# Descriptive Document

## LaserBound: Path of Illumination

## Team Members

| **Name** | **Email** | **GitHub Username** |
| --- | --- | --- |
| Boyu Du | boyudu@usc.edu | BoyuDu2024 |
| Mishal Patel | patelmis@usc.edu | MishalPatel977 |
| Pathik Anilkumar Viramgama | viramgam@usc.edu | PathikViramgama |

## Logline

A 3D-platformer game where you push mirrors to reflect lasers to trigger mechanisms that open the path to the door of victory in pitch darkness.

## Genre Research

Research done on three genre titles that are a 3D platformer:

1. The Talos Principle
2. Portal
3. Inside

### Tropes:

When we focused on the games on the list, we found the following three things they had in common: interaction with the environment, visual cues, and self-pacing.

1. Interacting with the Environment: Players need to manipulate objects in the environment to solve puzzles.

* The Talos Principle: players use tools such as jammers, connectors, and boxes to manipulate energy beams.
* Portal: players create portals to travel through space.
* Inside: players move objects and manipulate mechanisms to overcome obstacles.

1. Visual Cues Visual cues are guiding the player in solving puzzles and conveying the storyline.

* The Talos Principle: symbolic: light-based cues guide players to clues.
* In Portal: test chambers reveal hidden messages and visual signs that hint at the backstory.
* Inside: lights, shadows, and subtle environmental details to guide players and inspire emotional resonance.

1. Self-Paced: There is no time limit, allowing players to explore and solve puzzles at their own pace.

* The Talos Principle: The game has no time pressure and players are free to explore areas in an open environment.
* Portal: There is no time limit and players can try different approaches over and over again.
* Inside: There is no time limit, so players can feel the tension and mystery created by the game.

### Twist:

Our game introduces a unique twist by combining laser reflection and a flashlight-based lighting system. Unlike traditional platformers that emphasize movement and jumping, players in our game must strategically place mirrors to reflect lasers and activate mechanisms. Additionally, players must navigate through dark environments using a flashlight, which restricts visibility and adds to the game's difficulty.

### How absence of light is innovative for a 3D platformer:

In most 3D platformers, the core mechanics usually focus on movement, such as jumping and avoiding obstacles. Our game expands on this by requiring the player to not only avoid hazards, but also trigger mechanisms by placing mirrors to reflect lasers at the right locations and angles. This increases the difficulty of spatial planning and precise operation.

At the same time, we introduced a flashlight system to further enhance the challenge and immersion of the game. Players holding a flashlight can only illuminate a small area in front of them, limiting their field of vision, which forces them to solve puzzles and navigate under limited lighting conditions and using their memory to remember what was where. This lighting system increases the difficulty of the game and further enhances its playability.

## Prototype description

*Laserbound: Path of Illumination* is a 3D-platformer that challenges players to solve puzzles using a laser reflection mechanic. The player's objective is to navigate through levels by strategically positioning mirrors to reflect lasers and trigger mechanisms, while also avoiding hazards. A flashlight system limits visibility, requiring players to carefully plan their movements and interactions with the environment to reach the goal.

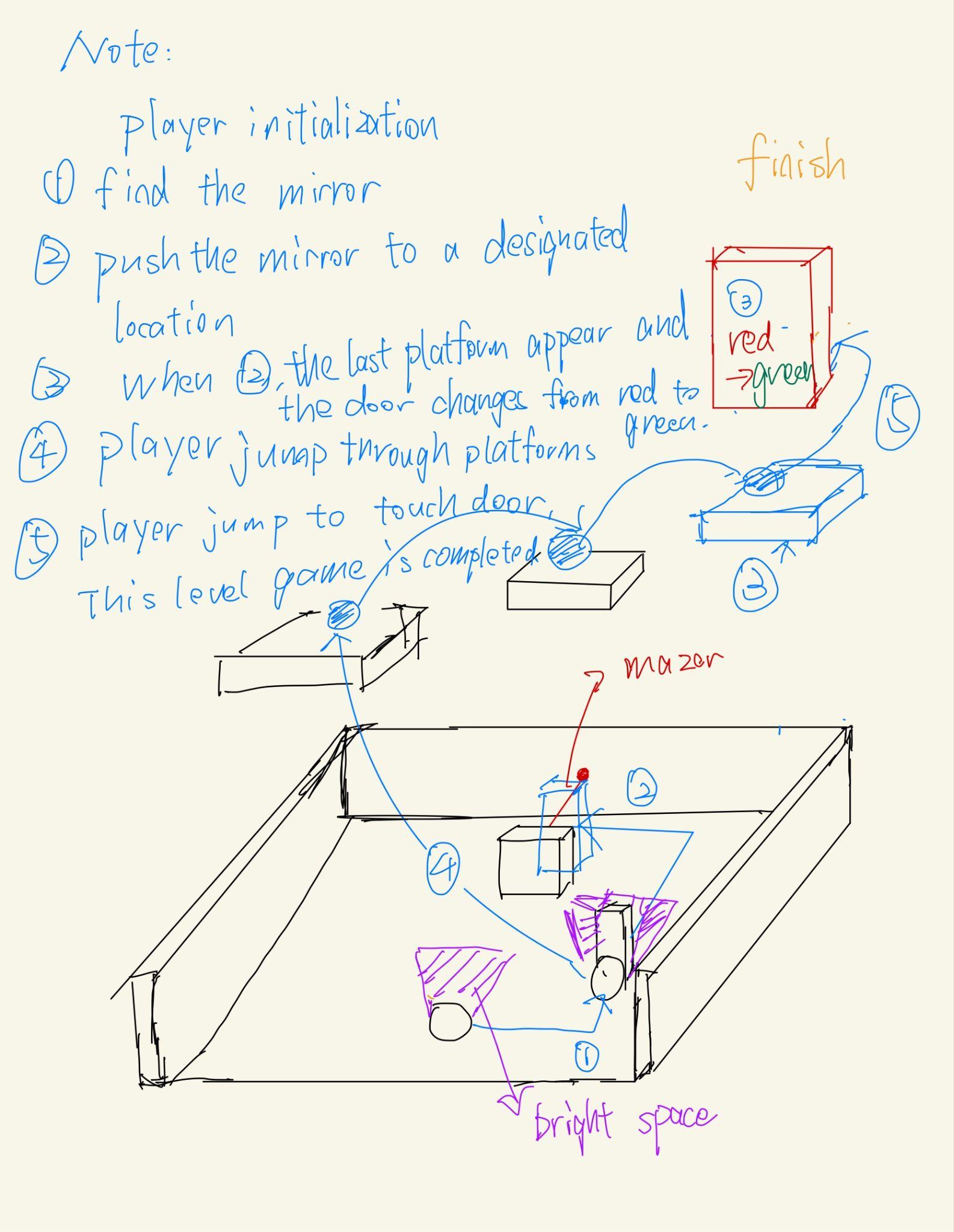
## GitHub Repository

<https://github.com/CSCI-526/paired-prototype-f24-tuesday-laserbound>

## Individual Contributions

| Boyu Du | *Map design, documentation, environment building and alpha testing with debugging corner cases* |
| --- | --- |
| Mishal Patel | *UI elements, Player movement and jump with platform height adjustment and visual appearance of the game,platform and door scripts* |
| Pathik Anilkumar Viramgama | *UI elements, Lighting and Lasers and Flashlight Scripts, version control and github* |

## Diagram/Sketch

****