# **Game Balancing and Playtesting Documentation**

## **Overview**

To ensure our game provides both a challenging and enjoyable experience, we conducted extensive playtesting sessions. This document outlines the process we followed for playtesting, the feedback we received, and the subsequent changes we made to our game.

## **Playtesting Done**

We employed a multi-faceted approach to playtesting, which included:

* Crossplays: Engage in cross-play sessions on Wednesdays with people from other teams to observe game dynamics and identify any glaring issues.
* Family and Friends: Asked friends and family members to play the game, providing us with a diverse range of feedback from players of different skill levels.
* Informal Feedback: Solicited feedback from guest lecture informally to get quick and diverse opinions.

## **Feedback Received**

Through our playtesting sessions, we identified several areas for improvement:

* Auto Shooting: Keep holding the mouse to shoot can be improved by auto shooting.
  + “If the optimal way to play the game is to hold the mouse's right click button it might be more convenient for the user to continuously shoot rockets and then they can use the mouse to aim the rockets.”Deep Gill,
* Lighting Source: The lighting Source position should be fixed rather than user controlled.
  + “I would suggest that the changing lighting effect happens automatically, as I don't really see the reason for the user to control this aspect of the game. All in all, I enjoyed playing, great work!” Jezarah Ebel
* Hitbox Accuracy: Players noted inconsistencies with the hitbox of the green bullet against Blendy.
* Blendy's Movement: Players suggested increasing Blendy's movement speed for a more smooth gameplay experience.
* Shadow Mapping: The lack of shadow mapping was pointed out, which affected the game's visual depth and player's spatial awareness.
* Feedback on Hit: Players requested clearer feedback when enemies and Blendy are hit by bullets, including sound effects.
* Aiming Mechanism: The game lacked a specialized cursor for aiming and the default cursor is too small, making precision shots more challenging than necessary.
  + “We cannot see or tell which way the blender is rotating and facing as that functionality is not present but we can only tell the direction of the projectiles once we start shooting. This can be a bit confusing but adding a feature that will help us understand the direction will really make the game more user-friendly.” Shafquat ul Bari
* Direction Persistence: There was a lack of direction persistence in Blendy's animations, leading to visual inconsistencies during movement.
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* Reason for Hopping: Players were unclear about the purpose behind the hopping mechanic.
* Power up system:
  + “I am excited to see how you expand it further with the upgrade system. “Joshua Chew

## **Changes Made in Response**

In response to the feedback received, we made several key adjustments to improve the game experience:

* Make the lighting source unchangeable: We adjusted the direction and deleted the lighting source keyboard operation to fix the position of the light source.
* Auto Shooting: Holding the mouse click is unnecessary, so we made players use the mouse only for aiming and auto shooting.
* Blendy Velocity Increased: To address concerns about movement speed, we've increased Blendy's velocity, allowing for quicker navigation and dodging.
* Tighter Animations: We refined the game's animations for smoother transitions and more responsive controls.
* Direction Persistence Added: Blendy's animations now consistently reflect the direction of movement, enhancing visual coherence.
* Bullet Hit Feedback: We introduced audio feedback for both when Blendy and enemies are hit by bullets, improving the player's sense of impact.
* Specialized Aiming Cursor: A specialized cursor has been added for more precise aiming, addressing feedback regarding the difficulty of making accurate shots.
* Modification of Hopping Mechanic: The hopping mechanic was re-evaluated and adjusted to ensure it adds value to the gameplay experience rather than complicating it.
* Power Ups System: we have introduced 7 different power ups to make sure the game is more balanced and more interesting.