

Backlog for Hero TD

CS307 - Team 4

Team members:

Mingyong Cai, Mingqi Han, Xihao Li, Nicholas Meier, Rongxi Zhang, Xuan Zhao

Problem Statement

After playing previous video games of the "Tower Defense," or "TD," genre, we as a group find them very enjoyable and would like to build our own game of the genre. As such, the desire to improve upon existing concepts and introduce new ideas has arisen. To do so, a competitive multiplayer TD game with its own background story is something that we seek to produce alongside additional mechanics which keep the game type interesting and enjoyable.

Background Information

The tower defense genre of video games (Domain) are games which present users with a force of invading enemies, usually controlled by a computer, that must be stopped from entering a certain region, or a nexus. Users build towers which contain various methods of stopping invading forces. However, this genre of game can often become incredibly repetitive and excessively grind-oriented. As a result of this, the genre becomes oversaturated with games which lack mechanics beyond those of excessive maintenance and balance. There are some famous Tower Defence games coming up in recent years like Clash of Clans by Supercell and the famous Plants VS Zombies. Clash of Clans exists as a predatory mobile game which uses limitations and microtransactions to draw in a younger audience; a toxic solution to the problem of monotony. Ignoring the problem that Clash of Clans has with

microtransactions, the game allows for a multiplayer experience which does indeed provide a unique spin on the genre. Plants vs Zombies instead works to provide a unique design and very stylized characters to draw in users to the colorful and playful, but remains fairly basic in its approach to mechanics. By mixing unique design, multiplayer modes, and adding more interactivity through use of player controlled towers and other various unique mechanics, we hope to bring to the genre a culmination of previous successes while avoiding foul business practices, such as excessive microtransactions.

Backlog

a. Functional (Account features, UI features, settings features, game features, multiplayer features)

i. Account

1. As a user, I would like to have my own account name and password in this game.
2. As a user, I would like my account name to be unique, which means others can't have the same account name as mine.
3. As a user, I would like to be able to, optionally, change my username.
4. As a user, I would like to be able to reset my password.
5. As a user, I would like to be able to easily recover a lost password through email.
6. As a user, I would like to be able have my scores and game stats stored in my account.

7. As a user, I would like to have an account page to display my information and scores.
8. As a user, I would like to link my account with Facebook.
9. As a user, I would like to link my account with Twitter.

ii. User Interface (menu)

1. As a user, I would like to be able to navigate through the application without significant difficulties.
2. As a user, I would like to be able to access Setting page through the menu.
3. As a user, I would like to be able to access Play page through the menu.
4. As a user, I would like to be able to access Guide page through the menu.
5. As a user, I would like to be able to access the “What’s New” page to view the recent updates.
6. As a user, I would like to see different game-related background picture in the menu page.

iii. User Interface (stage)

1. As a user, I would like to see my current resource, life and level.
2. As a user, I would like to navigate through a large map by moving the cursor to the edge of the map
3. As a mac/ios user, I would like to magnify a part of the map by the corresponding finger gesture.

4. As a user, I would like to check the status of monsters by clicking on them.
5. As a user, I would like to see a pop-up menu of tower that has all the operations I can do to it when clicking on the tower.
6. As a user, I would like to access the shop anywhere in the game.
7. As a user, I would like to be able to access the shop by shortcut key.
8. As a user, I would like to check the user guide by shortcut key.
9. As a user, I would like to check the user guide by click the icon on the screen.

iv. Video/Graphical Setting

1. As a user, I would like to have a menu dedicated to adjusting video or graphic settings in the application.
2. As a user, I would like to adjust the resolution/size of the application window.
3. As a user, I would like to adjust the audio effects of the application.
4. As a user, I would like to adjust the game to Window mode.
5. As a user, I would like to adjust the game to Full-screen mode.
6. As a user, I would like to adjust the amount of graphical effects that appear during gameplay, such as particle effects.

v. Gameplay

1. As a user, I would like to build towers or other similar structures to defend a nexus, or base of operations.
2. As a user, I would like to select my unique hero tower.
3. As a user, I would like to proceed through rounds and obtain upgrades in the form of new towers or changes to old towers.
4. As a user, I would like to play in a variety of map types and levels.
5. As a user, I would like to defend my nexus against waves of various enemy types.
6. As a user, I would like to receive rewards in the form of in-game currency or upgrades when finishing a level, round, or wave of enemies.
7. As a user, I would like to achieve extra rewards, such as cosmetics, from a lottery mini-game.

vi. Singleplayer

1. As a user, I would like to play a game in infinite mode in which there are endless waves of enemies to fight against for the sake of defending my nexus.
2. As a user, I would like to play a story game-type in which there is dialogue from characters which presents a story related to the normal game's experience.
3. As a user, I would like to have a tutorial or user's guide to learn how to play the game and the different unqiuties that come with it.

vii. Multiplayer/Online

1. As a user, I would like to play this game with other people online.
2. As a user, I would like to play this game with friends I have on social media, such as Facebook or Twitter.
3. As a user, I would like to have a ranking system for online matches or competitive games so that I do not play against players that are excessively above or below my skill level.
4. As a user, I would like to have a chat room that would let me communicate with other players.
5. As a user, I would like to check the ranking list for all the players in the game.
6. As a user, I would like to have a chatting channel to chat with my allies.
7. As a user, I would like to have a chatting channel to chat with all players in the current game, including allies and opponents.

b. Non-Functional

i. Response time:

Local response times for user interactions within a singleplayer situation will be near instantaneous. Buttons and options in the user interface will respond sharply and accurately to the user's input. Users in multiplayer settings will have response times dictated by their personal internet speeds, but assuming a decent connection on the

user's side, an expected ping response time should be between 80 to 100 milliseconds. With this ping, users should still see the effects of their input, and other users' input, on a multiplayer setting near instantaneously

ii. **Scalability:**

The application will be scalable in the sense that it will be available on multiple platforms. Primarily, a PC version will be made, before working on scaling down to allow for mobile platforms such as Android or IOS to play. On the part of software scalability, the game application will be expected to perform as well as it does with one entity compared to 2000 entities, where entities are either enemies or towers on a level.

iii. **Usability:**

The applications program that acts as the game will provide a simple and aesthetically pleasing user interface that allows for easy operation and access to the key features. Likewise, the game interface used for playing will follow similar, already perfected, formats which prevent users from experiencing excessively frustrating controls while still keeping the game engaging.

iv. **Security:**

First of all, we make promise to all of our users: we will never share their information to others, including other company or other users.

Security is a critical part in our TD game, because it is an online game so every player will have their own usernames and passwords. We

must save and encrypt all the user informations in our server which will also be password protected. We will use a database, such as Firebase or MySQL, to store the user information