

Game Design (Revised)

Student ID: 110022583

December 6, 2014

Title and Genre

The title of the game is Battle of Warlocks. In this game warlocks are battle against each other by casting spells only. In order to win, they have to eliminate their opponent by knock them out of the arena. It is a real-time strategy (RTS) game. It looks similar to multiplayer online battle arena (MOBA) because players can only control a single character. It differs from MOBA in that the objective is not destroying opponents' main structure since there are no bases/buildings. Players are battle against each other in a smaller arena.

Environment

The setting for the game is in a volcanic area. At the beginning, players are battle against each other in an arena surrounded by hot lava. As the game progress, the lava starts flooding the arena, causing the area arena become smaller and smaller, and eventually fully covered by lava. The environment of the game is illustrated in figure 1.



Figure 1: The environment of Battle of Warlocks
Screenshot taken from Warcraft III game

Players and Opponents

In the game, players can control a single character, the warlock. The players can walk around the arena and cast some spells.

The opponents are represented by another players, who also control a single warlock.

Rules/Mechanics

Before the game starts, a player must create a session so that other players can join the game. Each session holds up to 8 players, the game mode is Free For All (FFA): every player in the match is an enemy. Players must be dependant enough to survive and eliminate other players. Players have to play a total of 3 rounds in each match

At the beginning of each round, players are spread evenly around the map. Each player has a fixed health point (100hp) at the beginning of each round. Players are advised to stay away from the lava pool. If a player is step on the lava, they will lose 12 health point per second until they step back into the arena. The damage from the lava is calculated as 0.1 seconds per tick, which means that the player health point will be updated every 0.1 seconds when he/she is in the lava pool, so if the player is able to get out from the lava within 0.1 seconds, no damage is done. A player will be eliminated if he/she loses all his/her health point.

Players can cast spells like :

- fireball - fire a fireball towards a target point. it will explode when it hits an object(warlock, another fireball, obstacle). When it explode it will deals damage to the target and knock back the target if the target is an warlock.
- teleport(blink) - instantly relocate to a new location within a certain range

Warlocks does not require mana to cast spell (unlike other games), each spell has its own cooldown.

When a spell hits a warlock (player), a force will act on the warlock, this force is called knockback force. At the beginning of each round, all players will have same amount of knockback force. Every time a player's spell hits a warlock, their knockback force will increased based on the damage of the spell. This means that the more you hit the target, the more powerful your spell will become (note that the spell still deals same amount of damage, but it can push the target further away so that the target will more likely to knock out into lava).

There is no time limit in each round, but as it progress the area of arena will become smaller and smaller, so the players have less space to move. Eventually, the arena will be covered by lava, all the players will lose health. Whoever survive until the very last second will win the round.

The first player who dies first will get 1 points, the player who dies next will get 2 point and so on. After each round, the knockback force and area of the arena will reset to initial value. At the end of the game, player who get the highest point wins.

Goals

The overall of goal the game is to get the highest points at the end of the game. In order to achieve the goal, players must fight to survive until the end of each round. Each round, the player who being eliminated first will get the lowest points and the player who survive at the end of the round will get the highest points. The most effective way of eliminating opponents is knocking them into the lava pool. It is possible that the players eliminate the opponents by killing them with spells if the opponents have very low health.

During each round, it is encouraged to cast spells and hit opponents as much as possible so that the player will gain more power, hence increase the knock-back force. Player with high knock-back force can knock opponents further away from arena, causing them to die in the lava pool if they can't run back to the arena in time.

Game Loops

The game loop can be describe as below:

```

for each round {
    reset arena
    reset players health , position and knockback force
    while (user does not disconnect) {
        check user inputs
        if (user inputs present)
            execute user command
        update in-game time
        reduce the area of arena at a specific time interval

        update all units health , velocity , position and spell cooldown
        if (spell collide with object) {
            calculate the damage and force
            update caster knockback force
        }

        draw game objects

        if (warlock dies) {
            add points to the scoreboard
            if (last survivor in the arena)
                give extra point to survivor
            end round (break)
        }
    }
}

```

Before each round starts, the arena is restored to initial state, players status are reset to initial value. Next, it will execute user input (move, cast spell, stop) if present. The loop will break if the user disconnect. Then, it update the duration of that round. When a specific time is reached, the area of the arena will reduced. After that, it will update all warlocks and spells (fireball, gravity ball) health, velocity and position. If some spell is hit on an object, it will calculate the damage/force done and update the caster knockback force if appropriate. If a warlock health point is 0, the point will be given to the warlock based on his/her position in that round. If there is only one survivor in the arena, the round is ended and extra points will be given to the victor of that round, and next round will starts again. Finally, after a number of rounds is played, the game is over and the scoreboard is shown to the players.

In Context

This game was inspired by a game called *Warlock*. It is a custom map from Warcraft III: The Frozen Throne, which was created about 5 years ago. It is a very unique mini game, and there are no similar stand-alone game developed since then. figure 2 below shows the gameplay of the Warlock in Warcraft III.

This new game will inherits some of the feature from the existing game such as some abilities and mechanics. The reason why I choose this game is because this game can illustrates the some physics like explosion force from fireball, gravity force from gravity ball and change in velocity of the warlock due to the force.

Platform

This game is designed for Desktop because the game has a lot of buttons for different spells. In desktop, players can press different keys for different spell and use mouse to control the



Figure 2: Gameplay of Warlock in Warcraft III: The Frozen Throne

movement of the warlock or target the spell. In tablet, if player has to cast a spell, he has to tap on the button and tap on the target point, it might takes a longer time to do this action compare to desktop. Also during the period of the time, the player is unable to control the movement of the character. Additionally, too many buttons on the the tablet screen might block the view (buttons in tablet has to be big enough so it is easier to select), hence might reduce the gameplay experience.

Bibliography

figure 3 below shows the state transition diagram as the game progress.

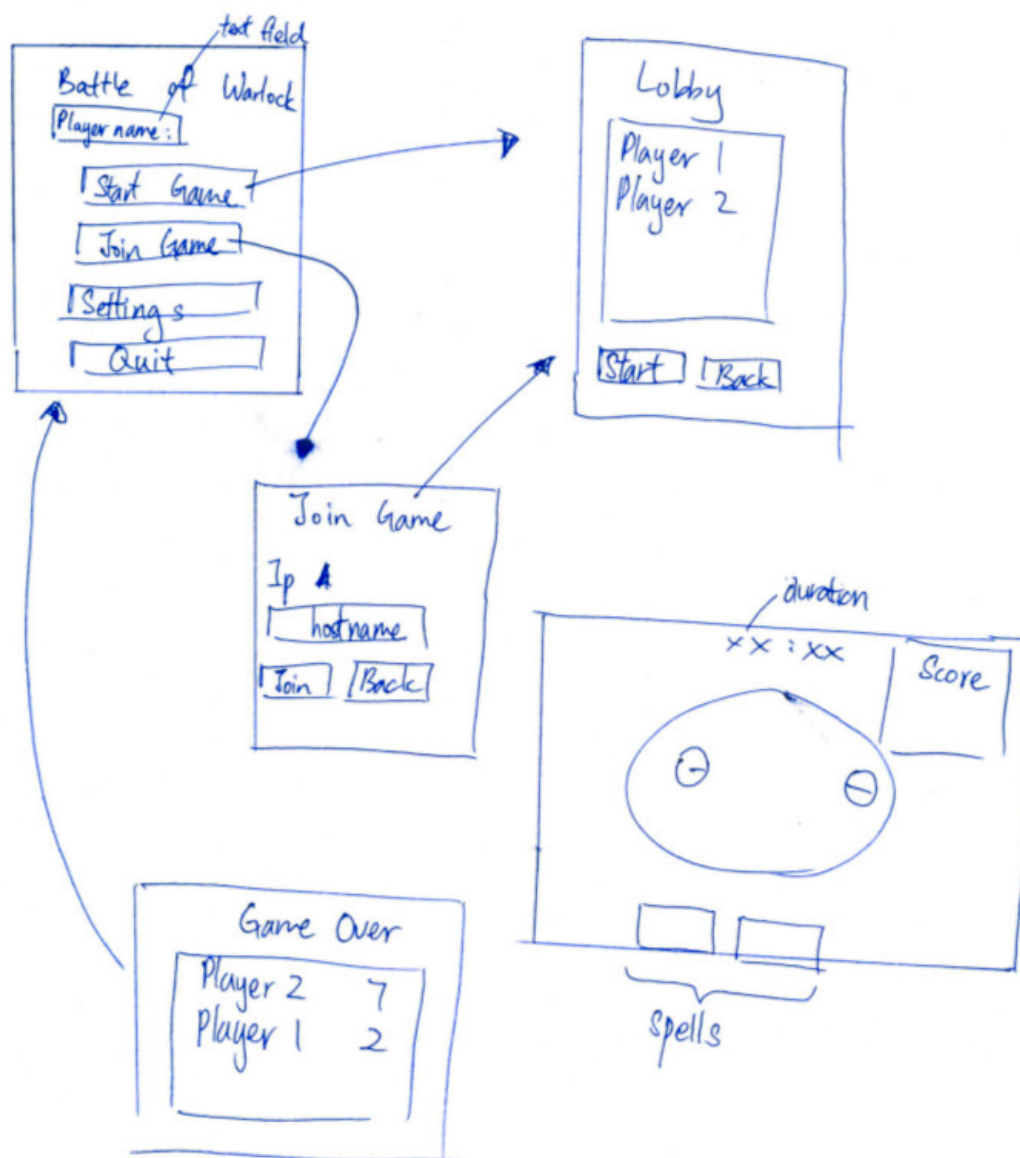


Figure 3: Transition