# Space Shooter Final Submission Journal

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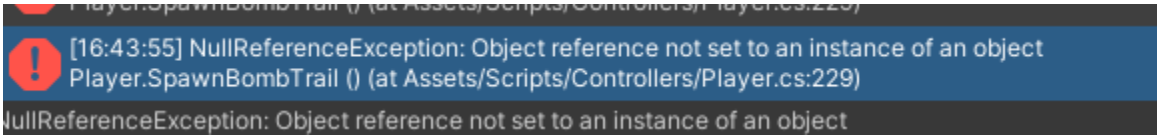
Final Commit (Full text link is at the bottom of the PDF)

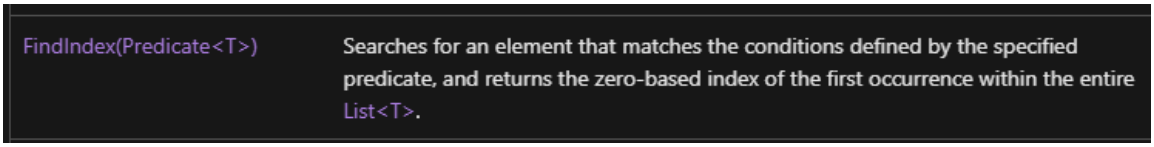
## Task 1: Adding homing mines the player can spawn

So this task is the first I am doing today, and I will note, I am not 100% while doing this. And my PC decided to soft-shutdown during this. Which I don't even want to get into. So this is a lil disjointed.

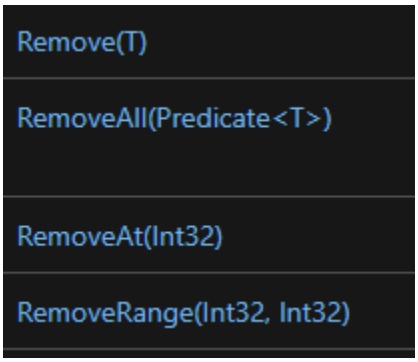
Anyway, this task started with me instantiating an empty list to hold the mines, easy enough, and assigning how each mine has to be handled became a method. The method just needed to check how far from the last mine that was spawned, then make the next one. FYI to be a smart ass to myself I decided they had to be spawning, actually behind the player, so I had to re-figure out angle. I still don't entirely know how quaternions work. Anyway, the spawning code is, as far as I can tell, okay! I set up the prefab for the mines, called mines, and wrote out a code to handle the chase and explosion. Getting the sendmessage stuff set up was as always, a headache in the making, but it worked, and there were lots of tests along the way so I knew exactly how and what was happening. Well, we get to the final test, where I have all the code together, and guess what. I forgot to test if it actually knows how to handle an empty list ladies and gentlemen. The Player code, where all this mine spawning stuff is stored, cant figure out how to check if a list is empty, without something being in the list. So I dunno what to tell ya. Here's some of the fun things I discovered during the process.




The player code losing it's proverbial mind over an empty list.




I tried to figure out how FindIndex for C# worked, that was too much of a headache so I just ran a for loop and looked for the matching transform location against each object in the list.




Learned there is an excessive number of ways to remove objects from a list, and that I have no idea what a predicate is. But hey, at least the Microsoft framework stuff is well documented for me to be confused about.

Task 1: Failure? (3 hours including the crash)

References used:

Object Destroy

Send Message

Trig Lecture Slides

C# List Methods in Microsoft Website Documentation (Note this included the RemoveAt entry, and FindIndex entry)

# Task 2: Deflection Sheild

In the process of doing this task I:

- Made unity forget what a Vector2 was
- Made unity forget what Mathf did
- Cried in disbelief

Okay so, this is as much time as I am willing to spend on this one, but I actually did better than I thought I would. So reflect took a bit of noodling, but by tracking the meteors individually with their own assigned variable name, it makes it hella easier. The biggest problem I had was, since the Vector2.Reflect only takes 2 arguments, I had to figure out how to handle the output, which is supposedly the reflected movement angle. And it works! Mostly. The reflect is happening right on the player's transform, even though I was sure I had used the shield's transform. But hey at least it's reflecting.

Task 3: success sorta (1 hour 25 minutes)

```
// Start is called before the first frame update
public Vector3 direction = new Vector3(-1, -1);
Vector2 target;
public float speed;
Unity Message | 0 references
void Start()...

1 reference
void Travel()
```

You see how the Vector2 variable is highlighted, like "hey I know what this is!"? Yah during the process of writing the code for the meteors, it lost that bit of knowledge, I had to restart visual studios 3 times to be able to get it back. (And I still don't know why it forgot it in the first place!)

```
//East, 0 degrees
shieldPoints.Add(new Vector2(transform.position
//north east, 45 degrees
tempX = FindX(45f, shieldDistance);
tempY = FindY(45f, shieldDistance);
shieldPoints.Add(new Vector2(tempX, tempY));
// north
tempX = FindX(90f, shieldDistance);
tempY = FindY(90f, shieldDistance);
shieldPoints.Add(new Vector2(tempX, tempY));
//north west
tempX = FindX(135f, shieldDistance);
tempY = FindY(135f, shieldDistance);
shieldPoints.Add(new Vector2(tempX, tempY));
// west
tempX = FindX(180f, shieldDistance);
tempY = FindY(180f, shieldDistance);
shieldPoints.Add(new Vector2(tempX, tempY));
// south west
tempX = FindX(225f, shieldDistance);
tempY = FindY(225f, shieldDistance);
shieldPoints.Add(new Vector2(tempX, tempY));
//south
tempX = FindX(270f, shieldDistance);
tempY = FindY(270f, shieldDistance);
shieldPoints.Add(new Vector2(tempX, tempY));
//south east
tempX = FindX(315f, shieldDistance);
tempY = FindY(315f, shieldDistance);
shieldPoints.Add(new Vector2(tempX, tempY));
// yay all the points are set, now draw it plea
```

Honestly this was probably unnecessarily hard way to make the shield visual. But It makes sense to me, so I will take it and run with it.

Tutorial Video about Reflect

Above tutorial was just so I understood how the angle looked coming back out. It sorta helped.

Shield's Normal

Reflect Method

Considered Using

Ultimately skipped smoothdamp, and just set a specific angle for the meteors to follow, then applied their movement there.

## Task 3: Spin the spaceship visual

~~Okay not gonna lie here, I kind of already know how to do this. I've done it before. Just not with someone else's sprite and with vector 3. So I am gonna TRY to remake it with vector 2. No promises.~~

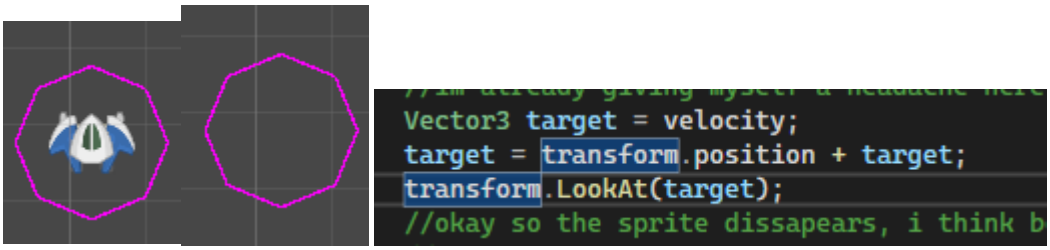
I tried, it makes no sense, I am a fool and a liar. I have in fact previously done it, but as I said, with lookat, and man I am floundering trying this. So, here's the breakdown. I tried just the basic lookat. Took about 10 minutes to realize why my object disappears when I do that, "forwards" is on the z axis, which isn't handled at all in 2D. So then, I decide okay, so the rotate method in transform.rotate also does rotation stuff. And I start looking at that, so far, decent, it makes sense,

then I get to the “worldspace vs local space” stuff. And that gets a bit over my head. But everything spawns in the same way in worldspace. So any rotations I do will apply to it based on worldspace yes? Yes. Except it wants it in euler. I haven’t the slightest idea what euler is. Keely I am so tired by this point I want to cry. Why does it want it in euler? How does euler relate to degrees? What’s this madness about quaternions? When did English stop making sense as a language!?

So I give on attempting this task. Before I break something in my apartment.

Have a look at the pages I was reading I guess. And the funny thing that my dude does when I try “lookat” on him.

Task 3: Failure (1 hour 15 minutes)




LookAt

Rotate

Euler Angles AKA my breaking point

Repository Commit Link

https://github.com/Xiomaraze/Arnott_SpaceShooter/commit/49189a3c22b7ee49475311ea927b38f2293862a9