## Concept/Theme:

The game I aim to create is a dungeon-themed platformer that integrates top-down environmental puzzles called "Puzzle Wiz". Set in a mystical world, players assume the role of a wizard embarking on an epic adventure. The game combines traditional platformer mechanics—running, ranged attacks, jumping, double jumping, and dodging—with a unique twist: upon entering puzzle rooms scattered around the level, the perspective shifts to a top-down view. This blend aims to create a dynamic gameplay experience where players navigate platforming challenges while also being able to interact with and complete in-depth puzzles.

The reason for combining these two styles into one was for a few reasons, one of which was to give the player the additional challenge of having to navigate through the level to find the rooms while fighting enemies. When it comes to the puzzles, changing perspective would allow for better environmental puzzles for the player to interact with.

Core Mechanic:

The core mechanic of the game would be the puzzle rooms themselves. The exit to the level will be blocked, only opened by completing each puzzle room in the area. The general idea is that they are solved by actions/movements made by the player.

The puzzle I will be implementing will be a Light Reflection style puzzle, in which the player needs to direct beams of light to hit a specific endpoint prism.
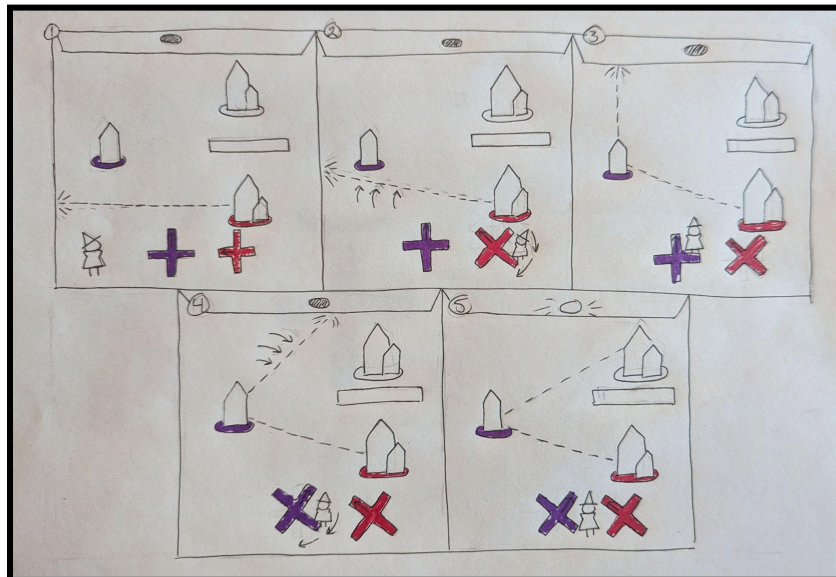
A few things I need to take into consideration about this mechanic are:

1. Room Design and Assets

● When creating the room itself, each piece (walls/obstacles, start and end prisms, normal prisms) will have multiple versions or editable parts in order to be able to reuse the assets across multiple levels.

● Editable parts would be what direction the prism would be facing when first entering the level, and the direction the walls would be facing based on where they're needed (vertical or horizontal).

● Each prism will be in a base position (in regards to the way it's facing) based on the puzzle itself, so it depends on how the entire room looks and who creates the level. However, they shouldn't be in a position that automatically completes the puzzle based on one single turn. (For example, the only one you would turn is the first prism, and the other ones are in the correct position; which is what we *don't* want).

● Easier levels should have very similar, if not the same, solution. However, for harder levels, there should try to be multiple ways a player could solve the puzzle.
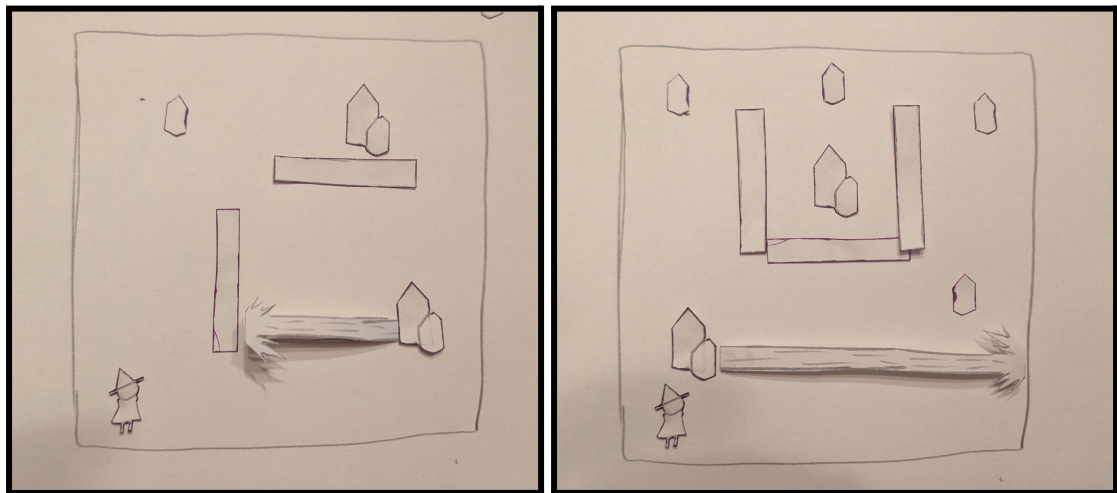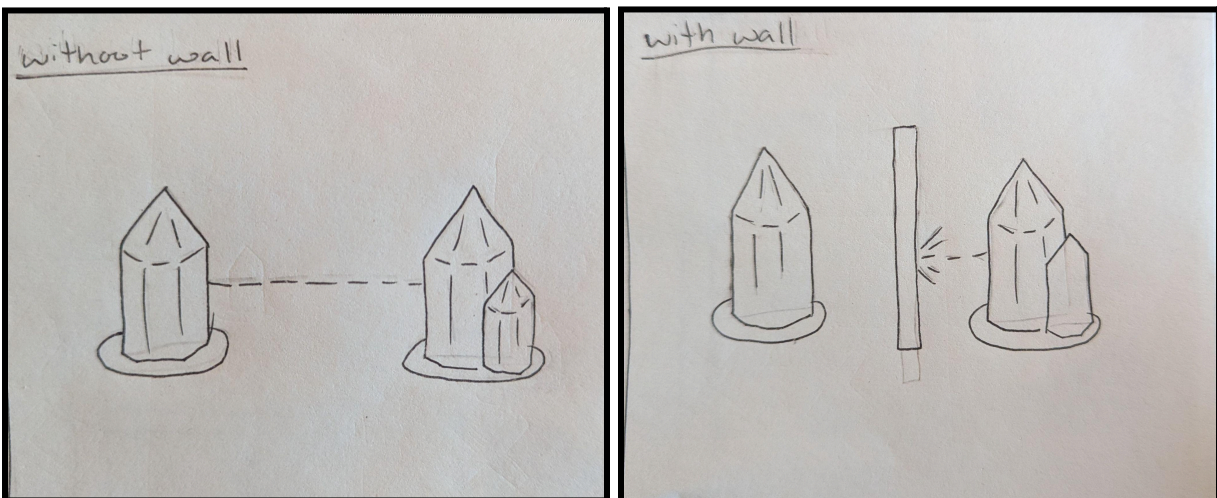

2. Prism Mechanics

● Prisms are scattered throughout the room, and the player must point them a certain way to reflect the light in the "correct" direction. Each prism will have some indication* of which direction it is pointing in, aside from the first one, which will have the beam already pointed out of it.

● All of the prisms scattered around the room will be a certain color based on the general level's color scheme, mainly for aesthetic purposes. The start and end prisms, however, will look larger and darker than the others, giving the player more direction in how to complete the puzzle.

● Upon the beam hitting another prism, the beam diverges and shoots off in the direction the new prism is facing. There should be no delay in the beam reflecting off; the prism should reflect the beam in a certain direction instantly.

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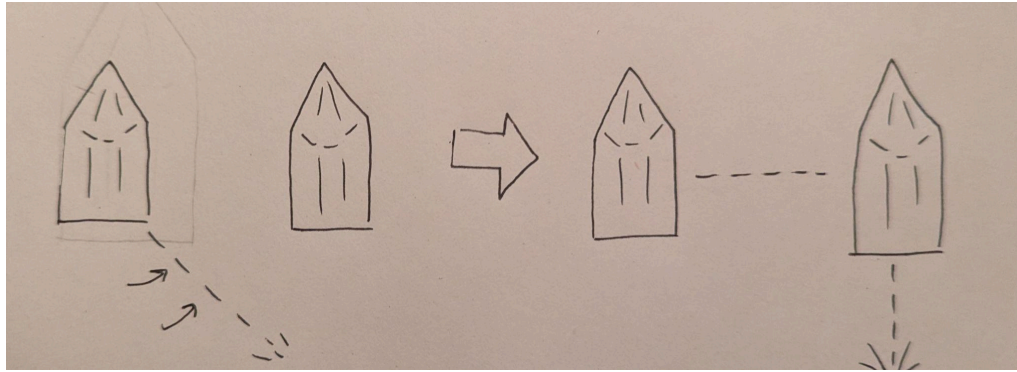
3. Obstacles and Challenges

- There will be "obstacles" throughout the room to make the solutions more complex. For example (like the diagram below), there could be walls between two of the crystals, making it so you can't shortcut to the easiest solution for the puzzle.
- The beam ends when it hits a wall, and won't travel past it. This includes the boundaries of the room, and any wall placed throughout the room to pose as an additional challenge.

### 4. Wheel Interaction and Mechanics

- There will be "wheels" below the puzzle for each prism. (More '+' shaped rather than a wheel to allow the player to move it easier, but for the sake of simplicity I will refer to them as wheels). * The wheels will be color coded. Each of the prisms will have a colored base that matches with its corresponding wheel. To indicate where the prism is pointed, the wheel will have an arrow on one of the pegs showing what direction it should be facing, allowing the player to see where everything is pointed even before the beam is reflecting through the prism.

- The wheel is turned by collision with the player. Depending on what side of each peg is collided with, that is the direction the wheel will turn, which affects the prisms it is associated with.
- When the player rotates the wheel, the prism rotates in tandem.
- When interacting with the wheel, the player's movement speed decreases by half. This lets the player make finer adjustments when pointing the prisms and also simulate an object being pushed a little better.
- When not pushing the wheel, it should stay in the last position it was in when being pushed, and move at the same speed as the player while being pushed.
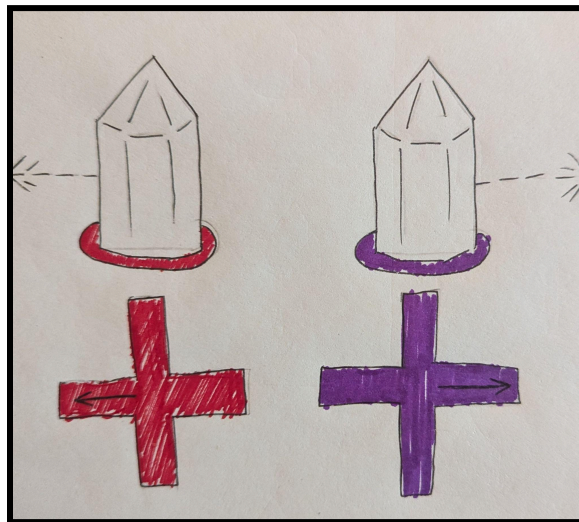
5. Game Completion Mechanics
- Upon successfully pointing the beam to the end prism, the game will register that the puzzle is completed.
- The game will keep track of whether or not all of the puzzles were completed, shown to the player by a light lighting up both inside the room and above the door outside the room. That way the player can get confirmation when doing the puzzle that they've done it, and be a little more efficient for the player while looking for the remaining puzzle rooms to complete.
- Once all of the puzzles are completed, the roadblock that was previously in the way of the exit will disappear, allowing for the player to continue to the next level.
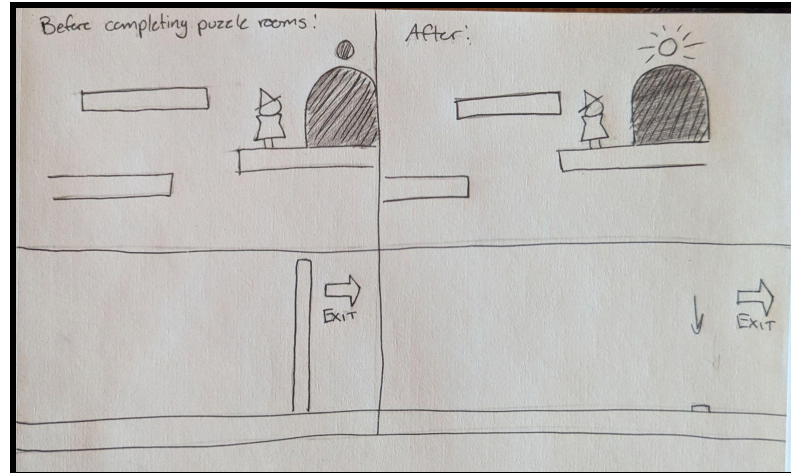
Target Audience:

The game is designed for fans of platformers and puzzle games who enjoy a moderate challenge. If I were to get more specific, those that enjoyed the environmental puzzle in games like Undertale or other games like that. I aim to target a broad audience, including both casual gamers and enthusiasts who appreciate a balance between platforming action and puzzle-solving without overwhelming difficulty.

Visual Design:

The game will feature pixel art with a vibrant, yet muted color palette that varies across levels to enhance thematic diversity. The magical ambiance will be conveyed through detailed environmental elements, animated enemies, and character sprites, reflecting the wizard's mystical abilities and the enchanted setting.

Scope:

For my demo, my main focus will be to get the puzzle rooms working correctly. Then I will attach it to the platformer. My hope is to have at least two levels with 1-3 puzzle rooms each. The puzzles will vary in complexity as you progress, with my intent to demonstrate a range of challenges. I hope to create puzzles that are easily translatable based on how difficult I need them to be across levels.

If I have time and feel ambitious, I might try my hand at creating a transition from "2D" to "3D" in a sense when the player enters and exits the puzzle room. For an example of how this might look, the game "Toodee and Topdee" has a good example of how I might want this to look. However, this would be the last possible thing I would end up doing *only* if I had ample time to experiment with it.

Fall 2024 - Intro to Game Design @ SUNY New Paltz
* Taylor Ascarino
* [Trello Board] (https://trello.com/b/BmuAuS76/game-design-final-project)
* [Proposal] (ProjectProposal.png)