

## **Y2\_GameProgramming – Joshua Martin**

Year 2 Game Design & Development - Game Programming Module Work

GitHub Link to Prototype Project:

<https://github.com/JoshAM1209/Game-Programming-Prototype>

Link to Prototype Gameplay Video:

<https://drive.google.com/file/d/1DHgWp4inHMu4KnUaR2DOO3B0RXiGvOLY/view?usp=sharing>

### **Learning Journal**

#### **15-10-2024**

Created a GitHub repository and Learning Journal through editing README file through GitHub

#### **22-10-2024**

Tutorial 1: Planning on creating a tutorial for a basic health system. To start with I plan to create the entire system first so I know what will/won't need to be covered by the tutorial and be able to adjust accordingly. After spending a little bit of time refreshing my memory on what I need to do in order to create this system, I have created a functioning, albeit extremely basic health system using triggers and tags. A script on the player object stores values for the player's maximum health and current health. Each trigger has a tag that determines whether entering it will decrease or increase the player's health. The player also has a max HP value, and they are prevented from increasing their HP over the max. The player object is also destroyed when their HP reaches 0.

#### **29-10-2024**

Tutorial 1: With the coding for the first tutorial completed. I have begun to write the written tutorial itself. I have started out with just a written draft with just text with the intention to go back and add images and screenshots later. There were some moments where I had slight issue explaining or properly conveying how to do things.

#### **5-11-2024**

Tutorial 1: I finished up my writing for the first tutorial and decided to plan out what I intended to do for the rest of my tutorials. I think that planning each one ahead before I do it would make things easier as I will not have to scramble for a topic each time, I finish a tutorial. My intention is to use the topic covered in each tutorial within my prototype, but I do not want to use the prototype project for the tutorials as I feel as though it might end up overcomplicating my tutorials.

#### **12-11-2024**

Tutorial 2: For my second tutorial I have decided to create an attack system. Once again, I have started by coding it out before I start to write the tutorial. I have implemented a hitbox that destroys objects with the enemy tag that it makes contact, the hitbox is spawned in from of the cube representing the player whenever the spacebar is pressed and lasts for half a second before being destroyed. The hitbox also moves alongside the player cube if the player moves while the hitbox is still active.

**19-11-2024**

Tutorial 2: I began writing my second tutorial. Same as the first I have started with a written draft and intend to add in pictures and screenshots later. After writing up the first tutorial I had an easier time writing this one however it still took up a lot of time.

**26-11-2024**

Tutorial 3: I made a start on my next tutorial which is spawning objects in random positions. I set up a basic cube to spawn whenever the spacebar was pressed and then used a random number generator to spawn it at a random position on each axis every time a new object was spawned. This tutorial was quicker to code than my previous to so I have also made a start on the writing for this one using the same method as before.

**3-12-2024**

Tutorial 3: I continued the writing for my third tutorial however I feel that this tutorial is too short compared to the others, so I have also implemented spawning one of three random objects, on top of spawning each in a random location, to my project to hopefully extend this tutorial bit. I have begun to write the extra part for my extra code.

**10-12-2024**

Prototype: Instead of moving straight on to my next tutorial. I have changed plan and decided to and move on to starting my prototype. The change in plans has come from the idea to use my prototype as part of my submission for the interdisciplinary practice module alongside this one. I hope to complete my prototype and make a copy of it to which I can apply some visuals for the other module. As a result, I think it would be best to make a start on the prototype sooner rather than later. I plan to make a simple 2D bullet game. After planning out the systems I intend to use, I started by implement basic movement and the health system from my tutorial.

**17-12-2024**

Prototype: I continued to work on my prototype this time implementing hit detection on the bullet objects as well as implementing pick ups to restore health and increase the player's score. I did not get to work on the prototype as much as I had hoped to as I had some issues with GitHub that were preventing me from pushing changes to the project used for my tutorial and I wanted to make sure I got those problems fixed so that I could access my projects from home over Christmas break.

**7-01-2025**

Prototype: I have spent most of this day finishing my prototype and it is now at a stage where I feel like it is completed. I went again the initial plan and did not end up using the attack system from my second tutorial as I felt all ways I could have implemented it into my gameplay loop were a little complicated for a prototype. The prototype now includes UI for the players health and score as well as the current difficulty level. The game has featured an increasing difficulty through the use of timers that will increase the fire rate of bullets for every minute the player survives as well as random pickup spawn locations with pickups spawning at set intervals

**8-01-2025**

Tutorial 4: I worked a longer than usual this day to get my last tutorial finished. The code part was easier than the previous tutorials as I took code I have already implemented into my prototype, being the timers for spawning at set intervals and destroying bullets. This quicker coding process allowed me to quickly move on to the writing which I was also able to complete.

## **9-01-2025**

Refining: I tweaked the difficulty of my prototype as it was considerably more difficult than I intended due to coding error resulting in nearly the entire screen being full of bullets at only difficulty level 4 out of 10. I also updated the readme with instructions on how to play the game before recording a new video of my gameplay. I went back through and tweaked my written tutorials as well as added screenshots. Leaving screenshots until last did end up backfiring as I had to redo some of my already finished code in order to get screenshots of it in an earlier state.