Bombertale

Efren Aguilar

Alex Deuling

Roldan Gammad

Edwin Ho

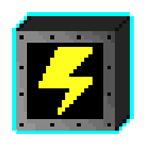
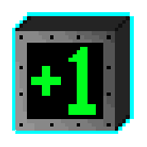
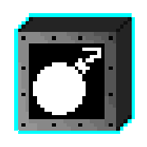
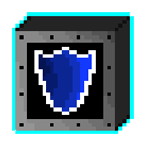
Peter Truong

April 21, 2016

Design Document

1. The game we decided to create is an online multiplayer version of Bomberman.

2. The player game objects can move in four directions: up, down, left, and right as well as place bombs where they are currently standing. The bombs explode after a certain amount of time, creating explosion game objects in the four directions that affect soft blocks and players. Players die instantly if they are hit by an explosion. Soft blocks deteriorate and have a chance to drop powerups game objects. Powerups give various buffs to the player such as:

* An increase to player movement speed
* An increase to bomb explosion radius
* An increase to the number of bombs a player can place at a time
* Player invulnerability for a certain amount of time

3. We will make it multi-user by having four different players, each starting at different corners of the map. The goal for each player is to eliminate all the other players and to be the last one alive. Each game will be played until a set amount of victories is achieved. For example, if three games are set to win, a player will need to win three separate bomberman games in order to win. After each individual game a scoreboard will be shown that displays the current number of victories each player currently has. With this, all players will see how close they are to victory/defeat.

We will host a database that stores client usernames and their passwords. The database will also store information about servers that are up and running such as: their IP address, port, their name, whether the server is passworded or not, and how many players are currently connected to the server.

4. We will have clients communicate with a central server that they will join after looking it up on the database. The clients and server will communicate (ideally) with TCP to prevent data loss. This should be feasible because of the infrequency of game messages being sent over the network. The data we will serialize and send over the network is:

* Player coordinates
* Bomb coordinates and time they were placed
* Powerup coordinates
* Player scores
* The current state of the map
* When a player dies