated for the game should be “interesting” shapes and not just simple circles
* It should be easy for each player to follow their “ship” around the arena
* When a new powerup appears users should be alerted with a sound since it may be out of their sight

**Meeting requirements**

* This program will write to an external log file
* this program will process data from a mongodb database in a simmilar way as a SQL based database may be used
* this program will use 2D arrays to efficiently check for collision
* this program will use HTML and javascript for the front end
* it will also process form data submitted from clients
* it will make extensive use of modularity
* this program will use a linked list to store sockets of arenas