

(source textcraft.net)



**Technical Design Document**

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**1 - Game Overview**

Elemental Smash is a fighting game based on the principles of honor and dignity. The game starts with a UI screen that contains options for : How to Play, Credits, vs AI Button, Multiplayer, Practice. How to Play gives you a screen with info about how to play. Credits explains how awesome the developers are for creating this game. Practice is for solo 1 player practice with the controls. Play against AI is 1 player combat against AI elemental. Play Local Multiplayer will allow two players to fight each other from one local machine.

**2 - Technical Summary**

Elemental Smash was developed in 2 months by four individuals using Unity Pro for Students. The game was built from scratch. For assets, Unity’s built in assets were utilized in addition to custom sprites by Nick and additional sprites from Joseph. Total production cost of this game was several dozen hours of time and several headaches. A satisfactory grade mark will offset the investment.

The game will be deployed for PC, Mac Standaloe. Minimum requirements include:

OS: Windows XP SP2+, Mac OS X 10.8+

Graphics card: Generally anything made since 2004 should work.

**3 - Hardware Equipment**

To create this software, four laptops were for game development. Luckily, each team member already owned a machine, so this is not a cost directly associated with producing this software.

**4 - Software Equipment**

The only software utilized for this project is the game editor/engine Unity Pro for Students which was acquired for free. Adobe Illustrator was utilized for sprite creation.

**5 - Game Engine**

The game engine that I used to create Elemental Smash was Unity because I was able to create this simulation in a streamlined way. Additionally I was able to utilize the built in assets, physics, libraries, and other useful resources available in Unity.

**6 - Target Platform**

Elemental Smash will be deployed to PC and Mac Standalone. The simulation runs beautiful on these standard personal machines. All controls are via keyboard which would allow for easy deployment to Linux.

**7 - Scenes**

**TitleMenuScene**

The Lobby menu has many useful features. At the top of the screen, one sees the title of the game: “Elemental Smash”. Options in the lobby include: Create a Game, List Servers, Play and Host, and Join a Game. If one would like to go back to the original lobby screen, there is a back button at the top right of the screen. There is also some UI to indicate your Status, your current Host, and if you are currently connecting or about to start a game.

Once in a game lobby, players can wait to see if more players will join or the players can indicate that they are ready. Once two or more players are in the game lobby and they are ready, the game will begin.

Asset List: Main Camera, StartMenuCanvas, TitleText, CloseButton, AboutButton, CreditsButton, VsAIButton, MpButton, PracticeButton, EventSystem

**BattleGround**

This scene is a platformer map that serves as the setting for Local Multiplayer battles to the death. Each players goal here is to outlast the other. If a player falls off of the map, the elemental will die. Players can jump from platform to platform, jumping with ‘w’ for player 1 and the up key for player 2.

Asset List: Main Camera, SceneManager, Platforms, Characters, Canvas, PickUpSpawners, EventSystem

**Other Scenes include more UI, how to play, credits, and a Map for 1 player vs. AI**

**8 - Code Analysis**

All scripts are relatively simple (short and of complexity equal to or lower than big theta of n squared)