

# Final Design

*See README.txt or README.pdf for instructions.*

- This will be a 3D space game. The goal is to get from one corner of the cube area to the planet in the other corner.
- However, there will be obstacles and enemies that periodically spawn. They'll spawn some distance away from the player so that the player doesn't instantly get hit. The obstacles will be still, but the enemies will fire missiles at you approximately every second.
- If you crash into an obstacle, an enemy, or get hit by a missile, you die. If you reach the planet without first killing an enemy, you die.
- You can shoot your own missiles towards the enemy. Enemies will die with a single hit of your missile.
- If you die or hit the map boundary, you lose. If you reach the planet after shooting down an enemy, you'll win.
- **Aesthetic goals:**
  1. Fantasy: the player is flying around in space trying to avoid space debris and ships.
    - Success would be an engaging portrayal of space.
    - Failure would be having something that doesn't look or feel like space.
  2. Challenge: the player should experience some difficulty with dodging space debris and missiles.
    - Success would be a well-balanced game that has some challenges but is not too difficult.
    - Failure would be making the game too easy to beat or too difficult to win.
- **Core loop:**
  1. Fly towards the planet.
  2. Avoid space debris (turn and move away from hazard)
  3. Dodge enemy missiles (turn and move away from hazard)
  4. Shoot at enemies (turn towards something you want to shoot)

## Dev Log

Dec 4

- Preliminary design work:
  - This will be a 3D space game. The goal is to get from one corner of the cube to the planet in the other corner.
  - However, there will be obstacles and enemies that periodically spawn (perhaps every 5 seconds). They'll spawn some distance away from the player so that the player doesn't instantly get hit. The obstacles will be still, but the enemies will fire missiles at you every 2 seconds (subject to change).
  - If you crash into an obstacle or get hit by a missile, you die.
  - You can shoot your own missiles towards the enemy. Enemies will die with a single hit of your missile. Play a sound.

- The scoring system gives one point for each meter traveled, and it gives 20 points for every enemy killed.
- (This may not be implemented) After a certain number of points, you'll get an immunity speed boost that lasts for 2 seconds where you can go 1.5x as fast and be immune to projectiles/asteroids. It'll play a sound for the duration of the boost.
- If you die or hit the map boundary, you lose. If you reach the planet, you'll win. After the win/lose screen, you can press a button to restart.
- Aesthetic goals:
  3. Fantasy: the player is flying around in space trying to avoid space debris and ships.
    - Success would be an engaging portrayal of space.
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  4. Challenge: the player should experience some difficulty with dodging space debris and missiles.
    - Success would be a well-balanced game that has some challenges but is not too difficult.
    - Failure would be making the game too easy to beat or too difficult to win.
- Core loop:
  5. Fly towards the planet.
  6. Avoid space debris (turn and move away from hazard)
  7. Dodge enemy missiles (turn and move away from hazard)
  8. Shoot at enemies (turn towards something you want to shoot)
- Set up the game and files.
  - Made all prefabs, player camera, and all objects on screen (planet, boundary cube).
  - Implemented player controls in PlayerController.cs. Need to add OnTriggerEnter.
  - Added spawning code in Spawner.cs.

#### Dec 6

- Added the GameManager and primary functions.
  - Movement is now on correct joystick configuration.
  - Collisions are there and result in win/loss.
- Enemies can shoot; I ran into an issue where the missiles would spawn right on top of the enemies and as a result would kill them immediately. To resolve this, I made separate enemy missile and player missile logic flows so that enemy missiles don't kill enemies.
- Need to get the correct control for player shooting.

#### Dec 7

- Got the player shooting to work. Made some edits on the speeds of things (like missile and player movement speeds).
- Added audio for shooting.
- Adding an additional feature – you have to shoot down an enemy ship before you can go to the planet.
- Finalized everything.