Chayce Heiberg

Arnold Castro

Donovan Roberts

Gauntlet

**Game Overview:**

Gauntlet is an dungeon-explorer arcade game developed in the 1980’s by Atari Games. There can be up to four players at once, which you can choose your character as either a barbarian, wizard, valkyrie, or elf. Each character has a unique power such as strongest melee attack, strongest ranged attack, or highest defensive armour. The gameplay is set as a top down view in third-person in a series of mazes where the objective is to find the key in order to unlock the exit door in each room. Throughout the map there are various power-up items that can increase a player’s health, increase the total points of the party, or destroy nearby enemies. There are also spawn points that enemies come out of a players. It is the job of all of the players to make sure they do not die and kill enemy spawns if necessary. There are a variety of enemy characters such as ghosts, demons, thieves, and sorcerers, which have different attack styles. Players can avoid enemy’s attacks by dodging ranged/melee attacks or killing them from a farther distance. As levels progress, the enemies become stronger and it takes more skill from the players in order to continue progressing. Often times some players will have low health, and it is the job of teammates to share food in order to ensure players don’t die off. There are no bosses in the game, however there is an enemy called “death” that is hard to kill and will drain player’s health. The game was fairly popular, selling 8000 arcade machines, and also winning a game of the year award. Many future games would use gauntlet as a model to develop more complex dungeon-based games.

Enemies generally follow a pathfinding algorithm toward players, however the algorithm does not take into account diagonal weights since players would not be able to effectively use ranged attacks in diagonal directions to kill off swarms of enemies. For this reason enemies generally follow horizontal and vertical paths to make them easier to kill.

**Architecture:**

We are going to follow a server-client model where players join a party as a client. Each time a player attempts to move their character or attack an enemy, their client socket will message the server asking if their move will be valid based on the server’s game state. If valid, the server will update the state, otherwise ignore the client’s request. This architecture should ensure synchronization across clients since the server is the only process handling actual game state changes, and then informing the clients and updating their user interface.

**Development Strategy:**

For this project we will start from scratch we will not reuse any of our old code other than as a reference for how something is implemented. For starting we plan on dividing initial task and then coming together as soon as we have some basic mechanics done to get an initial starting state. Chayce will first get started on setting up the networking side for just two players for starting. In the meantime Arnold will get started with making a map and objects in the map and beginning on looking how the scroller works and how to best implement it. Donovan will then work on finding characters that may fit out game in free game art and once he has those he will get started on getting them to move through the map. When all of this is done we will then work together on getting some more behaviours for the character and doing some testing to make sure all of our current code is running correctly. From here we plan on getting new subtasks from our pool of issues that still need to get done in order to get the game completed.

Task Timeline:

By November 9

* Have map up with scrolling
* Have networking mostly done
* Have all playable characters and some basic movement
* Find enemy sprites
* Tests that our code does not have any major issues or bugs

By November 16

* Have all player unique skills done
* Flush anything out for the networking piece
* Start and possibly finish pathfinding for the enemies

By November 28

* Have enemy pathfinding done
* Figure out collison between the players and the enemies
* Implement a scoring system
* Anything else we can manage

**High Bar:**

One highbar will be a boss spawn on the last dungeon room. The boss would have more complex enemy mechanics such as faster movement, stronger attacks, and a larger health bar. Defeating the boss would then end the game.

Another highbar we would like to implement is an inventory where players are able to pick up items around the map and keep them throughout the gameplay. At any given time players would be able to equip different items in their inventory and switch out their current main-hand weapon.

**Low Bar Checklist:**

Networking - allowing 2 player format through a server.

Characters - having multiple playable characters to select with different abilities.

Barbarian - Does more melee damage.

Wizard - Potion attack does more damage.

Valkyrie - Has more defense.

Elf - Has more speed.

Enemies - having multiple enemies that attack the player.

Map - dungeon crawler map, with scrolling.

Map Objects - power up, keys, and other objects placed in the map.

Power-ups - Affect the player and give some advantage.

Extra Armor - Gives More defense.

Extra Magic - Potion attacks are better.

Extra Shot Power - Shot is more powerful.

Extra Shot Speed - Shot moves faster.

Extra Speed - Character moves faster.

Extra Fight Power - Melee is stronger.

Potions - used for magical attacking.

