

Required Features:

- **Rigid Body physics to space invader ships**
 - o when a ship dies it becomes one of the green explosion cubes that floats around like being “dead in space”. It “falls” closer to the ground where the player’s ship is; however, due to lower gravity based on certain rotations and transformations to the original mesh, the movement of the cubes is slowed as well. The player can interact with these cubes by hitting them, sliding against them, etc. Due to the original transformation of the shapes being different than normal, when their “debris” is created it has a wormhole effect and appears in different areas of the screen based on the initial conditions designated for the mesh (some were inverted to go upwards to denote more feeling of “space” and all textures were matched up so the enemy figures would be still facing the correct direction for the viewer). For every game you play while still having the same game application open, the ‘dead’ enemies stay in the background making the game more difficult to follow (ie the more games you play the harder it is).
- **Physically-based Space Invader and Player Bullets**
 - o These were made similar to the Rigid Body physics for the space invader ships; however, after being shot from either side, once they hit a viable target, they become one of the grey explosion cubes that fall towards the ground and mostly stay in that region (again, due to their lower gravity, they bounce a bit in that region). When more bullets hit surfaces, these are spawned in a collective so more and more bullets fill the scene cluttering up the area making it harder to play as time goes on.
- **Particle-based explosion when the player ship is destroyed**
 - o This explosion occurs for about 3 seconds after the player is dead/losing a life. To implement this, I used a particle-system that just pauses/plays for specific durations as needed.
- **1 new resource** – there is a chance that some of the enemies are bombs
 - o **Acquired as part of gameplay** – shoot one of these and you gain back a life (save yourself)
 - o **When used has an effect on the gameplay** – when you hit one, they explode along with a close circle of those around them (focus more on shooting the bombs instead of other enemies, so focus of gameplay is altered)
 - o **Associated Audio Effect** – electronic explosion sound
 - o **Visual Representation** – The enemy characters that are bombs partially flash throughout the game to denote that they’re the bomb enemies.
- **New Multiplayer Feature** – To change the challenge of the game
 - o If two people are playing instead of one, one player controls the maneuvering keys and one player controls the enter/fire/backspace keys. Since I modeled this game to be a bit jerky for key movement (to match the music and overall blocky setup of the game), it would be a fun challenge to try to work with a partner to survive for as long as possible. What good does it do to be a good shooter when you’re by yourself, when you could have just as much fun struggling with a teammate and making a ruckus to survive for less than five seconds (albeit these are often the games my friends and I enjoy more, though they’re that much harder because of the unpracticed teamwork aspect).

- I have the initial setup in place for the server – see the `_GlobalScripts GameObject` at the top of the Hierarchy. No Server ever connected or loaded, which is why there are the `Debug.LogError` messages in there since I was trying to debug possible setup issues. I'm still looking into fixing this for future.
- If there was more time I was also going to try to have it that every time your opponent kills a player, you would get another player on your screen (
- I was unable to fully get this feature functioning (I ran out of time because I was backed up from being sick; however, I do understand this is not an excuse and I've done as much as I could in the time allotted to make sure I still stay on track with this course).

Additional Features that were fixed from Part C to work properly and adjustments added (note there were other additional features in Part C as well – see the readme in that submission to learn more):

- You are now able to save your name along with the score you got (before you could only save score and sometimes it saved it improperly)
- There's a 2d text field at the top of the screen that signifies what key presses you can do on that current play screen (I realized I missed the 2D element from the part C assignment because I misread it while sick – adding this in to fill in for that missed feature (since the 3D rotating scoring system matches the rest of the game style, while using this to cover a bit more informative functionality that wasn't already there).
- Quit button that has a sad sound. Press enter to continue quitting, backspace to go back to title screen.
- Saving your name has highlighted lettering
- Fixed the score update so that when reset was called after the player died, didn't spirtz out and reset to 2 full lives like before.
- Fixed score saving since the new highscore would rewrite over incorrect entries in the highscore list.

NOTES ABOUT KEYPRESS EVENTS FOR EACH SCREEN:

Title/Home Screen:

Up/W – toggling up a button

Down/S – toggling down a button

Enter – Selecting an option (Play → Main Game, High Scores → High Scores Screen, Quit → Quit1)

Main Game:

Left/A – move left

Right/D – move right

Spacebar – shoot a bullet (you only have one, so it retracts the one currently shot if pressed again)

Enter – back to Title/Home Screen

1 – set difficulty mode for 3D effect to easy (camera doesn't move)

2 – set difficulty mode for 3D effect to medium (camera jerks left to right with music)

3 – set difficulty mode for 3D effect to hard (camera jerks left to right with music super quickly)

High Scores Screen:

Enter – back to Title/Home Screen

You Lose Screen:

Enter – High Scores Screen

You Win Screen:

Enter – High Scores Screen & enters name you've left the letters in along with adding your score to the board

Left/A – switches left between which letter of the three is currently active to be changed

Right/D – switches right between which letter of the three is currently active to be changed

Up/W – spins the highlighted letter up to the next character

Down/S – spins the highlighted letter down to the next character

Quit1:

Backspace – go back to Title/Home Screen

Enter – Try to quit again

Quit2:

Backspace – go back to Title/Home Screen

Enter – Closes the game