ISC4M1—Computer Science

Final CPT

All Hallow's Eve – Revenge

Mr. Cadawas

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All Hallow's Eve – Revenge

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Requirements Document

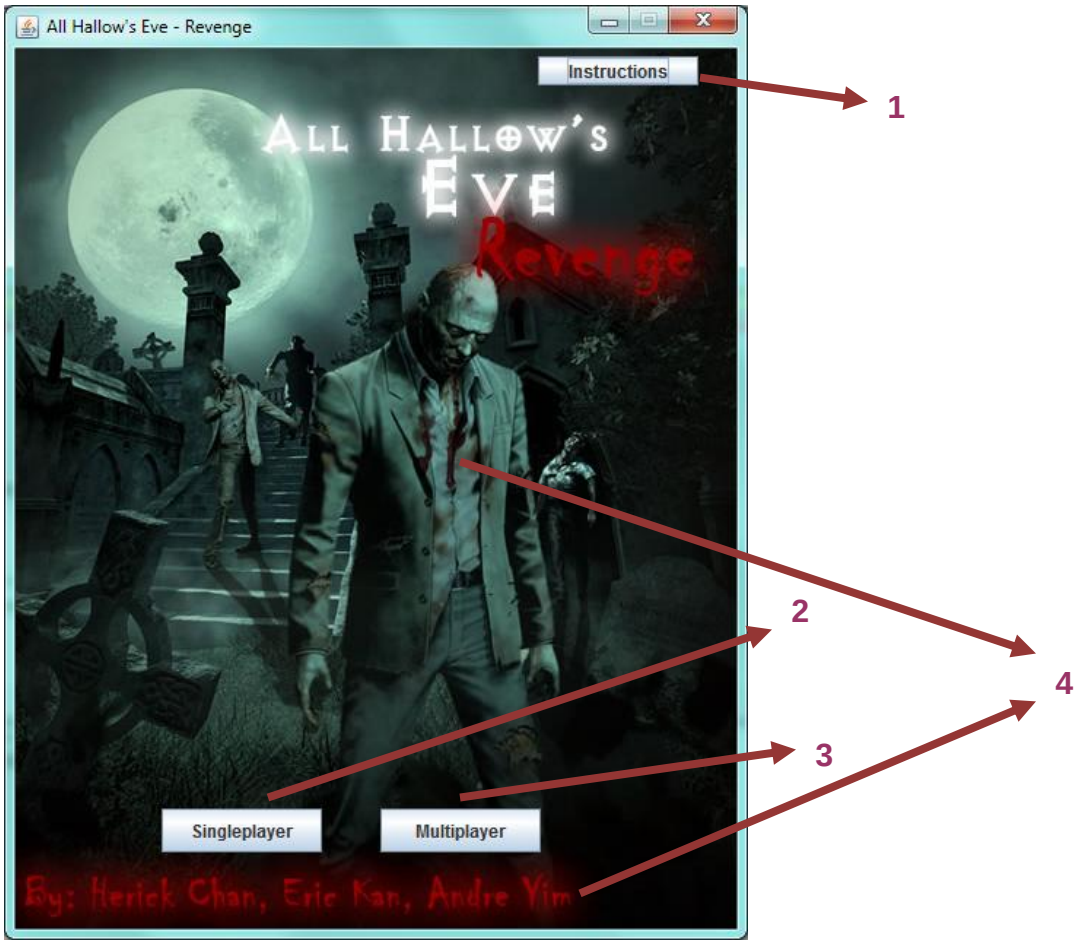
- Array (1-dimensional) for the movement for zombies towards the house
- Multiplayer (2 Player)
    - Create a server and client in order to establish a network with both players
    - Network to transfer the position of zombies and player shooting
- Player

    - Draw image at the top of the house
    - Upgrade weapons (Damage, speed)
    - More damage is done when you shoot the head, less damage is done when you shoot the body
    - Reload is necessary after bullets is used up
- Zombies

    - grow stronger per level (Type, damage, speed, health)
    - Zombies spawn randomly at the bottom of the map
    - Zombies must move towards the door of the house
    - Different types of zombies and Zombie Boss
    - There will be two bosses at the end of the 9th wave
- When the house HP reaches 0, the game will end
- Win condition: Kill all 9 waves, 10 zombies each wave

User Interface Design

Main Menu



1—Instructions. This is created by a JButton. When clicked, it will bring you to the Instructions window where you can view the game instructions. There is an ActionListener that is attached to this button so that it may be have an action.

2—Single Player. This is created by a JButton. When clicked, it will bring you to the game where you may shoot zombies that approach the house. There is an ActionListener that is attached to this button so that it may have an action.

3—Multiplayer. This is created by a JButton. When clicked, it will bring you to a networking screen where you may choose to be the server (hosting), or the client (joining). There is an ActionListener that is attached to this button so that it may have an action.

4—Background. This is a .jpg file that is imported into a JLabel. The JLabel is then imported into our JPanel. The credits of the game is also at the bottom of this image.

Single Player/Multiplayer Screen

1—Defense. The “Defense” label is part of the background image. The defense is the health points of the house, and the maximum health points is 500. Once the defense reaches 0, the game will end. This is created with a drawString under the paintComponent command.

2—Ammo. This ammo is drawn by four bullets by importing the image and then loaded onto the screen by using the paintComponent drawImage command. The user will have 4 bullets and have a reload time of 1 second. The player has unlimited amount of ammo but more damage by shooting the zombie in the head. The best way to play this game is to have ammo management. The “Ammo” label is part of the background image, but the actual “Ammo” number is a drawString under the paintComponent.

3—Waves. This is the number of zombie wave you are currently on. The number of waves starts at 0 and ends at 8, which means that there are 9 waves in total. In each wave, there are 10 zombies and makes a grand total of 90 zombies to kill. The “Wave” label is part of the background image, but the actual “Wave”

4—Kills. This is the number of kills you have in the game. The “Kill” label is part of the background image, but the actual “Kill” label is a drawString under the paintComponent.

5—Background. This is a .jpg file that is imported into a JLabel. The JLabel is then imported into our JPanel. This will also be a BufferedImage.

6—Zombies. This is a zombie 1-Dimensional Array that holds 9 zombies. The zombies have properties from a class file which defines all the health points, damage, and type. There will also be a text file which will have waves defined by either weak, medium, or hard. The zombies will also have a move command, draw command, and attack command. Zombies will be either green (2 shots to the head, or 4 shots to the body to kill), or gray (4 shots to the head, or 8 shots to the body to kill). Depending on the difficulty of the wave, the zombies will spawn accordingly. After the 9th wave, two boss zombies will spawn.

7—Crosshair. This is an image imported as a .jpg file. This is a BufferedImage and is controlled by the movement of your mouse.

Multiplayer Screen

1—Server. This is the choice of “Server” between server and client. By choosing server, you will be hosting the game, and you only need to specify the port number. The square box beside “Server” lets you choose which one you want to pick. The square box is a JButton. There is also an ActionListener for this.

2—Client. This is the choice of “Client” between server and client. By choosing the client, you will be joining the game, and you need to specify which IP Address and Port number you want to connect to. The square box beside “Client” lets you choose which one you want to pick. This square box is a JButton. There is also an ActionListener for this.

3—IP Address. This is the JTextField that will allow you to enter the IP Address that you want to connect to. This is only enabled for the client.

4—Port Number. This is the JTextField that will allow you to enter the Port Number that you want to connect to. This is enabled for both the server and client.

5—Connect. This is the JButton that will establish connection between the server and client once you click “Connect” for both. There is also an ActionListener for this.

6—Waiting for Connections. This is a JTextArea that says it is waiting for the connection before you connect.

7—Main Menu. This is the JButton that lets you return to the main menu.

Game Over Screen

1—Background. This is a .jpg file that is imported into a JLabel. The JLabel is then imported into our JPanel. This will also be a BufferedImage.

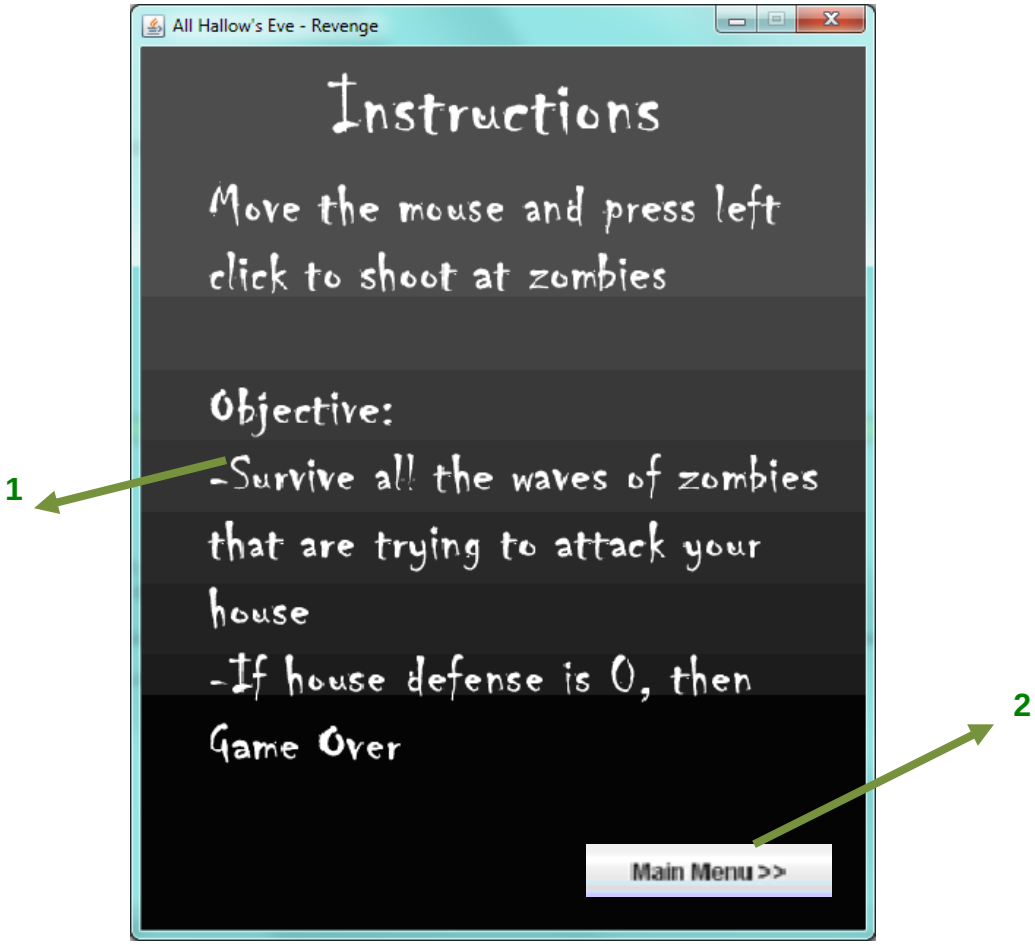
2— Main Menu. This is the JButton that lets you return to the main menu.

Win Screen

1—Background. This is a .jpg file that is imported into a JLabel. The JLabel is then imported into our JPanel. This will also be a BufferedImage.

2— Main Menu. This is the JButton that lets you return to the main menu.

Instructions



1—Background. This is a .jpg file that is imported into a JLabel. The JLabel is then imported into our JPanel. This will also be a BufferedImage.

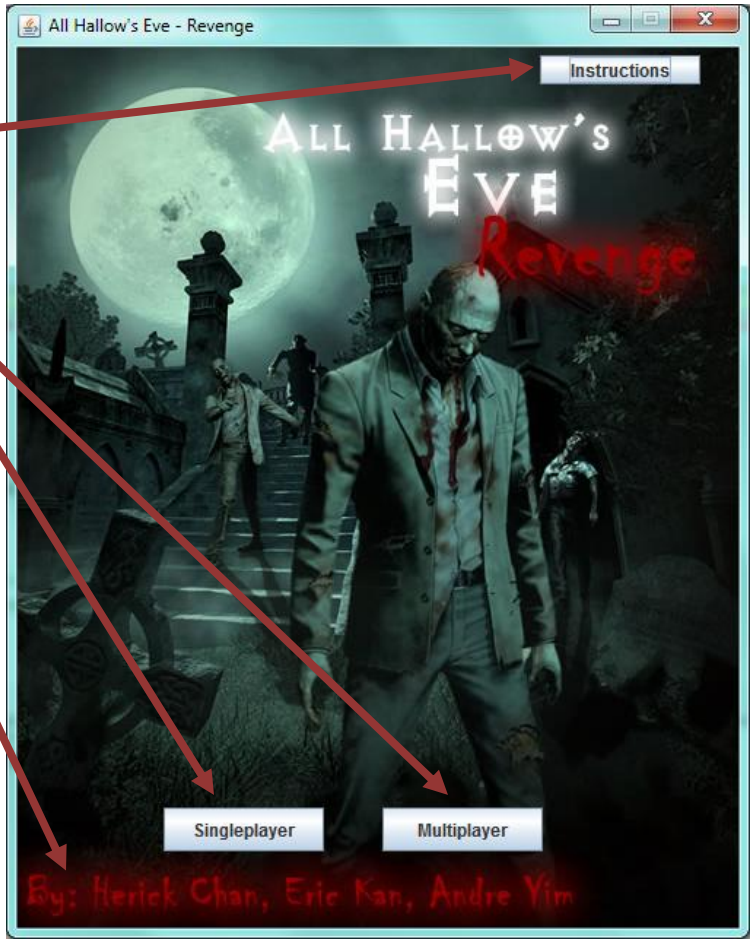
2— Main Menu. This is the JButton that lets you return to the main menu.

User Manual

Little Billy and his friends decided to go into the woods on Halloween with his friends instead of trick or treating this year. The friends wandered around the woods hearing owls and wolves in the distance. Frightened, they run faster and faster. The friends stumbled upon a house and they search the house for any people inside. Billy and his other friend Jimmy walk upstairs to explore when suddenly they hear their friends scream. Billy looks down the stairs and sees a Zombie walk up when he shoots him down with a pistol he found in a closet. Jimmy told Billy that it's too late for their friends and they should just get on the attic balcony. When they reached the balcony, they see a wave of zombies in the distance…
What will you do now little Billy and Jimmy?

Startup Screen

- Instructions
- Multiplayer
- Single Player
- Credits



In this screen, you will be able to click instructions, single player mode, or multiplayer mode. It also labels the title and the credits at the bottom.

Single Player/Multiplayer Screen

- Defense (House HP)
- Ammo
- Waves #
- Kills
- Character
- Zombie Spawn

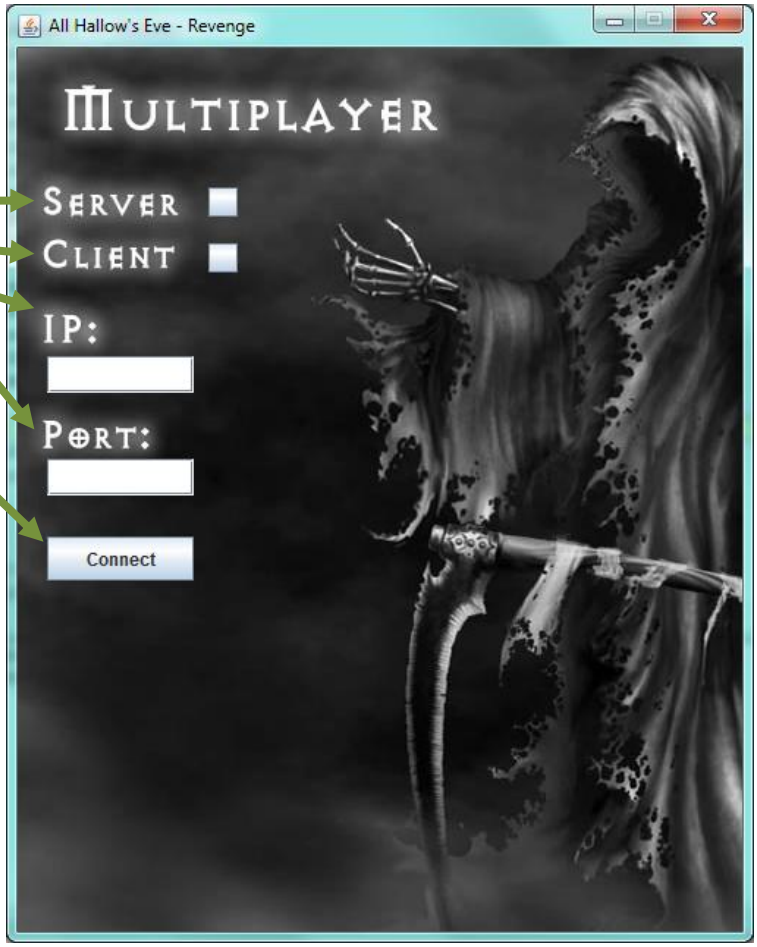
In this screen, you are little Billy, shooting the zombies that attack the house. Your HUD is at the top of the screen, which shows the house health points (defense), ammo (4 bullets with 1 second reload time), wave number, and number of kills.

When shooting, you deal more damage to zombies when you headshot them. For the weak zombies (green), 2 headshots will kill them and 4 body shots will kill them. For the stronger zombies (gray), 4 headshots, and 8 body shots will kill them.

To win the game, you must defeat all 90 zombies. There are 9 waves in total and 10 zombies in each wave. After the 9th wave, there will be two bosses.

Multiplayer Screen (Connecting)

- Server
- Client
- IP Address
- Port Number
- Connect



In this screen, you will be able to choose between hosting the game (server), or joining a team (client). Once you choose either one, enter in the IP address and port number accordingly. Press “connect” once all fields are entered.

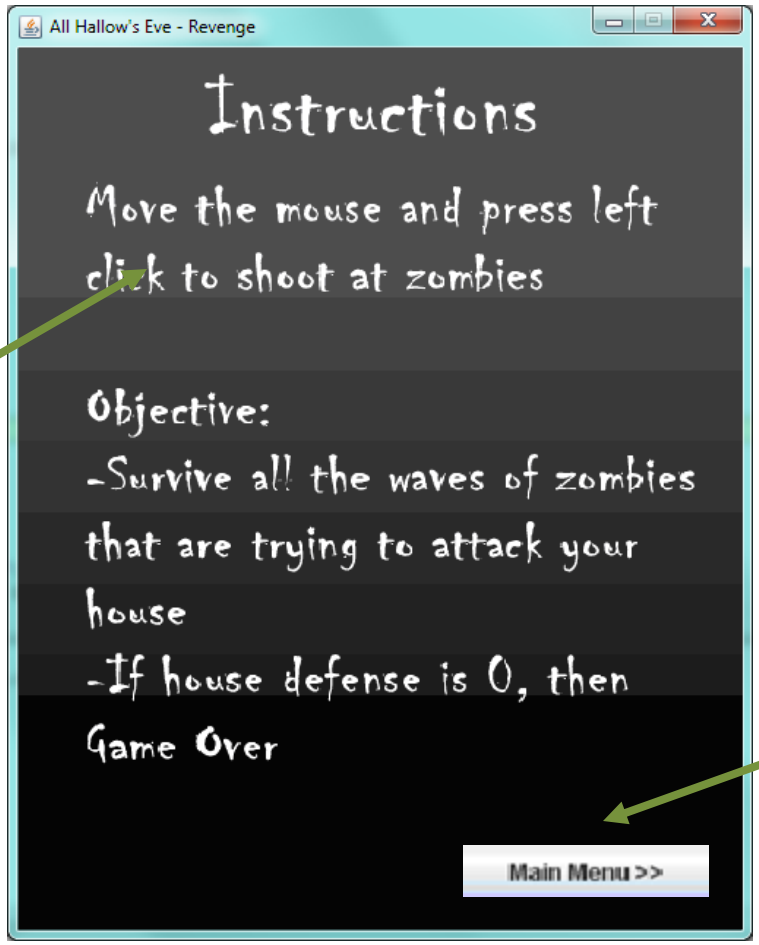
Game Over Screen

If you have reached this screen, you have lost the game. You may press “Main Menu” to return back to the “Main Menu Screen” to choose multiplayer or single player again. In Multiplayer mode, there is a chat box

Win Screen

If you have reached this screen, you have won the game and survived the zombie apocalypse. You may press “Main Menu” to return back to the “Main Menu Screen” to choose multiplayer or single player again.

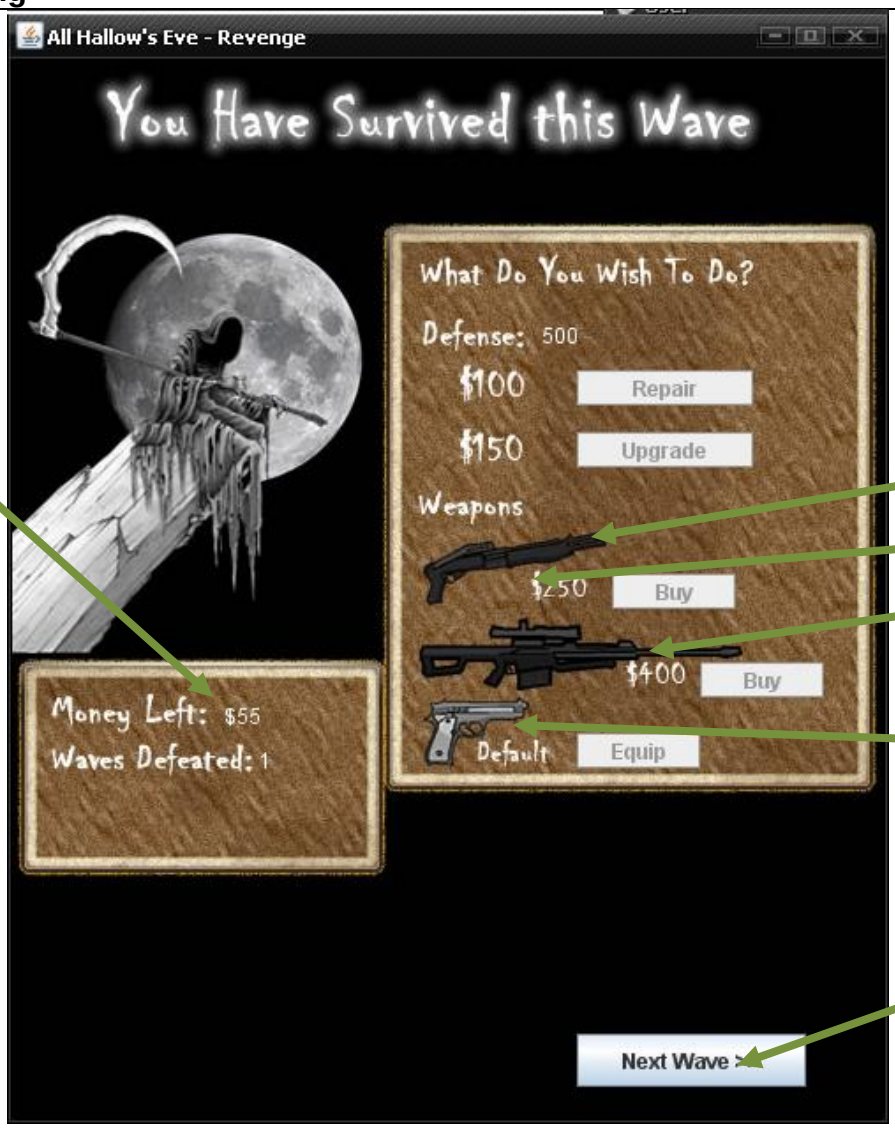
Instructions



- **Background**
- **Main Menu**

In this screen, it will explain the instructions. The objective is to survive all waves of zombies that attack the house, and if the house health points reach 0, the game will end. You are able to return to the main menu once you finish with this screen.

Upgrading



- **Money that you currently have**
- **Shotgun**
- **Cost of gun**
- **Sniper**
- **Magnum (Default)**
- **Proceeds to the next wave**

This screen is the upgrading screen that appears between waves in solo mode. Using the cash earned from killing zombies in each wave, you have the choice to upgrade your defense or your offense. Will you block out zombies with fortified defenses or will you arm yourself with heavy artillery in order to massacre anything that stands in your way?

Weapons Available:
Shotgun – Has a burst shot of 3 bullets that take only 2 ammo from the HUD. Has a greater delay but reaches a wider range.
Sniper – Has a shot of 1 bullet that takes 1 ammo from HUD. It has extra damage but a greater delay so be careful.
Magnum – The default gun that is equipped from the beginning. It has decent damage and delay… nothing too special.

Daily Log

Date	Task accomplished	Need to do
Wed Jan 12	▪ Received Project and group members	▪ Find out requirements and distribute the tasks
Thurs Jan 13	▪ Discussed the requirements ▪ Distributed the tasks evenly	▪ Start programming
Fri Jan 14	▪ Completed Requirements Documentation ▪ Started on Zombie Class File ▪ Found images of zombies	▪ Networking between two players ▪ Make the main menu
Sat Jan 15	▪ Completed Zombie Class File ▪ Started working on Class Definition Documentation	▪ Networking between two players ▪ Make a file reading for a text file that says the different waves of zombies
Sun Jan 16	▪ Completed main menu (play, instructions, and credits)	▪ Networking between two players ▪ Make the zombies spawn at random positions
Mon Jan 17	▪ Implemented file reading and multiplayer screen ▪ Imported the house image	▪ Networking between two players ▪ Make the zombies spawn ▪ Implement shooting zombies ▪ Have zombies attack the house
Tues Jan 18	▪ Zombies now spawn at random locations ▪ Zombies move towards the house	▪ Networking between two players ▪ Implement shooting zombies ▪ Have zombies attack the house
Wed Jan 19	▪ Implemented shooting into the game ▪ Zombies deal damage to the house ▪ Created a HUD for house hp, ammo, wave #, and kills	▪ Networking between two players ▪ Create different zombie types and boss
Thus Jan 20	▪ Both sides can kill the zombie ▪ Networking is working between server/client ▪ Both crosshairs visible on both screens	▪ Fix network bugs ▪ Add different gun upgrades ▪ Add Delay ▪ Fix other bugs
Fri Jan 21	▪ Fixed most bugs ▪ Started to add gun upgrades ▪ Finished Defense repair + upgrades	▪ Finish gun upgrades ▪ Fix new network bugs
Sat Jan 22	▪ Finished most gun upgrades ▪ Fixed some zombie HP bugs	▪ Finish the rest of gun upgrades ▪ Fix more networking bugs
Sun Jan 23	▪ Fixed all/most bugs and completed upgrades	▪ DONE!