

CS4344 Networked and Mobile Gaming AY14/15 Semester 2

Group 6

Elemental Frenzy

Team members

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# Introduction

In this project, our team developed a real-time multiplayer game coded solely with HTML5 and Javascript. Our game, Elemental Frenzy, is based on the open source 2D game engine library called Quintus and runs on Chrome for both the client and server. Moreover, our game is also portable on mobile Chrome.

In this report, we will first talk about the game mechanics and features of our game. Then we will then discuss how we implement multi-playability and the type of communication model that we used. Also we will cover the techniques used for various situation in multiplayer gameplay.

Elemental Frenzy is a 2D side-scrolling platform player-vs-player (PvP) battle arena game. 4 players battle it out in a free-for-all, death-match style mode by shooting elemental balls (eleballs for short) at each other. Players can navigate around the map to either run away from the danger or to scout for powerups and potions. The player with the highest kills (tie-breakers are resolved by least number of deaths) wins the round when time expires

# Game Design

* Game mechanics
* Splitting of workload
* Assets and artwork references
* Real-time
* Type of architecture
* Type of communication model
* How we synchronize states among players
* Strategies to reduce bandwith / power usage of the game
* How we ensure fairness

# Implementation

* Implemented in HTML5/Javascript
* Supports multiple game session capped at 5 due to network restrictions
* Game lobby which allows selection => player match making
* Techniques adopted for various situation
  + LPF for element ball
  + Short circuiting
* Smart client
* Library used
* Possible latencies that game still capable of handling
* Capable to be run on mobile platform, shake to change elements
* Problems faced and how we adopted techniques to mitigate issues