**Game Design Document for:**

# Gladiator

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# Project Management

## Milestones

These are what I wanted to be done and at what time. If I completed the milestone I would start stretch goals I have set for that specific milestone, most likely starting of the next milestone.

### Milestone #1

My first milestone for this project is to try and get the movement done by the 9th of February. This gives me a week to do it and allows me to smooth it out. I did this in a couple of days so I started on a stretch goal already. I created an arena, my player model and an animation for walking.

### Milestone #2

My next milestone was to make the AI. I gave myself another week to do this since I already had the model of the enemies/players. I made it so they spawn in random set locations, the enemies will go towards the player. Finally, I wanted to I want to make them attackable so you can kill them. In this I managed to reach it again and added some more stretch goals such as the UI, more enemies per round (multiple rounds)

### Milestone #3

My third milestone is the create is so that the player can die. This means I want to implement a functional health bar where you can see your health go up and down. I only gave myself a day to do this and once again It was easily succeeded. This meant I would start the next milestone early. I simply made it so that you gain 300 points every kill

### Milestone #4

My fourth milestone was to start a health regeneration. I wanted it so every 3 seconds you will gain 10 health but found out you heal way too quickly for my liking. I changed that to every 10 seconds you get 10 health (essentially a second a health). Also, I wanted to get the death screen done and built showing you your stats of that game: Kills, Rounds and Score. I gave myself only a day to do this and it was easily achievable. To finish this milestone where I had a small amount of time left of the day, I slightly fixed the colliders and then built the prototype game

### Milestone #5

For my final milestone, I completed the rest of my game. This includes adding the shop functionality, health potion functionality and also pausing the game. I gave myself 3 days to do this, but I reached 4 days. The rest of my time on the assignment (2 days), was left to fine tuning and getting people to playtest the game.

## Schedule

I followed my schedule per day. Sometimes I may have overlapped with work depending on the day, but for the most part this was followed till the end of the project

[My Schedule](file:///C:\Users\floyd\Documents\GitHub\Tech-Demo\Tech-Demo\Schedule.xlsx)

## Trello

While in production, I created and constantly updated a Trello board. I had sections based on each milestone. Each one had stretch goals as well as a checklist to keep me on track. Each milestone would have a detailed description on what I expected by the end of my time and a label saying if it is a must do, optional or a stretch goal.

### Red Label

The red label is stuff that has to be done as part of the milestone. This means that it needs to be done by the time of the milestone.

### Green Label

The green label are my stretch goals for that milestone. This means if I have time, I can start it, however, it doesn’t matter since I would have started it in a milestone to come. An example of this is the point system. I created that as a stretch goal in 3rd Milestone, however, originally planned to implement it in my 5th Milestone

### Purple Label

The purple label was implemented near the end of my project. I wanted these to be done, just to make the game look cooler. Since this is a prototype, these are more likely to be added in for a showcase of the game or even a final release

Graphical user interface, website

Description automatically generated with medium confidence

[My Trello Board](https://trello.com/invite/b/C7Mt3Xaj/b8260e0262efc15b77fb98d32175c48b/tech-demo)

[Gant Schedule](https://prod.teamgantt.com/gantt/schedule/?ids=3007576#&ids=3007576&user=&custom=&company=&hide_completed=false&date_filter=&color_filter=)

## Source Control

I used GitHub to keep track of all my updates. After every milestone, I will push a commit to GitHub.com and it is available to use everywhere, whoever has access to the git. I can download these updates from anywhere in the world and push them. If I make an error that could corrupt a file, I can use GitHub to get the most recent build and learn from my mistakes. This is useful when working in teams because you can make a pull request. A pull request allows you to modify files sperate from the main commit and then merge them into the main commit whenever you want. I didn’t use this since I am a solo developer, however it can be every useful.

Graphical user interface, application

Description automatically generated

# Game Overview

## Philosophy/ theme/ morals

I like the idea of the vr game GORN. It is a gladiator wave game and I enjoy these types of games. I want to make an endless game which will only end when you die. I want a range of medieval weapons to stick to the theme

## Philosophical point #1

The game is to show of my skills I have developed over the past weeks in developing and while I do it, show off my modeling and learn how to add animations into the game.

## Philosophical point #2

I’m trying to achieve an immersive game which can be played for hours at a time. I will look at gladiator rings in films, video games (such as cod zombies) and even read descriptions of them from books

# Gameplay Loop

## What is it

The Gameplay loop of Gladiator is: Killing, Earn Points, Spend Points. While doing this you will have to make sure you are not killed, always keep an eye on your health and seeing how long you can last in an endless forever getting harder game

## Mechanics

There isn’t many mechanics of this game but each of them is complex in their own way:

### Punching

You can punch enemies. This is done by using left mouse button and was created by checking colliders and using trigger collisions. This will give you points to spend in the shop.

### Shop

You can buy 3 different items, a mace, a sword and health potions. This is done by creating a class called Items and inside an enumerator with all the items, how much they cost and their functions

### Enemy Spawning

The enemies can spawn in set locations picked randomly. They will spawn in front of your eye and all at once to create a menacing atmosphere.

### Healing

You gain 10 health every 5 seconds automatically. This is done with coroutines so that you can wait seconds. There is another 5 second cooldown meaning you get 10hp every 10 seconds. In addition, when you kill an enemy you will gain 10 hp per kill to give you a fighting chance

### Health Potions

The second form of healing is Health Potions. You can buy these for a low price of 5000 points. This can be gathered after killing around 20 enemies. This is done by a function called “Heal()” which will deduct one from your health potion pot and increase your health by 50. You must have at least one before it can be used.

### Weapons

Even though you can’t see them, buying a mace or a sword will do a significant amount more damage. For example, your base damage is 150. Buying a mace will add 850, increasing your damage to 1000. A sword, which is more expensive, will add 1350, increasing your damage to 1500.

### Enemies Health and Damage

After every round, the enemies will gain 100 more damage, but, if it is above round 9, it will also multiple their health by 1.1. After some rounds this will create significant difficulty. The enemies have a base damage of 49, meaning it will take 3 hits to kill you.

# Planning

## What I planned

I planned out what the arena you fought in would be, how the enemies would look, the weapons you’d be able to pick from and the game idea.

## Why I planned

I planned out specific stuff because I wanted to make sure I had an idea instead of jumping into the game and doing it blindly.

## How I planned

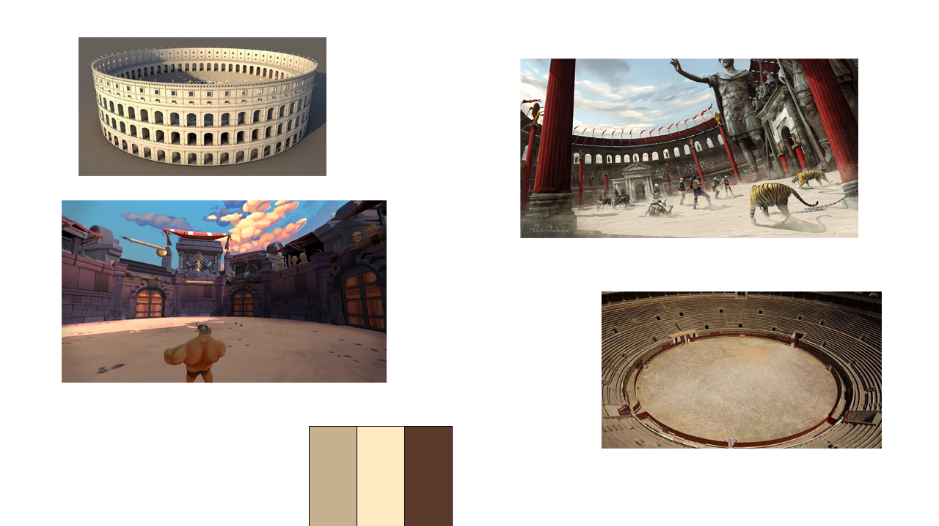
I planned differently depending on what it was. For example, I made a mood board for certain items, and some was just discussions on reddit.

### The Game Idea

The game idea is a mix between Call of Duty zombies mode and the game Gorn. This is because they are both big successful franchises

### Arena

I planned out the arena by making a mood board of games, real world, and concept art. From this I saw they are all enclosed and are circular, which sounds obvious, but some of the smaller details on how the there is no roof and they have menacing looks. Also, the colours used helped me decided what material to use on my model in the prototype



### Weapons

I checked out a game called Gorn to figure out what types of weapons there are and how you acquire them. I saw mostly fantasy type weapons such as sword, maces, bows and even magic. My original plan was to add a fireball however I never added to it since Health Potions was “fantasy” enough for me

# Blackbox Testing

## What is black box testing?

Black box testing is the testing of a specific functionality. For example, in my prototype, I could test the shop function three times to make sure I get the results I want. This is useful to make sure there are no problems in my code, and everything is up to standard.

## Movement

|  |  |  |
| --- | --- | --- |
| Expected Result | Actual Result | How to fix |
| Be able to walk around and turn the camera without any problems | Works but when you look up and hold W you fly | Change the walking code to a more 3d space code |
| No longer fly upwards | You are now stuck to the ground, and everything works smoothly, except sprinting. It does nothing when you hold shift | Forgot to make the bool true when you are holding shift. Need to change that |
| Running, Sprinting and no flying in movement | Works exactly how it’s meant to be and no longer have to touch it | Don’t need to fix it at all |