

Project 1

Human Computer Interaction,
CSCI 576

9 February 2012

Pat Kujawa

Functional and Usability Requirements

“Zombie Defense”

Description

Our project will be a two-dimensional tower defense game with zombies as the baddies and human survivors (with weapons) as the towers.

We haven't decided yet, but the game map will either have openings for baddies to enter/exit or else they will just enter and seek humans. If we use openings, the game will be lost when enough baddies reach the exit. Otherwise, the baddies will move toward and attack the humans, and the game will be lost if all the humans die.

Ours will have all the typical characteristics of a TD game: upgradable towers (humans), multiple types of towers and baddies, different maps, gold/points for killing baddies, unlocked achievements, etc. We hope to attract players by providing a pleasurable interface and creative characters/interactions.

We want our player base to consist of people who enjoy tower defense games, as well as people who enjoy zombie killing games. We plan to limit the deaths to dissolving into the ground to allow a larger market of younger and older users (people adverse to blood).

We would like to make one of the major features a map editor feature, which we will also be using to develop our default maps. We will also have a list of "premium features", which will be things we want to put in, but might not have time in this version.

Users

The users of our game will be:

- Fans of tower defense games
- Fans of zombie games
- Android owners looking for a game that's quick to delve into and doesn't take a lot of investment
- Those who want something to do while waiting during an appointment
- People of all ages, including young children
- Those who own a Viewsonic Gtablet

Personas

- Jackie, female, age 23
 - Recent college graduate; working an internship at a journalism website; lives in a big city and commutes by bus or rail
 - Likes to play tower defense games
- Liam, male, age 12
 - In 6th grade; loves history but thinks school is mostly boring
 - Lives in a town of 30k people
 - Loves to play video games
- Bill, male, age 70
 - Retired hospital administrator
 - Likes puzzles and strategy games

Usability Requirements

- Fun
- Attractive
 - Bright color scheme
 - Either super-realistic or well-done cartoonish characters
- Immediate action
 - No explanation screens or storyline before playing
 - Minimal instruction necessary to understand game
 - Power users can disable any instructions
- Learn as you go
 - Interacting somehow with towers/zombies will pause the game and display helpful content regarding the item (e.g. this zombie susceptible to fire, this gun accurate at long range, etc)
- Re-play appeal
 - Earn achievements to unlock maps, towers, upgrades
 - Hard and Nightmare modes
- Familiar to established TD game style
 - Follows format of one or more entrances and exits for zombies to proceed through
 - Zombies take shortest path available to their exit point
 - Towers create obstacles for zombies but cannot entirely block
 - Upgradability of towers
 - Selling/removing already-placed towers
 - Range of tower displayed as user is placing on map
- Free to try
- Saves state
 - Device battery dying or interruption by phone call should not cause game to lose track of everything going on in the game

Functional Requirements

User should be able to:

- Open game from app icon
- Start a new game (sketch)
- Drag towers onto map (sketch)
 - Display range of tower while dragging
 - Do not allow dropping in a place that would block zombie path
- Upgrade towers (sketch)
 - Touching a tower opens an overlay with upgrade options
 - Display benefits of upgrade (range, attack strength/type)
 - Display cost
 - Upgrades cost money; can't buy if not enough cash - gray out
- Pause (and resume) in-game (sketch)
 - All motion of zombies stops
 - Tower can still be upgraded/placed
 - Maybe when the game is paused, hints/documentation show up when user holds on baddies or towers (sketch)
- Fast-forward (and resume normal speed) (sketch)
 - Speeds up movement and firing rates
- See hit points (HP) of baddies when attacked
 - Progress bar above zombies showing life
- See HP of user (or her towers)
 - Show lives/hearts remaining
- Win
 - Towers do damage to zombies
 - If zombie HP drops to zero, zombie fades out
 - Done after surviving through 100 levels on a particular map
- Lose
 - Start with 20 hearts and lose one every time a zombie exits the map
 - Zombies must take the shortest path from entrance to exit
- Unlock new towers/upgrades
 - By winning
- Exit
- Resume saved game (sketch)
 - Game state should be persisted constantly in case of interruption or device power off
- Future: Design, save, and play a map
 - Choose from a set of starter maps
 - Grass, desert, city
 - Set entrance(s) and exit(s) for zombies
 - Given a set of building blocks, drag them onto the map
 - Must not entirely block path of zombies
 - Items like boulders, streams, trees, buildings, sand dunes, cacti, hills
- Future: Share custom maps
 - View/download/upload - hosted online
 - Maybe buy/sell in app store (built-in rating and comment system)