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Members: Bailey Sostek, Drew Tisdelle

My Last Lightline *Version 2.0*

"Find the crystal. Light the world."



Summary

My Last Lightline is an interactive puzzle game where the player manipulates mirrors to direct a laser light source from point A, an emitter, to point B, the goal. In this puzzle game you must lead a character through a temple in hopes to restore light to the world. The player will travel down the emitter beam and follow the exact line of light through the puzzle. Once the level has loaded the character will start moving down the beam of light, which forces the player to direct the light correctly in a quick manner. If the player does not direct the light correctly and directs it into an obstacle, wall, or anything besides the goal, the character will not reach their goal the player will be forced to restart the game. This game is a puzzle because there is a set of rules which must always be followed, in order for the puzzle to be solved by the player being directed into the goal. There will be a level of replayability to this game in that we will implement a system which randomly generates every level of the game after level 8. Levels 1-8 are tutorials to introduce the player to the game mechanics. These levels will also have an element of random to them in the color of the laser emitters. This game will deal with lighting the world, in the earlier levels, the grid of tiles on the screen will have a black overlay inhibiting the player from seeing the mirrors and other elements in the level. The only way to discover these elements is by using the few elements you can see, to direct the laser light into the darkness, revealing more game elements. By solving the levels from 8 on, as the character escapes the temple, they will be getting closer and closer to the surface of the world. To depict this the background of the webpage will fade from black to a blue color as the player leads the character closer to the surface. On the final level, there will be a large crystal object with a goal attached to it. Upon the emitter being directed into this crystal, the game will end and a light source will be emitted from the crystal, slowly increasing in size until the entire grid and background of the webpage are the same color.

Features

- Mirrors that reflect a light beam
- Walls that block light beams

- Mixers that allow light beams to be crossed together
- Camera movement between levels
- Changing light sizes
- Time pressure to finish levels
- 8 tutorial levels to teach the player
- Light enhancers
- Status line story as the game progresses

Summary Updated (Version 1.0)

My Last Lightline is an interactive puzzle game where the player manipulates mirrors to direct a laser light source from point A, an emitter, to point B, the goal. In this puzzle game you must lead a character through a temple in hopes to restore light to the world. Once the level has loaded, a timer will start counting down the remaining time to solve the puzzle, which forces the player to direct the light correctly in a quick manner. If the player does not direct the light correctly in time, the player will have to restart the game from the beginning if they have not cleared the tutorial levels or from just after the tutorial levels if they have already been cleared. Once the light reaches the correct path, the player character will travel along it to reach the next level. This game is a puzzle because there is a set of rules which must always be followed, in order for the puzzle to be solved by the player being directed into the goal. There will be a level of replayability to this game in that we will implement a system which randomly generates every level of the game after level 6. Levels 1-6 are tutorials to introduce the player to the game mechanics. These levels will also have an element of randomness to them in the color of the laser emitters. The game will deal with lighting the world, in the earlier levels, the grid of tiles on the screen will have a black overlay inhibiting the player from seeing the mirrors and other elements in the level. The only way to discover these elements is by using the few elements you can see, to direct the laser light into the darkness, revealing more game elements. By solving the levels from 6 on, as the character escapes the temple, they will be getting closer and closer to the surface of the world. To depict this

the background of the webpage will fade from black to a blue color as the player leads the character closer to the surface. On the final level, there will be a large crystal object with a goal attached to it. Upon the emitter being directed into this crystal, the game will end and a light source will be emitted from the crystal, slowly increasing in size until the entire grid and background of the webpage are the same color.

Changed Features

- Timer to add time pressure for completion
- Player character isn't constantly moving
- 6 tutorial levels to teach the player

Reasons for Changes (Version 1.0)

In this version of *My Last Lightline* two major changes have been made as the game has moved to the prototype stage. The first is that the number of tutorial levels has been decreased from 8 to 6. This is because the puzzles in the game are made challenging by the darkness hides the different elements of the game from the player in the stages after the tutorial ones and, without the challenge, players would quickly become bored by the tutorial levels and not continue with the game. Therefore it was decided that the number of tutorial levels be decreased in order to challenge the player earlier in the game and keep them interested. The second major change is that there is no longer a player character constantly moving along the ray of light to the goal in order to put pressure on the player with this characteristic of the game being replaced with a timer. The reason for this change is that there are still many parts of the game to work out and the character moving along the ray of light would not be possible to create within the timeframe that we have remaining. In addition the character moving along the ray of light could also potentially limit the amount of variation that could be added to each puzzle by adding further restrictions to them. It's because of these two reasons that it was decided a timer would be a better fit for the game as it would keep the player pressured to solve the puzzles quickly without the need for a constantly moving character.

Summary Updated (Version 1.5)

My Last Lightline is an interactive puzzle game where the player manipulates mirrors to direct a laser light source from point A, an emitter, to point B, the goal. In this puzzle game you must lead a character, not seen on screen, through a temple in hopes to restore light to the world. Once the level has loaded, a short line of text will appear at the top of the screen giving the player some insight to the story and a timer will start counting down the remaining time to solve the puzzle, which forces the player to direct the light correctly in a quick manner. If the player does not direct the light correctly in time, the player will have to restart the level that they are currently on. Once the light reaches the correct path, the game will transition to the next level. This game is a puzzle because there is a set of rules which must always be followed, in order for the puzzle to be solved by the player being directed into the goal. There will be a level of replayability to this game in that we created 15 levels with constantly increasing difficulty, some of which have multiple solutions. Levels 1-5 are tutorials to introduce the player to the game mechanics. The game will deal with lighting the world, in the earlier levels, the grid of tiles on the screen and the background around the grid will be a bright blue, but as the levels progress the tiles will become darker as the player moves further into the temple. By solving the levels from 5 on, as the character escapes the temple, they will be getting closer and closer to the surface of the world. To depict this the background of the webpage will fade from black to a blue color as the player leads the character closer to the surface. On the final screen the player will see that the world is completely bright blue once again and will be greeted with the character proclaiming his victory.

Changed Features

- Timer fully implemented to add time pressure for completion
- No player character shown on screen
- 5 tutorial levels to teach the player
- There are 15 levels instead of the planned 25
- The mirrors don't become hidden in darkness in later levels

- Walls are no longer in the game
- Background music and laser humming has been added
- Sound effects for when the laser hits a mirror has been added
- There are full lines of dialogue for each level

Reasons for Changes (Version 1.5)

In this version of *My Last Lightline* many changes were made to what was originally planned for the game when it was in the prototype stage. One the main changes was to how the levels in the game work. At first it was planned that there would be 25 levels, with the first 6 being tutorial levels while the rest were randomly generated. However, due to time constraints, we changed it so that there are now only 15 levels made from scratch with the first 5 being the tutorial levels. The reason there are only 5 tutorial levels is because, due to the smaller number of levels, we thought it better to increase the difficulty more quickly rather than give players only a couple difficult levels. Other than time constraints, it was decided that there would be no randomly generated levels because the quality of the levels turned out much higher when they were not randomly generated. Another major change made to the game is that the mirrors are not hidden in the later levels to add difficulty to them. This is because, after having users try to complete the dark levels, it was found that they became increasingly frustrated and would give up after a few tries since the level would reset after 40 seconds. It's because of this that we removed the darkness as it made the puzzles less frustrating for the user. It is for that same reason that we made the failure mechanic much more lenient, forcing the player to restart only the current level they are on rather than the entire game if the timer is to run out as that previous mechanic caused many players to become frustrated enough to stop playing. A minor change is that the player character will not appear on screen at any point. This is because the character, in the end, served as more of a decorative animation in the game rather than a game element and was thus, scrapped from being visible in the game as it would add an unnecessary amount of time to the project. Finally, background music and sound effects were added

to the game to make it more aesthetically pleasing since, before this version, the game was utterly silent other than some clicking noises.

Summary Updated (Version 2.0)

My Last Lightline is an interactive puzzle game where the player manipulates mirrors to direct a laser light source from point A, an emitter, to point B, the goal. In this puzzle game you must lead a character, not seen on screen, through a temple in hopes to restore light to the world. Once the level has loaded, a short line of text will appear at the top of the screen giving the player some insight to the story and a timer will start counting down the remaining time to solve the puzzle, which forces the player to direct the light correctly in a quick manner. The player is not allowed to manipulate the puzzle for the first 6 seconds that a level is loaded for. This gives the player time to read the story, and strategize how they will solve the puzzle. If the player does not direct the light correctly in time, the player will have to restart the level that they are currently on. Once the light reaches the correct path, the game will fade all background tiles to the color of the laser that was directed into the emitter slowly, and then back to a black color. The scene will then change to the next level. This game is a puzzle because there is a set of rules which must always be followed, in order for the puzzle to be solved. There will be a level of replayability to this game in that we created 15 levels with constantly increasing difficulty, some of which have multiple solutions. Levels 1-5 are tutorials to introduce the player to the game mechanics. The game will deal with lighting the world, in the earlier levels, the grid of tiles on the screen and the background around the grid will be a bright blue, but as the levels progress the tiles will become darker as the player moves further into the temple. By solving the levels from 5 on, as the character escapes the temple, they will be getting closer and closer to the surface of the world. To depict this the background of the webpage will fade from black to a blue color as the player leads the character closer to the surface. On the final screen the player will see that the world is completely bright blue and there will be a large crystal on the screen. Once the player directs light into this crystal, everything on the page will fade to the color of the laser that was just directed into the crystal and you will win the game.

Changed Features

- Additional 5 levels.
- Levels do not switch instantly upon completion.
- 6 second mandatory introduction at the start of each level.
- Giant crystal at the end of the game, which lights the world.
- Updated music and sounds

Reasons for Changes (Version 2.0)

In this version of *My Last Lightline* many changes were made to what was originally planned for the game when it was in the prototype stage. The largest change that was made to the game was the addition of the transitional period between levels. This gives the player some time to appreciate their work with a nice animation that overtakes the screen and gives a sense of accomplishment. This change was made in lieu of a camera transition. Due to time constraints we were not able to implement a camera system into the game, so this animation provides a similar break time, and a nice visual reward for the player. Another change that was made was the initial 6 seconds for reading the text that is displayed at the top of the level. This was added to force players to read the story, which most players skipped over in the previous version. Because players were not looking at the status line, they did not notice that there was a timer at the top of the level and would often complain when the level they were on reset quickly. This directs the players attention to the top of the level and shows them the timer.

Target Audience

My Last Lightline is a game that is targeted towards young adults who are looking for a challenging, time and maze based puzzle game that is also able to provide a short, interesting story throughout the game.

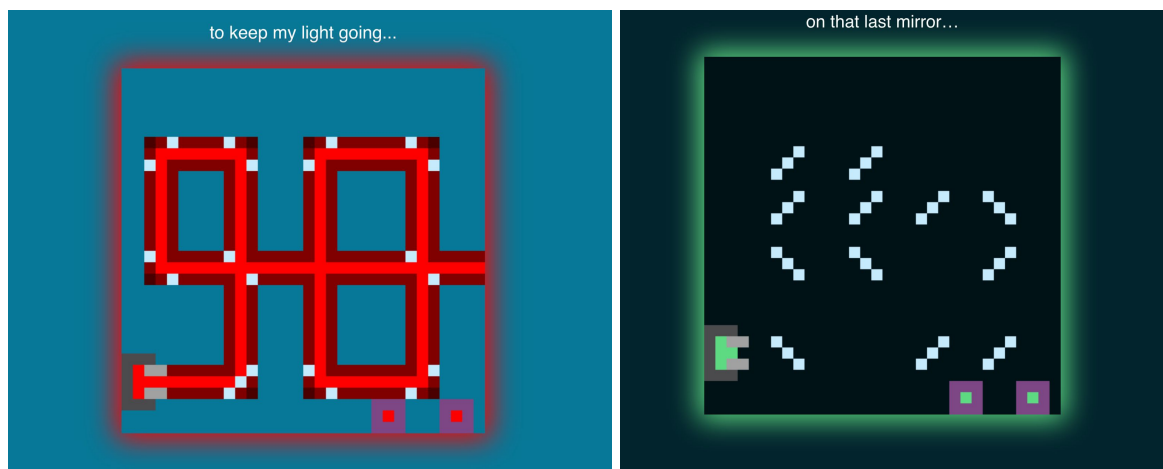
Experience Goal

When playing *My Last Lightline*, the players are intended to experience feelings of accomplishment, anxiety, and curiosity as they solve the puzzles and progress

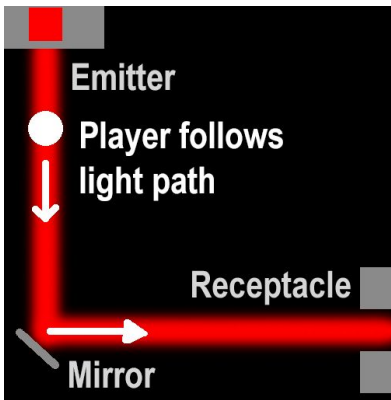
through the game. The feeling of accomplishment is created when the player successfully makes it through the level they are in and is there to keep the player happy as well as entertained. The feeling of anxiety is meant to be experienced through the character that is constantly moving along the beam of light as the player will have to try to find the next part of the path in each maze before the character hits a wall or dead-end mirror. This emotion is one that is important to invoke because it keeps the player alert and focused on the game. Finally, the feeling of curiosity will be created through both the lines of text that will appear in the status line at the beginning of each level that provide the player with the game's story and the various elements that get introduced later in the game, such as the light becoming smaller and new sources of light becoming available. This is to assist in keeping the player interested in completing the entire game.

Updated Experience Goal (Version 1.0)

The only update to the experience goal in this version of *My Last Lightline* is to how the feeling of anxiety will be created for the player. In this prototype version of the game, the feeling of anxiety is meant to be experienced through the timer that is constantly counting down the remaining time that player has left to finish the puzzle. This emotion is one that is important to invoke because it keeps the player alert and focused on the game.



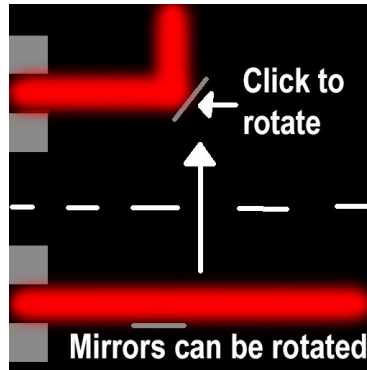
Play Description



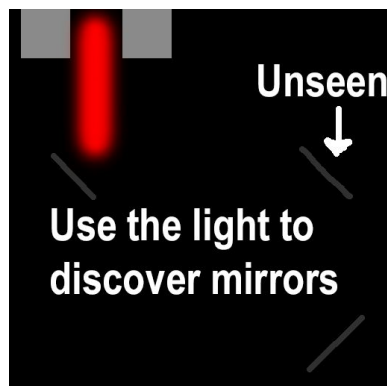
When the player begins the game they will find that they are in a well lit room with mirrors reflecting a ray of light and a line of text will provide the player with a simple instruction as the game starts. The player then directs a light source to a receptacle as the character within the ray of light begins to move along it. The player will then find as they rotate the mirrors that light can be bounced off of them.



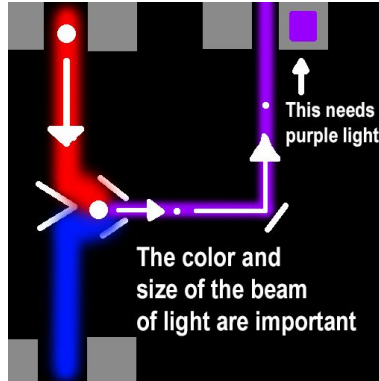
As the player continues to play, they will see that the character will follow the direct line that the light follows. If the character leaves the screen as depicted above, the game will reset and the player will find that they need to restart from the beginning. As the player progresses through the first 8 levels, they will also realize that the lighting is getting darker and darker in the puzzles, making it more and more difficult to see and solve puzzles.



The player will realize as they play that they are responsible for rotating mirrors to create a safe path for the light source. Passing the character from receptacle to receptacle throughout the levels, eventually reaching the last receptacle at which point the player will see the ray of light travel into a crystal along with the character, lighting up the game world and ending the game.



As the player goes the more difficult levels of the game they will find that game elements will not be visible as the grid is a completely dark room that the character is traversing. In order to discover game elements, the player must use mirrors and existing game elements to direct the light source around the grid to light up additional game elements.



On some levels, the player will also find that receptacles will require the player to be traveling on a certain color of light, or certain size light beam. The player will need to direct different color emitters into mixers to form the new color light.

Updated Play Description (Version 1.0)

When the player begins the game they will find that they are in a well lit room with mirrors reflecting a ray of light and a line of text will provide the player with a simple instruction as the game starts. The player then directs a light source to a receptacle in order to reach the next level. The player will find that, as they rotate the mirrors, the light can be bounced off of them. When the ray of light reaches the receptacle, the player will also find that the character in the game will appear to ride along the path that the player created with the light, taking the player to the next level.

As the player continues through the game, they will see that there is a timer counting down the time they have left to complete the current level. If the timer reaches zero, the game will reset and the player will find that they need to restart from the beginning. As the player progresses through the first 6 levels, they will also realize that the lighting is getting darker and darker in the puzzles, making it more and more difficult to see and solve puzzles.

The player will quickly realize in the game that they are responsible for rotating mirrors to create a safe path for the light source. Passing the ray of light from receptacle to receptacle throughout the levels, eventually reaching the last receptacle at which

point the player will see the ray of light travel into a crystal along with the character, lighting up the game world and ending the game.

As the player goes the more difficult levels of the game they will find that game elements will not be visible as the grid is a completely dark room that the character is traversing. In order to discover game elements, the player must use mirrors and existing game elements to direct the light source around the grid to light up additional game elements.

On some levels, the player will also find that receptacles will require the player to reach the receptacle with a ray of light that is a certain color or size. The player will need to direct different color emitters into mixers to form the new color light.

Updated Play Description (Version 1.5)

When the player begins the game they will find that they are in a well lit room with mirrors reflecting a ray of light and a line of text will provide the player with a simple instruction as the game starts. The player then directs a light source to a receptacle in order to reach the next level. The player will find that, as they rotate the mirrors, the light can be bounced off of them. When the ray of light reaches the receptacle.

As the player continues through the game, they will see that there is a timer counting down the time they have left to completely the current level. If the timer reaches zero, the level will reset and the player will find that they need to restart from the beginning of the level. As the player progresses through the first 6 levels, they will also realize that the background is getting darker and darker in the puzzles, creating an eerie feeling combine with the music and story.

The player will quickly realize in the game that they are responsible for rotating mirrors to create a safe path for the light source. Passing the ray of light from receptacle to receptacle throughout the levels, eventually reaching the last receptacle at which point the player will see the ray of light travel into a crystal. This is the win condition for the game. The story talks about how it is the player's responsibility to bring light back to the world after something terrible happened.

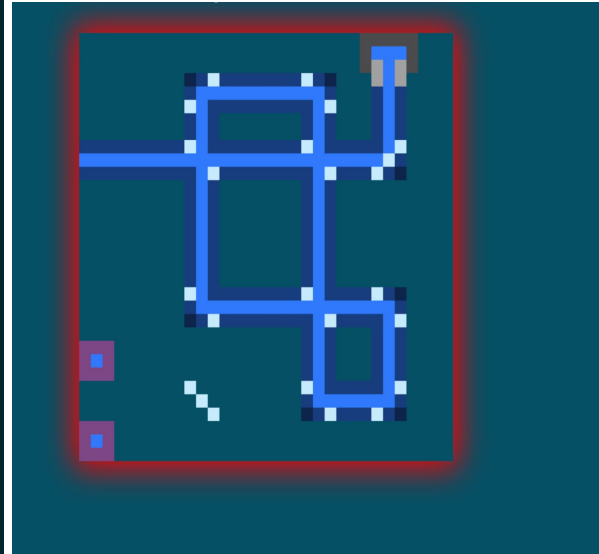
Updated Play Description (Version 2.0)

When the player begins the game they will find that they are in a well lit room with mirrors reflecting a ray of light and a line of text will provide the player with a simple instruction as the game starts. The player then directs a light source to a receptacle in order to reach the next level. The player will find that, as they rotate the mirrors, the light can be bounced off of them. When the ray of light reaches the receptacle the level transition animation is initiated and the level proceeds.

As the player continues through the game, they will see that there is a timer counting down the time they have left to complete the current level. If the timer reaches zero, the level will reset and the player will find that they need to restart from the beginning of the level. As the player progresses through the first 6 levels, they will also realize that the background is getting darker and darker in the puzzles, creating an eerie feeling combine with the music and story.

The player will quickly realize in the game that they are responsible for rotating mirrors to create a safe path for the light source. Passing the ray of light from receptacle to receptacle throughout the levels, eventually reaching the last receptacle at which point the player will see the ray of light travel into a crystal. This is the win condition for the game. The story talks about how it is the player's responsibility to bring light back to the world after something terrible happened.

As the player goes the more difficult levels of the game they will find that game elements will not always need to be used, and there are many paths that have no solution to intentionally stump the player. Also additional game elements such as walls will be introduced.



Critique

- Make mirrors easier to click.
- Find bug that crashes game on timers being removed.
- Fix the bug on level 5 that prevents the mirrors from working.
- Move timer to top of level to indicate amount of time left.
- Update Perlenspiel.
- Added text to the top of each level to tell the story.
- Migrated from multiple timers, to single tick method based timer.

Form / Survey

My Last Lightline reflection.

* Required

What level did you get to. *

Choose ▾

On a scale of 1(easy) to 10(hard) how would you rate the difficulty of the game. *

Choose ▾

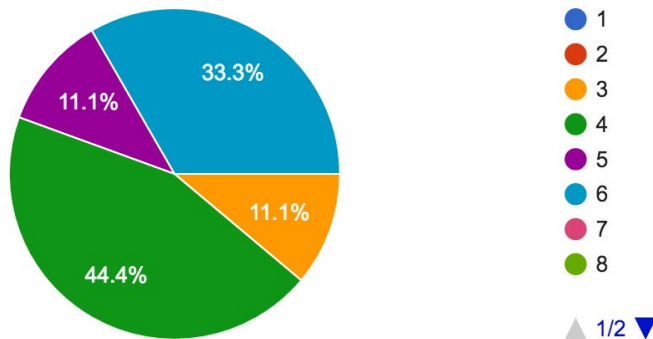
What are the rules of the game? *

Your answer

How did you find the rules? *

Your answer

On a scale of 1(easy) to 10(hard) how would you rate the difficulty of the game.
(9 responses)



Any additional comments? (8 responses)

Maybe allow clicking in the entire 3x3 of the mirror to turn it, since I was clicking on the outside part of the mirror instead of the center and was confused to why it wasn't turning.

Add a bird girl that I can carry and throw

Cool idea, keep up the work!

Possibly allow player to see their solution and progress to the next level on their own time, rather than shifting to new level automatically.

Make the mirrors easier to turn.

Bugs, bugs.

I was able to cause an error in one of the levels where the debugger said it could not read a particular attribute. I believe it was due to causing the laser to get caught in a loop that was not connected to the initial emitter

I'd recommend letting the player have to be less precise to click the mirrors because right now you have to click the center bead, and that was throwing me off a bit. Also, I think there may be something wrong with your time function because I got the mirrors wrong on one of the levels (I think it was like 3. It was red and had a mirror right in front of the goal) and it broke the game.

Project Plan

Drew:

- Learn how to better use classes in Javascript (Friday, April 1st)
- Create first 8 tutorial level designs (Sunday, April 3rd)
- Begin designing background music (Sunday, April 3rd)
- Create cover image (Sunday, April 3rd)
- Create code for the character in the light beam (Monday, April 4th)
- Import the background music into the game (Wednesday, April 6th)
- Create the background light changing feature (Thursday, April 7th)
- Work to create the random level generator (Friday, April 8th)
- Add in sound effects for every interaction in the game (Friday, April 8th)
- Create character moving along ray of light animation (Friday, April 8th)

- Work to polish the game (Sunday, April 10th)
- Create ending scene (Sunday, April 10th)

Bailey:

- Learn how to better use classes in Javascript (Friday, April 1st)
- Create camera system for levels (Sunday, April 3rd)
- Begin creating random level generator formula (Monday, April 4th)
- Begin creating light reflection mechanic (Monday, April 4th)
- Fix bug with infinite loops (Wednesday, April 6th)
- Fix bug with mirrors on level 5 not reflecting light correctly (Wednesday, April 6th)
- Work on level generation (Thursday, April 7th)
- Polish level generation (Saturday, April 9th)