

# Projectile Blocker

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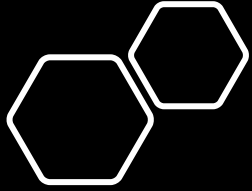
By Apinayan & Chi Ho

# Description

In this 2D game, the player's objective is to avoid being hit by projectiles until the time runs out. Projectiles will be sent towards the player from different directions which they will need to block. This will involve pressing the correct direction keys to block in whichever direction the projectile is coming from.

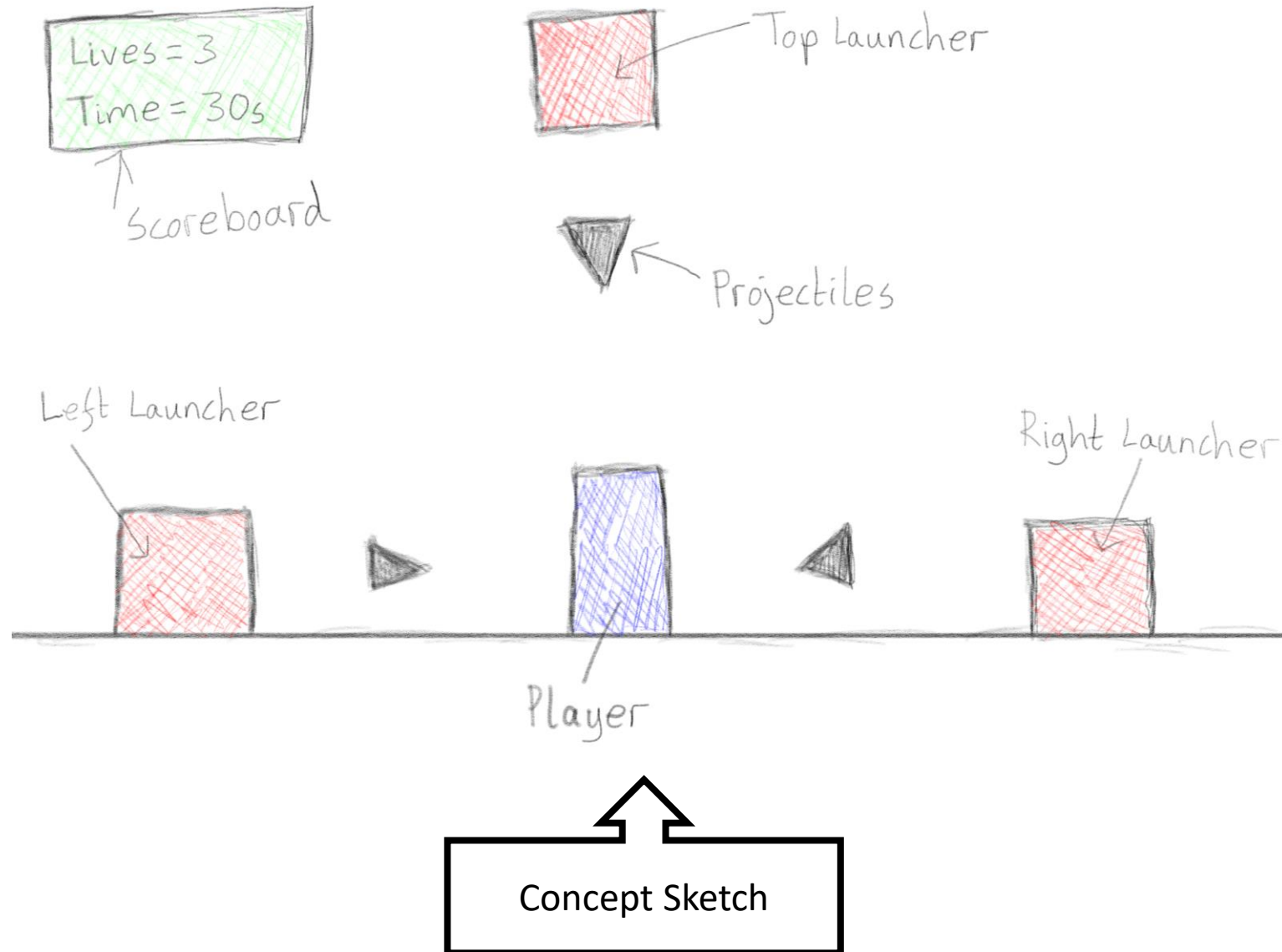
- IDE: Visual Studio Code
- Programming Language: Java
- Game Engine: JavaFX





# Main Features

- Projectiles will be launched towards the player from the left, right and above.
- The player will need to block the projectile before it hits them or they will lose a life.
- 3 Lives
- Countdown timer of 30 seconds



# Win & Lose

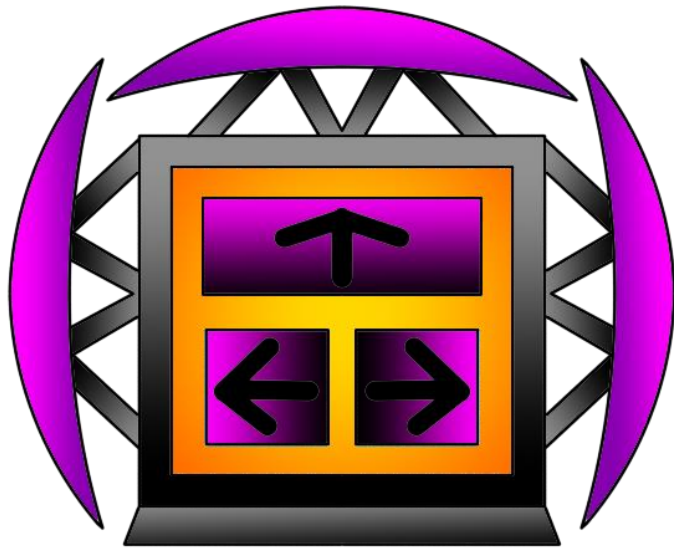
## Win

Blocking the projectiles and having at least 1 life left before the timer runs out.

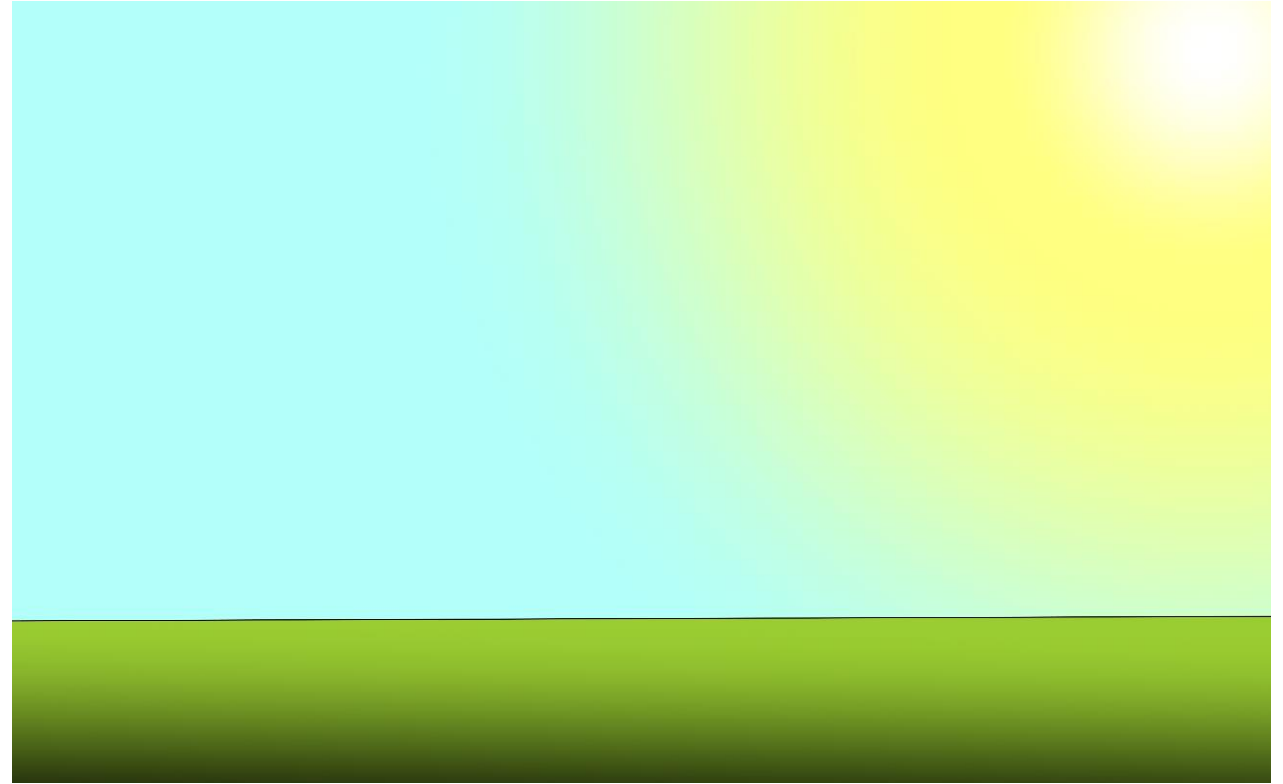
## Lose

Being hit by the projectiles and have no lives left. Timer will then stop.

# Game Assets (Player And Background)



Player

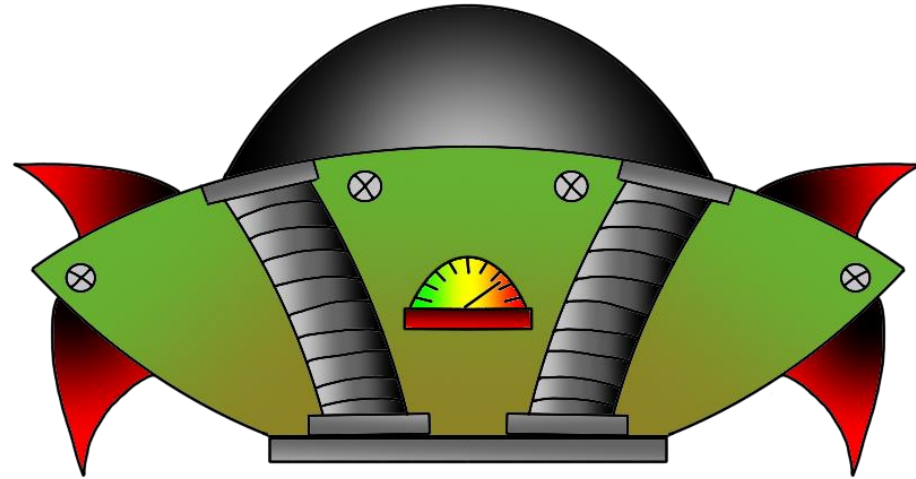
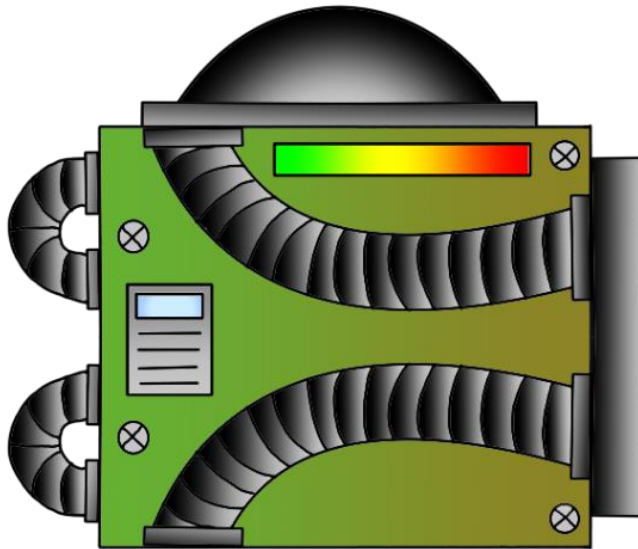


Background



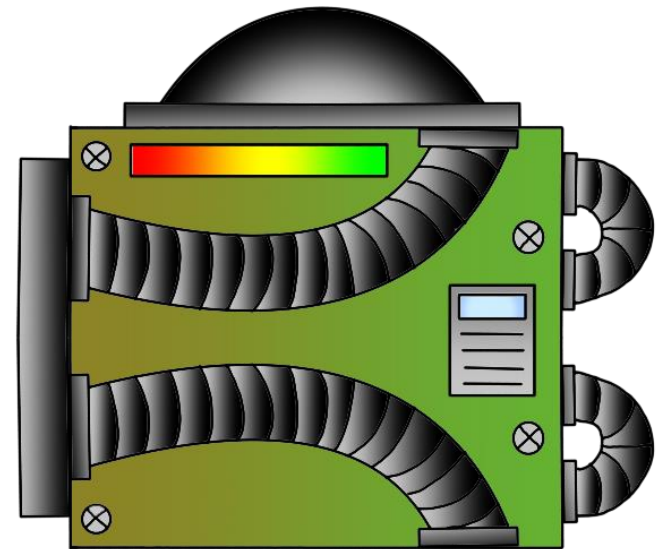
# Game Assets (Projectile Launchers)

Left Launcher



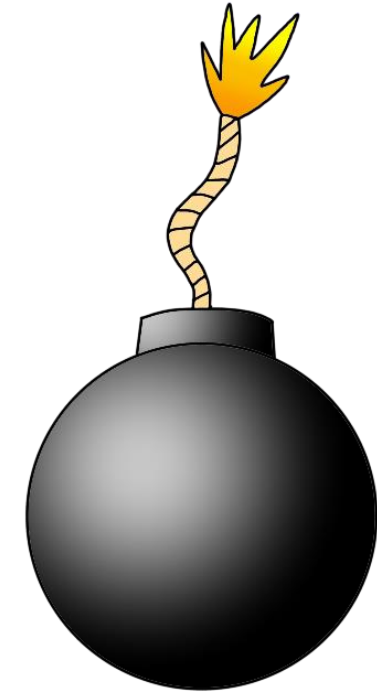
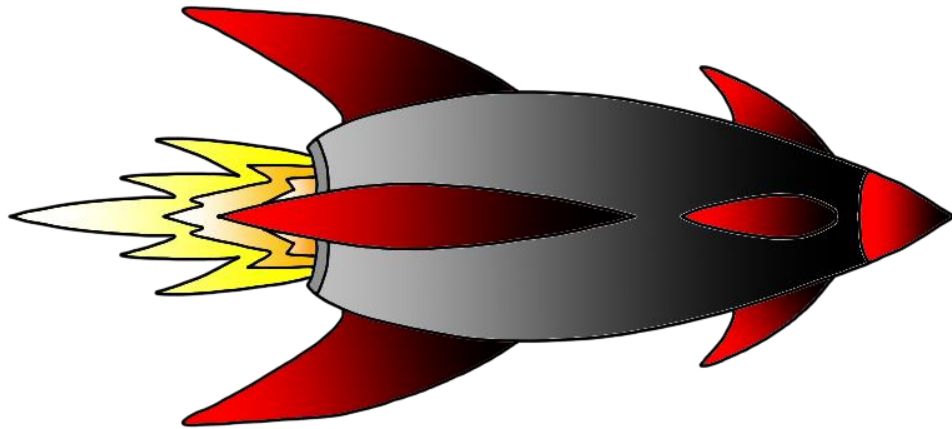
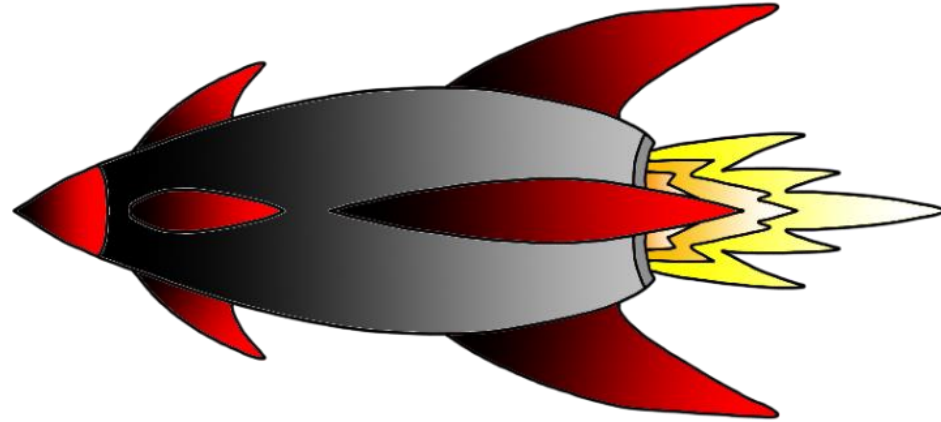
Top Launcher

Right Launcher



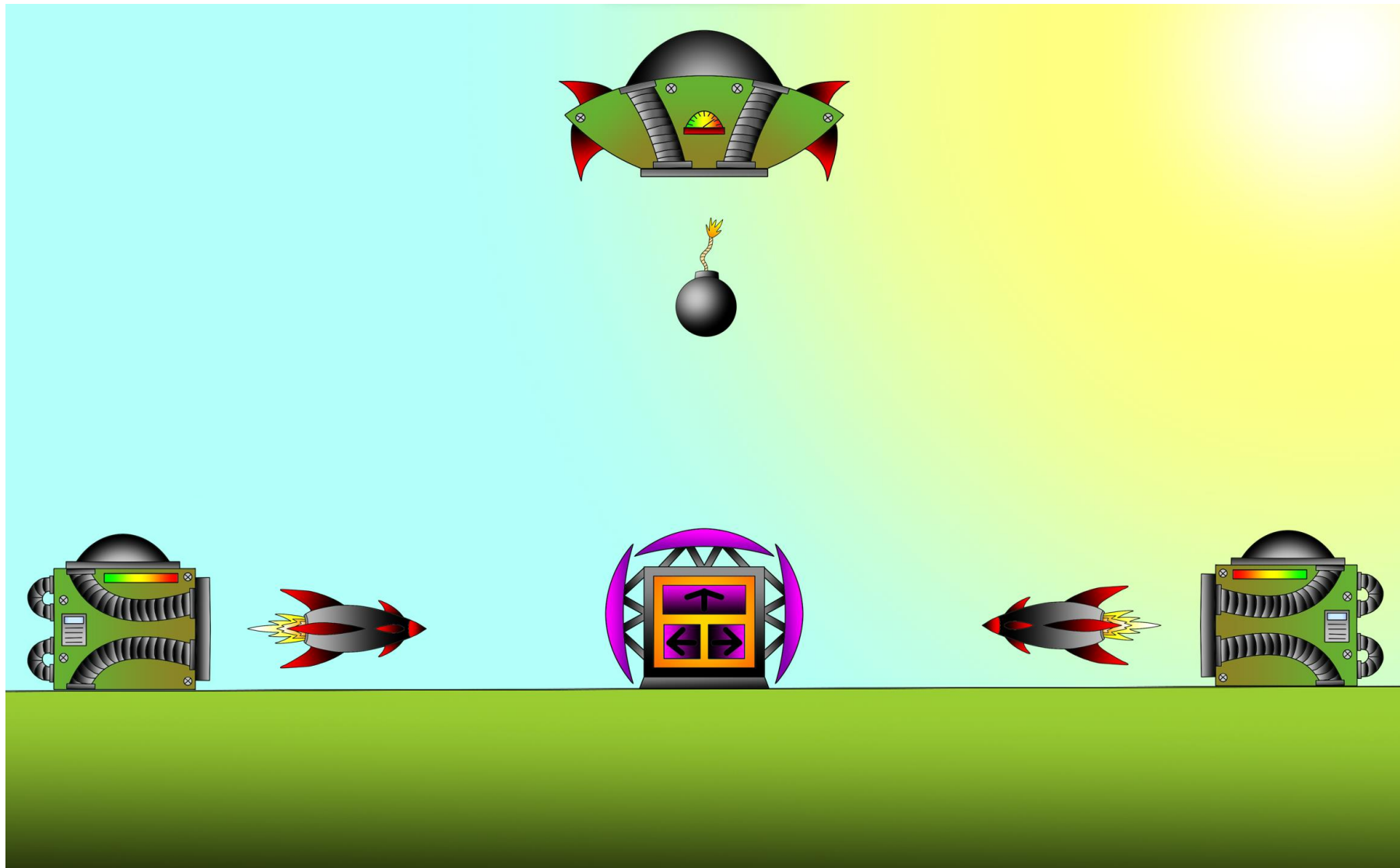
# Game Assets (Projectiles)

Left and Right  
Projectile



Top Projectile

# Game Assets (Complete Concept)





# Classes

- **Main Menu** – Creates a menu that allows you to open the game or close the game.
- **Player** – Contains the information of the player (lives, hitbox) and determines if the player is blocking and their direction
- **Game** – Creates the stage where the game will be played and all major functions for gameplay (collision checking, projectile creation, etc.)
- **Projectile** – Contains information on the projectile (speed, hitbox, direction)
- **End Screen** – Creates a menu at the end of the screen that can send you back to the main menu and tells you if you won or lost.

# Development

- During development we had a problem when inserting the different graphic assets into the game. The images would become distorted. We solved this problem by rescaling the game assets and changing the hitboxes of the objects to fit the aspect ratio of the images.
- Initially, when projectiles would collide with the player, the projectiles would not disappear immediately (it still lingered for some ticks), causing the player to lose all their lives. This was solved by altering the while loop this was happening in to remove the projectiles immediately.

# Testing Screenshots

Blocking Game

Start

Exit



Lives:3

Time Remaining: 30



**You win**

**You lose**

# Gameplay (Win)

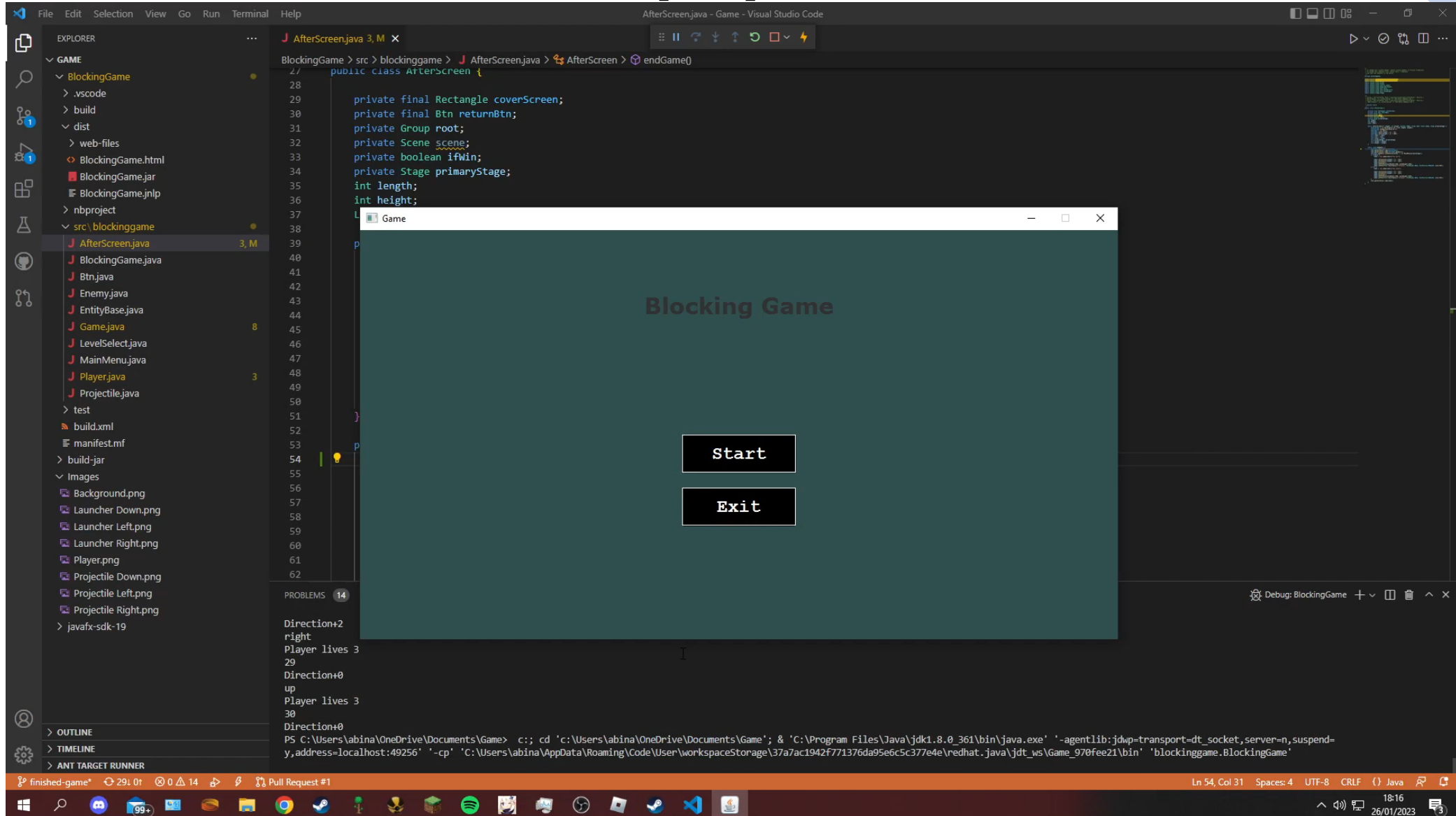
Visual Studio Code interface showing a Java project named "BlockingGame". The Explorer sidebar on the left displays the project structure, including files like "BlockingGame.html", "BlockingGame.jar", "BlockingGame.jnlp", and various Java source files. The main editor displays the "Game.java" file, which contains the following code:

```
1  /*
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose Tools | Templates
4  * and open the template in the editor.
5  */
6  package blockinggame;
7
8  import java.util.ArrayList;
9  import java.util.Random;
10 import javafx.animation.AnimationTimer;
11 import
12 import
13 import
14 import
15 import
16 import
17 import
18 import
19 import
20 import
21 import
22 import
23 import
24 import
25
26 /**
27 *
28 * @author
29 */
30 public
31
32 /**
33 put
34 /**
35 put
36 /**
```

The "Game" window is open in the foreground, displaying a dark green background with the title "Blocking Game". It features two buttons: "Start" and "Exit".

The bottom status bar shows "Debug: BlockingGame" and "Ln 1, Col 1".

# Gameplay (Lose)





# Evaluation



What went well:

- Functioning game
- Successfully integrated the game graphics

Lessons learned:

- Working as a team to come up with a game concept and creating the game
- “Don’t use NetBeans”

Improvements:

- Sound effects can be added to the game
- Visual cue/animations to signify that the player was blocking can be added