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**Unity Project**

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**Description of Game.**

The game is a 2D “Top View” game.

You play as a spaceship with deadly lasers coming at you. You cannot manoeuvre around them. Instead, you must change the ship’s colour to match that of the lasers.

By pressing space, you alternate between Red and Blue, allowing you to pass through the different coloured lasers if timed right.

If you are hit, you are dead.

There are also balls of energy flying by. You can move the ship up and down in an attempt to catch the energy. Each time you collect energy, you get a point. However, for each point of energy you pick up, lasers start spawning quicker.

The higher your score, the more difficult the game becomes.

**Development Process.**

Development was tough. 90% of the time was spent searching the internet for code to use or even basic Unity guides.

That said, no script was outright taken from online. Code taken was either heavily edited to fit a different purpose or only partially taken.

**Testing and Problems.**

I ran into many different problems with Unity’s way of doing things while writing the code.

For example, you can’t add existing objects as a parameter on a prefab. You can only add other prefabs.

If you have a changing value on an existing object and you are spawning in objects, you cannot have the changing value affect the clones that are spawned in.

I couldn’t have my ship’s bool isRed value affect any incoming laser clones. They all were set to watch the prefab of the player and the prefab’s value could not be changed. At the same time, I couldn’t add the existing ship object to the lasers because their prefabs don’t accept currently existing objects.

This issue caused me to rewrite half my code.

I also couldn’t find a way of changing the ship’s colour without using an animation. This means that while the ship is red, it’s actually looping between 2 identical red ship images as an animation.

I found that FixedUpdate doesn’t work very well with button presses. On occasion, the spacebar didn’t work, causing the ship to remain the same colour and be destroyed by a laser.

Update did not have this problem.

**Solutions.**

As stated on the last page, by biggest issue was that prefabs couldn’t take existing objects as a parameter. Thankfully, Unity has a hero and it’s called a Tag.

I was able to code specific tags and specific interactions with tags into the laser prefabs. That way, they wouldn’t need to accept any other GameObjects. They would just wait for an object with a specific tag to enter their hitboxes.

I added a line of code which changes the tag of the ship when the spacebar is hit. This meant that I could cycle between PlayerRed and PlayerBlue tags and still have the lasers interact in unique ways while using a single script for both types.