

SHOOTER MOLE

Level design document

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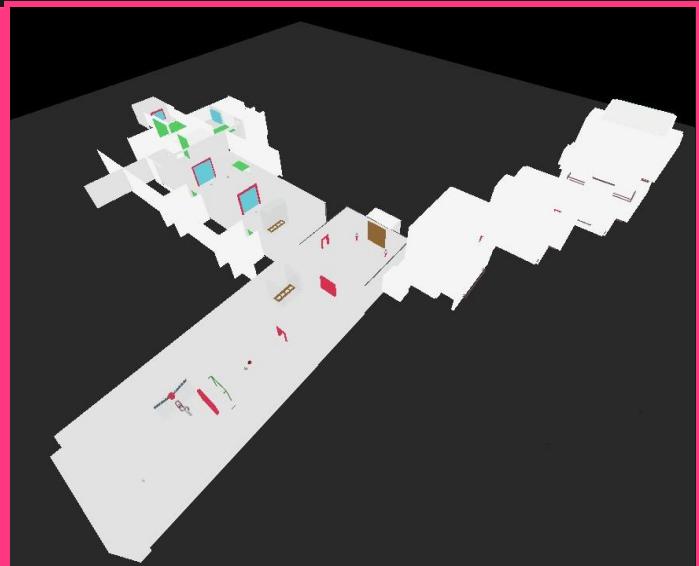
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[AA2] Assessment: 2 – Subject final map

Level Design



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Introduction

Shooter Mole is a FPS puzzle level designed to put our knowledge of Level Design into practice. It is designed to test the player's solving skills as well as their FPS aiming skills.

References selected

The main reference of the level is the arcade game called Whac-A-Mole, in which the player has to hit different moles, which are hidden, when they come to the surface. As a team we found this reference interesting as it tested the reaction speed of the player in a very funny way.



Reference - Whac-A-Mole arcade machine

In Whac-A-Mole it doesn't matter which mole you hit, you simply have to hit and score. As a team we thought of evolving this concept, by means of the colours. In this level, all the moles

have their own characteristic color, and each color performs a different action, so the player associates colors with specific actions.

Finally, as a secondary reference and at the same time aesthetic, we have been inspired by Mirror's Edge. A game developed by DICE, launched on the console market in 2008. We have been inspired by their use of colors because in this game, using the contrast of them, they guide the player through the different levels.



Reference - In-game screenshot of *Mirror's edge*

Map Summary and gameplay explanation

Core pillars

Shooter Mole has three Core Pillars: Shooting skill, puzzle & colors and platforming.

This level could be found in a first-person game where puzzles are solved by shooting, but in this case, the targets are moles popping out of the ground, and the player have to use his skill to hunt them.

Shooting skill

- Player skill is required to shoot the moles.
- The player must shoot the moles before they return to the ground.
- The player will need to have reaction speed as the moles will not always come out from the same hole.

Puzzle & colors

- The puzzles will separate the player from the end of the level.
- The player will have to match and become familiar with the colours of the different props to solve the puzzles.

Platforming

- The puzzles are oriented to the movement of platforms, in different ways, the player will have to refine the use of these platforms, to solve the puzzle and reach the end of the level.

Main gameplay proposal

The main purpose of the gameplay is solving the puzzles that are divided into rooms, and to get out of the level by using the door of the hub.

The player must become familiar with the different colours of mole, in order to reach the end of each area and finally exit the level through the main door.

Map summary

The map is composed of four large zones. Each zone will have its function on the player.

Tutorial zone

This zone consists of three rooms through which the player will be introduced to the mechanics of shooting the moles in order to trigger events on the map.

In the first room the player will start without the gun, so he will have to press the red button (with the E key) in the room, to eliminate the chained mole (because they are always jumping) in order to open the door, also red, that leads to the next room of the tutorial. Our intention with this room is for the player to understand that by eliminating moles, events happen.

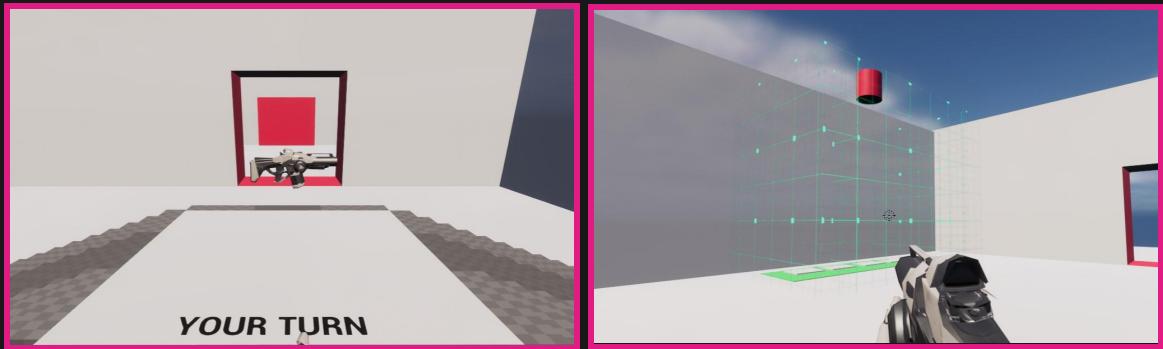


Tutorial - First room

In this second room, the player will find his weapon on the pedestal in the middle of the room, next to a sign telling him that IT'S YOUR TURN. This will make the player understand that the weapon is important in the level. Upon picking up the weapon, he will advance to the next room as the door will be open *.

In this last room the player will first be introduced to the "molehills", which are the spawners for the moles. This molehill will contain a jumping mole that when eliminated by the player (being the only way with his weapon) will open the door which will conclude the tutorial.

*If the player decides to go through the weapon room without taking the weapon, they will not be able to open the last door of the tutorial and will have to go back for the weapon.



Tutorial - Second & Third room

Hub or resting area

This is the player's resting area, where he can observe his surroundings quietly. The rest area also serves as a hub, as it is the player's link to the other two large areas of the level.

The areas that the player can access from the central hub have the same difficulty, so it makes no difference which direction the player chooses first, as with the knowledge gained in the tutorial he should be able to complete both areas without any problem.

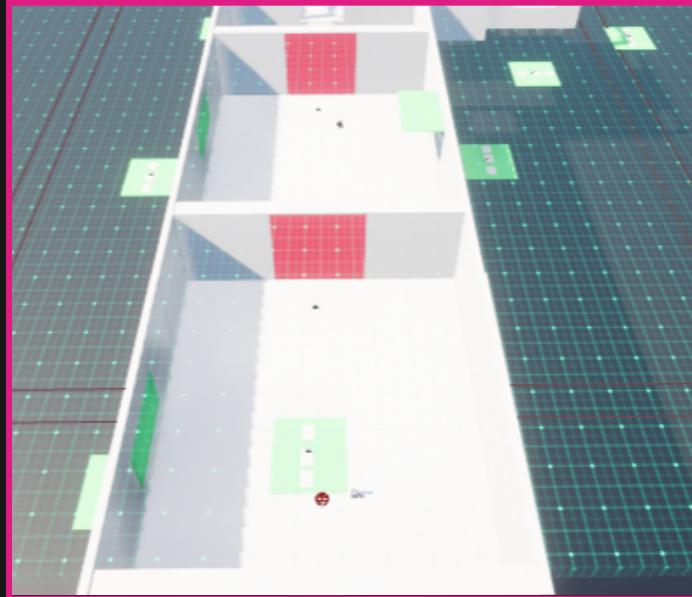
It is worth noting that in the hub you will find the golden exit door of the level, which can only be opened when the golden moles have been hunted. As soon as the player passes through this door, the player will be able to exit the level and finish the level.

Gates & doors zone

The doors & gates zone will present the player an evolution of the mechanics taught in the tutorial. The player will have to overcome three new rooms. The first two rooms as a teaching and presentation, and the last one as a challenge.

In the first room, the player will be introduced to the mole that activates the gates. This room introduces the player to the fact that there may be another colour of mole, with a different function to the color he has seen in the tutorial. There will be a mole in the middle of the room, but this mole will not open the door, but the gate. This time, through the gate the player will shoot a mole that will open the door.

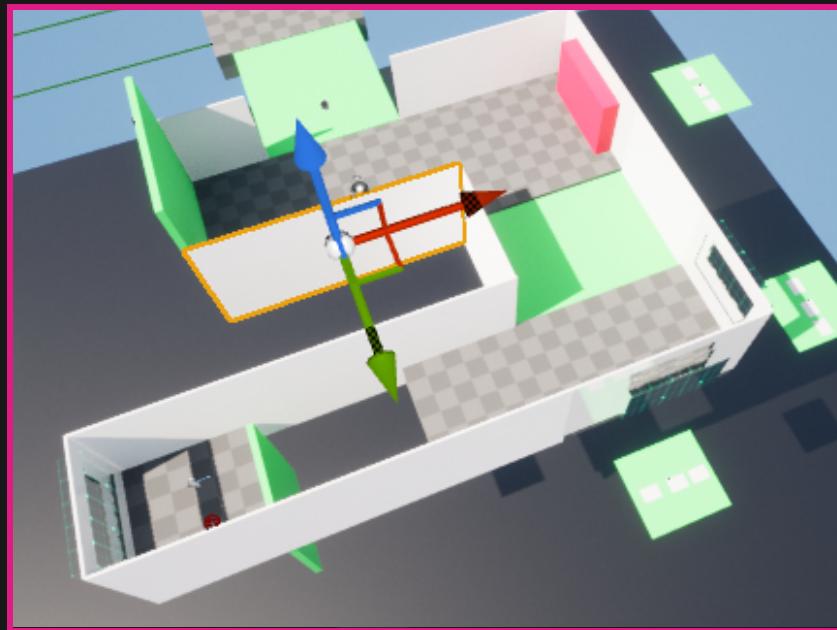
Once the player reaches this second room, he will again see a door next to two gates (one open and one closed). In the open gate the player will see a green mole, which when activated will change the state of both gates, showing the player that there is simultaneity. When the player approaches the new gate, he will discover the mole that will open the central door of the room, he will find another molehill, which will be protected by a platform, which will open the final door of this room. We will consider this room as an evolution and at the same time expansion of the previous room, since we add a second gate and at the same time we show the player the simultaneity.



Gates & Doors - First and second rooms top view

Finally in this area, we have the challenge room, in which the player must move between the platforms of the room without falling into the void. This can be achieved thanks to the fact that the room is full of molehills that will rotate the different platforms in the room, allowing or blocking the player's progress. With this room we aim to create expansion of the door mechanics as well as the gate mechanics, in a not too convoluted way, as the room will contain several gates and several doors.

Once through this challenge room, the player will find the golden mole in this part of the level. Once he hunts him, he will be teleported to the hub and this area will be over.



Gates & Doors - Challenge Room Top View without dress

Platform zone

The platforms zone will present two new types of colors to the player. Three rooms have been designed and implemented for this purpose.

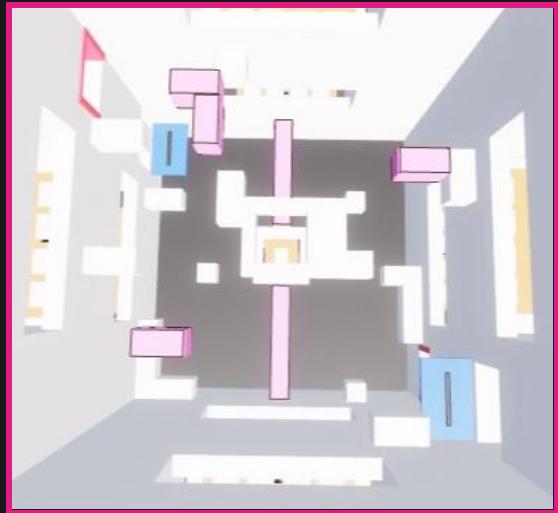
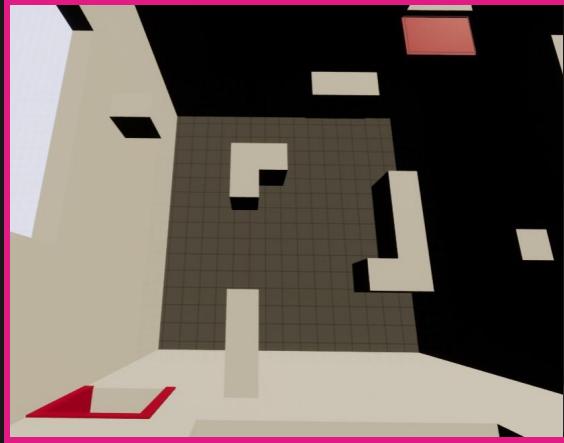
The first room, as a teaching room, shows the player the horizontal movement of platforms with inertia. These platforms will move in a specific direction until they hit an obstacle. The player simply has to hunt the mole in the room and can cross to the next room.



Platforms - First room

In the next room you will encounter an evolution of the mechanics presented above. This room will contain a maze of obstacles which the player must avoid while riding the platform. Depending on which mole he shoots at (there will be one in each direction within the room) he will advance until he hits an obstacle. If the player manages to reach the end of the room, he will enter the challenge room of this area.

In this last room, the player will find the last color to be presented, the vertically moving platforms. These platforms are a variation of the doors the player has seen in the tutorial, but this time, they do not move horizontally, they move vertically. The platforms will block the player, but this time the player is able to move these objects (unlike in the previous room) by shooting their corresponding mole. Once he has passed this room, he will go up to the top floor of this room and by doing the same route again, but from the top, he will be able to hunt the golden mole in this zone.



Platforms - Second & challenge rooms

Goals of the map

The main objective of the map is to escape the level by going through the golden door of the hub having mastered the mechanics related to each color.

The main extrinsic motivation of the level is the player's feeling of having a good aim and feeling that he has been able to hit the moving targets that have been proposed to him throughout the level.

On the other hand, as an intrinsic motivation we can highlight the feeling that the player has been able to understand the behavior of each color and thus be able to complete the two main areas and escape from the level. So, thanks to completing the puzzles, he has been able to reach the end of the level, and therefore, the adventure.

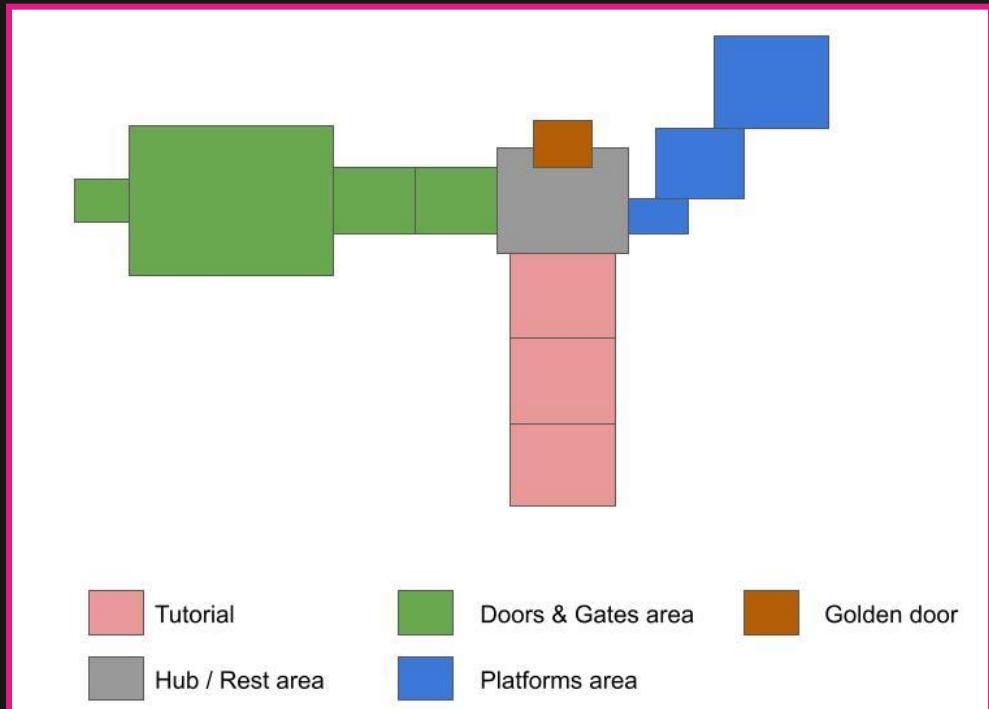


Gym - All related colors of Shooter Mole

We think that the player will be able to quickly understand that each color is related to a different mechanic, so we have made sure that each tutorial room explains in a concise and direct way how the color works. We also believe that with the introduction of the hub, the player will be able to clearly see where they need to go at all times. We also think about the contrast between the white walls around all the maps and the colors of each mechanic. This contrast can help the player to focus on the puzzles.

We also think that the use of the golden moles is intuitive as this color cannot be seen at any time, except when you complete the areas and at the exit door of the level.

Top down map



This is the top down map of Shooter Mole. As defined above, the map is made up of four major zones (if we include the tutorial).

The way to play this map is simple, and we wanted to let the player choose in which order to complete the level. That is to say, once the tutorial is completed, the player is free to choose which zone to complete first and which one to complete next. In this way we create a certain sense of freedom for the player.

To avoid the feeling of loss of the player, we will use a color to guide him at all times, without telling him exactly how. For this we use the color red. We will border and paint the entrances and exits of the rooms with this color, so that the player knows at all times what the current objective is.



Graph - Difficulty

The level is designed so that when the player enters a zone, he/she completes it to the end, as the rooms teach the player how to use the mechanics, combining evolutions and expansions of the mechanics themselves.

When the player has completed all the zones, he will be able to access the golden door, and this will be the end of the level.

Shooter Mole contains several different mechanics separated by color, which are carried out when the different moles of the respective color are hunted. In this table you can see the relationship between colors and mechanics.

Color Details						
Name	Pink	Dark blue	Green	Turquoise	Gold	Red
Mechanic	Vertical platforms	Inertia platforms	Gates	Doors	Final objective	Guidable objects

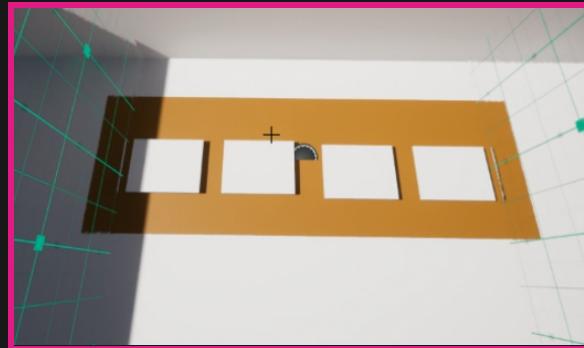
Graph - Relation between colors and mechanics

As I mentioned earlier, the map is divided into four major zones, each with different mechanics. In the case of the challenge zones we can find the use of several mechanics at the same time, therefore, as a team we have created a table showing where each mechanic appears.

Mechanics appearance s	Vertical platforms	Inertia platforms	Gates	Doors	Final objective	Guidable objects
Doors & Gates			✓	✓	✓	✓
Platforms	✓	✓			✓	✓
Hub					✓	✓

Graph - Relation between rooms and mechanics

It should be noted that an extra color is used, which is brown. This color is used simply to indicate to the player that he is facing a molehill. This color is not very important as they are not always visible, but we think it is necessary to comment on it.

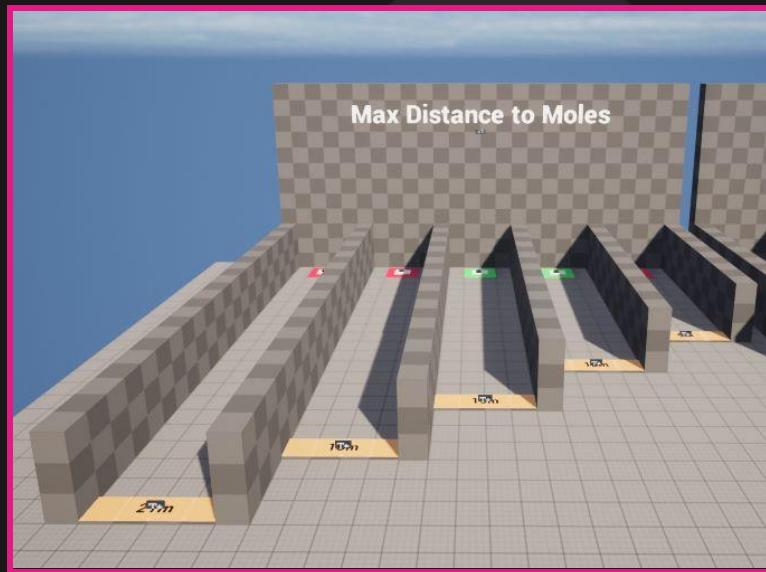


Extra - Molehill with his color

Metrics

Metrics in video games are used to ensure that the game feels rewarding, helping to balance the size of the maps and create a comfortable experience for the player. In this case, we utilized various metrics to achieve this goal. We considered distances for spawners, heights of windows, movements of platforms, sizes of doors and windows, as well as the dimensions of bridges.

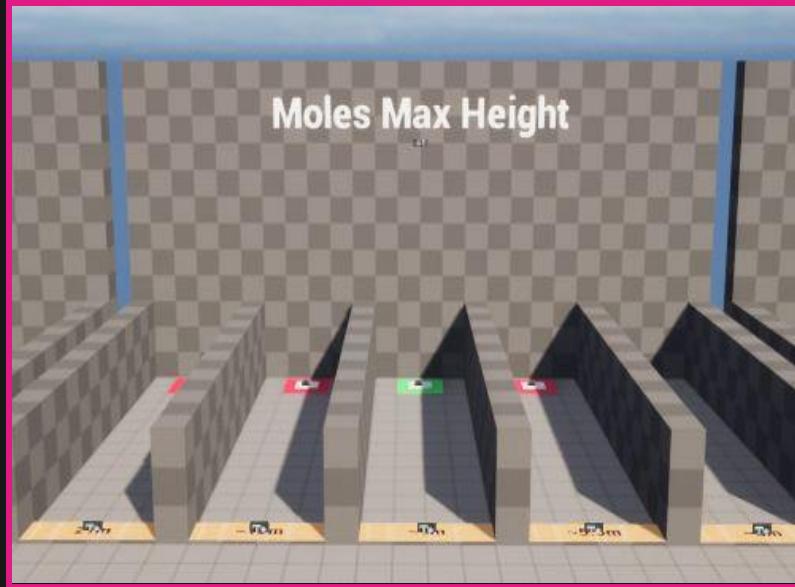
Similarly, we utilized a scene called a "gym" to define sizes and test how these variations work and feel comfortable.



Gym - Differents distances between the player and the spawn

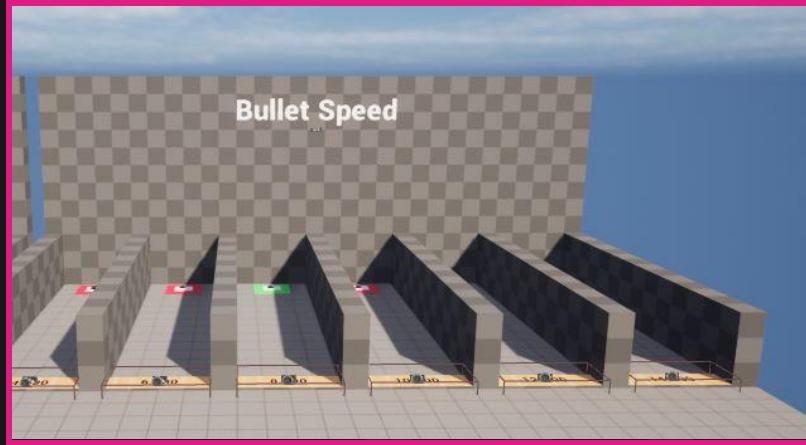
Different distance measures were used between the player and the mole spawner, as seen in the previous image. We tested distances ranging from 5 to 20 meters, but ultimately found that the most comfortable distance for shooting was 15 meters. This measure strikes a balance between being challenging enough without being too difficult or too easy. It feels convenient for players.

In addition to that, we used the distance measures to help us space out the spawners for the use of windows and movable platforms. We also incorporated demonstrations and tutorials to allow the player to learn the mechanics before facing a challenge.



Gym - Differents distances of height of the mole

In the next part of the gym, we measured the different heights of the mole when it pops up from the spawner. We aimed to find a height that is not too low, as it would make it difficult for the player to react, nor too high, as it would result in slower gameplay that may not be as enjoyable. We tested heights ranging from 4 to 14 meters and found that the most comfortable height was 8 meters. This height allowed us to determine the window sizes and distances based on the height at which the moles appear, ensuring that the player can comfortably shoot at them.



Gym - Different speed of bullet

This section of the gym helps us measure the bullet speed to ensure that there is minimal bullet drop and that shots towards the moles are more direct. We measured speeds ranging from 4 m/s to 14 m/s, but when differentiating these speeds, it became apparent that bullets with maximum and minimum speeds felt uncomfortable. They were either too fast or too slow to provide a satisfying shooting experience towards the mole. Ultimately, the winning speed was 8 m/s. This speed struck the right balance for enjoyable and accurate shooting at the mole.



Gym - Firsts simulations of windows and distances for the player

Here, we tested the initial shooting simulations through windows, including their size, height, and covers to ensure that the player wouldn't fall but still have a clear view of the mole.



Gym - Differents sizes of doors

Process followed

In the process we followed, we defined ideas, divided the map creation procedure into parts, and combined different opinions about the process we undertook in order to do a good job.

The goal of the game, as previously mentioned, is to create a puzzle map based on the whack-a-mole game, incorporating mechanics that reflect the team's own essence, so that the player has a fun experience.

Pipeline

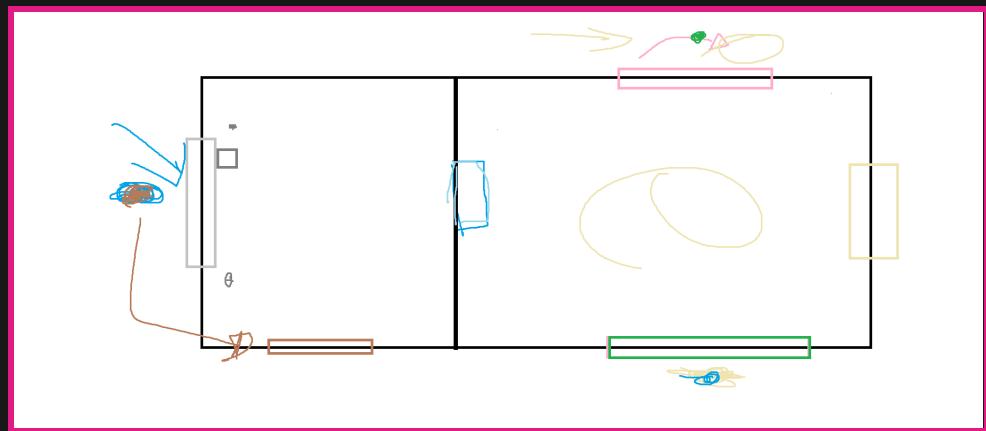
As initial steps, we have defined our objectives and exchanged ideas to determine the direction of the level. For this, we have developed basic ideas about a fun game and expanded upon them to create a video game, incorporating new ways of playing and ensuring that the interaction keeps the player engaged.

We also searched to see if any of these ideas existed in the market and if they were fun. We noticed that there weren't many like them, so thanks to our research, we found that our ideas were original. We combined these mechanics with new ones to create something from scratch, something that can be entertaining.

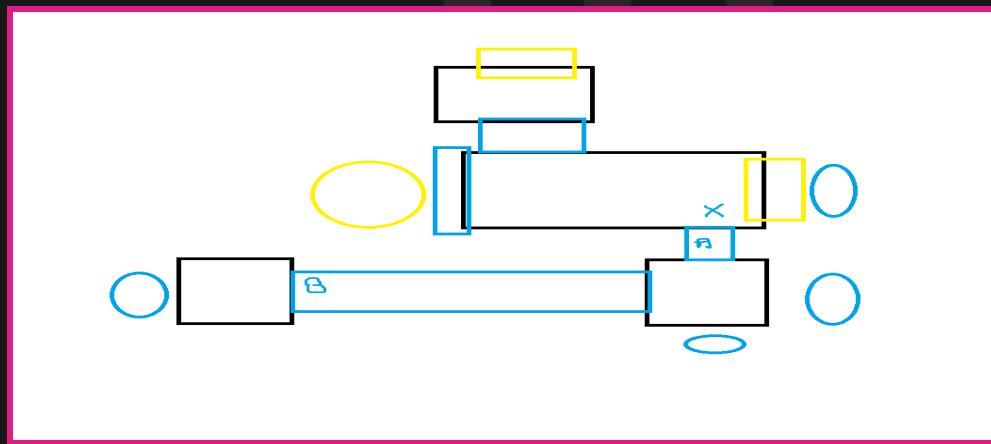
We started by implementing the basic ideas in the game engine, as well as planning the maps and sketching them out to have a clearer representation when building the level.

Draw

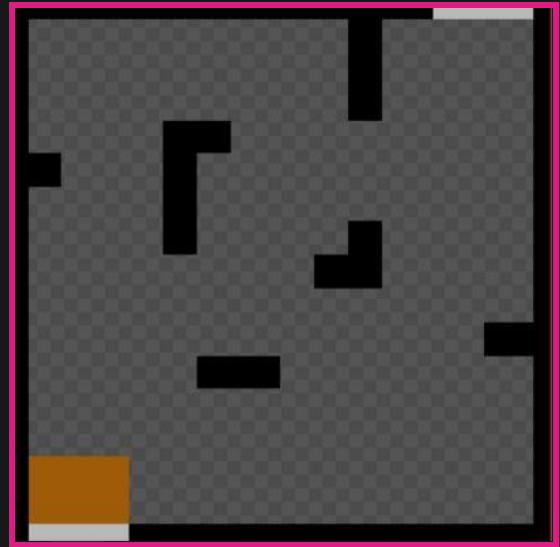
We created several sketches while discussing the content of the level, how it would be structured, what mechanics it would include, and how they would be implemented. These sketches and top-down drawings served as a basis for the construction phase. Here are some of the sketches we made:



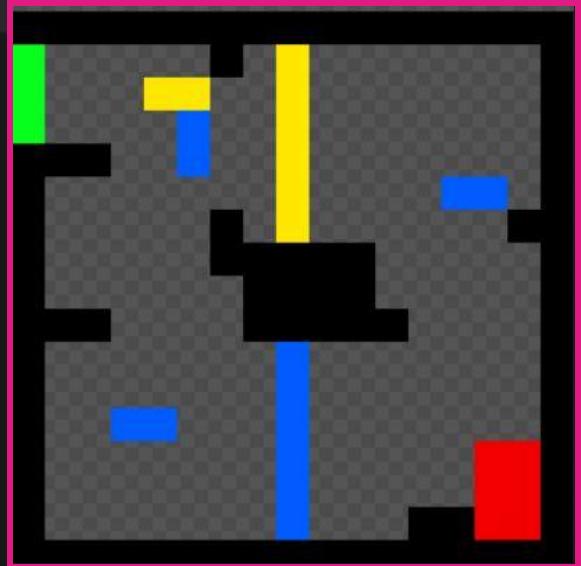
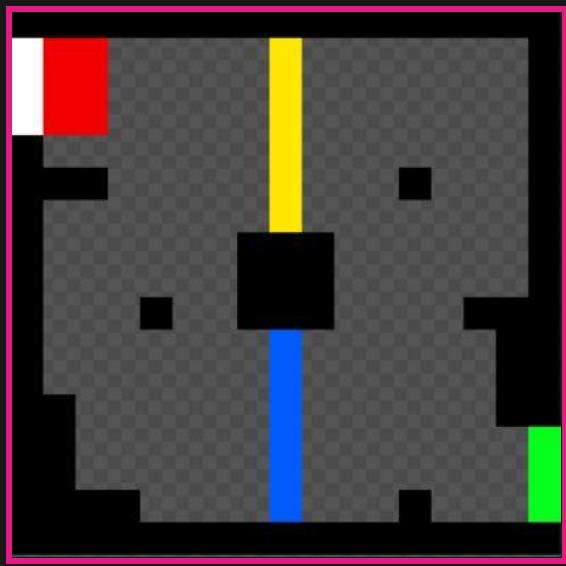
Draw - Tutorial of Walls & windows level



Draw - Principal puzzle of Walls & windows level



Draw - Tutorial of Platform Level

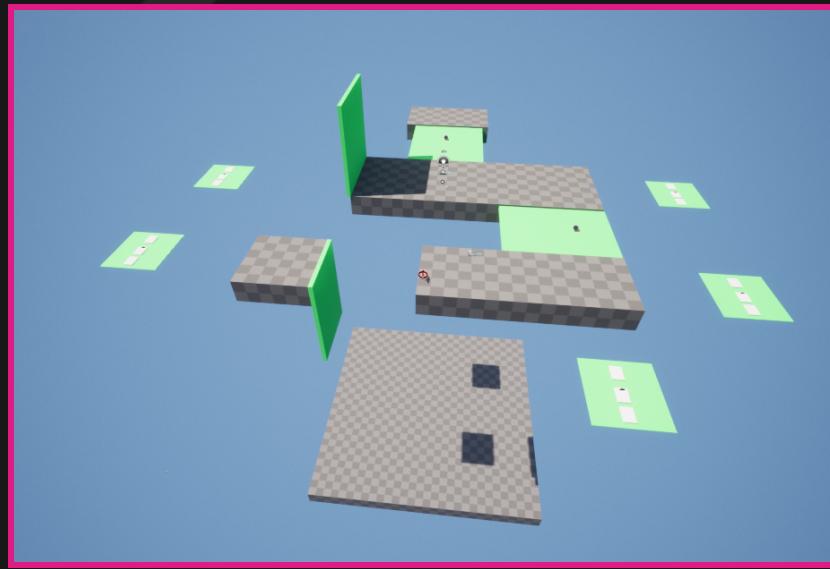


Draws - Principal puzzle of Platform Leve

Build

For this phase, we decided to divide the construction of the level into two parts for each mechanic. This allowed us to focus on making each mechanic engaging and entertaining for the game. We started by creating tutorials and explaining how each mechanic worked, giving players the freedom to choose their own path and have a unique experience.

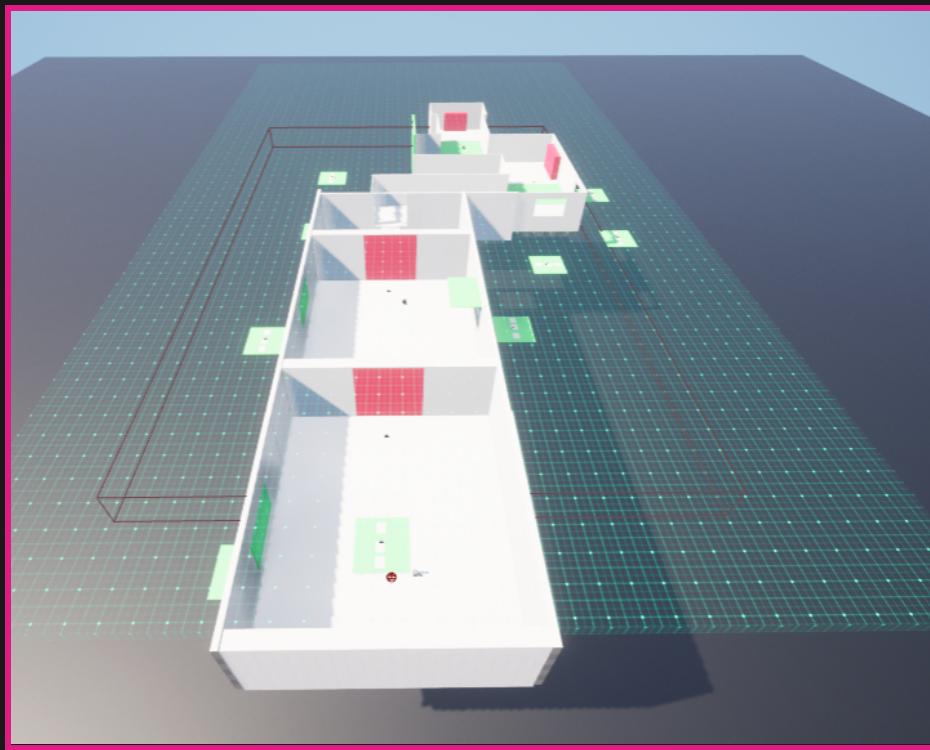
Below is the progress of constructing one of the parts of the game mechanics:



Build - Firsts blocks of Walls & windows level

We started building the level in a way that the first thing to be implemented were the mechanics. This allowed us to progress the construction of the level with a focus on ensuring that the player

learns how to use the mechanics and has the freedom to explore and understand them. We guided the player through the level, helping them follow the flow of the gameplay



Build - Final blocks of Walls & windows level

Test

We have tested with some users and ourselves to identify errors in the level's gameplay. We found several bugs, glitches, and problematic mechanics during the testing phase. We also encountered technical issues with visuals and functionality, including platforms and doors.

However, this testing process proved helpful in improving the level, refining its metrics, making it more enjoyable, and ensuring that the gameplay feels less forced.

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7 stages of action



	Question	Intention	Player
Conceptual model	What do you think this does?	You have to shoot to the mole to activate doors, platforms and gates	Shoot
Affordance	What actions is this object inviting you to do?	Open doors, open gates, move platforms to reach the exit for each puzzle	Open doors
Signifier	Is there a visual element that tell you how you should use it?	N/A	N/A
Mapping	Do controls make sense in relation to the action?	If you shoot to the mole, automatically the interactive objects gonna move	I expected to shoot the mole because it has an eye-catching color
Constarins	What are the limitations? When do you expect the effect to stop?	Depends of the strategy of the player to reach the exit	Shoot out of the room, you can put something to guide the player to what to do

Graph - Don Norman Process

Postmortem

In this project, we learned how to generate metrics for games, ensuring that players don't get lost in the level. We also gained experience in constructing, shaping, and utilizing different tools involved in level design. Through trial and error, we tested the levels multiple times to ensure they felt cohesive and guided players effectively. Working as a team with task division, we eventually merged all the individual parts together, learning how to seamlessly integrate them to create a level that feels cohesive when played.

We could improve the level by making it slightly longer and enhancing the organization of our work. With the constraints of time and the tools we had, we found them to be insufficient for implementing additional mechanics. The map design could also be improved by adding decorations and creating a more immersive environment, rather than having plain, undressed cubes.

Extra

This mood board was created based on the main ideas of our level in order to effectively explain and defend its concept.

