

DES203 INTERACTIVE MEDIA PRODUCTION PORTFOLIO

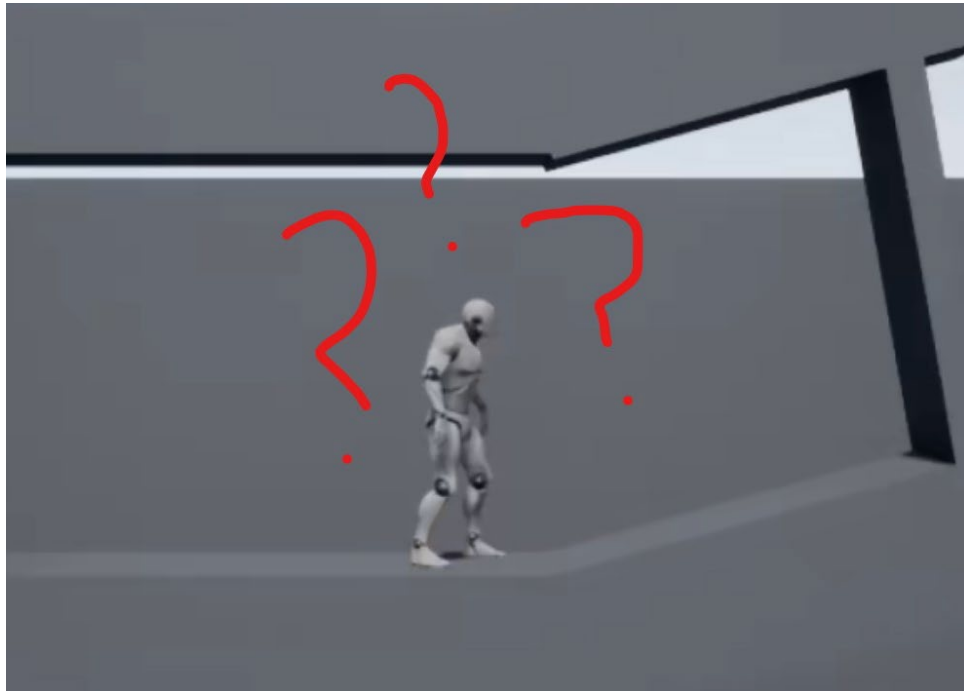
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1702870 A/Y 2018-2019

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LEVEL DESIGN DOCUMENT



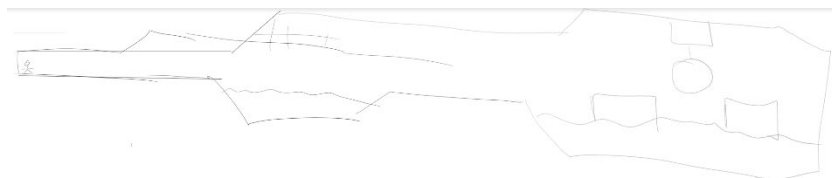
Introduction and settings

The core idea we landed on the first few weeks was an “in your face” satire about the battle royal game, with emphasis on disruptive elements within intra game knowledge (for example: there’s a gun but no enemy to shoot, what a twist for the genre!).

From here we started thinking about the setting, brainstorming on the space/buildings that would fit the setting/narrative. Since from the beginning we were quite set on a puzzle game, the classic settings of a lab or prison was out of question, as well as a school. At the end we came up with a decrepit shopping mall that was just renovated as the battle royal theme.

First prototype (single straight level)

After a brief meeting with the whole group about the setting of the game, I quickly sketched a simple level. This level is set in a mall, the initial idea was to have a single, linear broad level, with both weapons already available to the player to get the most out of the map. Some verticality would come to play, but nothing too impressive, implemented just to spice things up. Down below are two rough sketches of the map.





This video showcased the main mechanics that I and James (mechanics designer) thought that would be used in the game, which are jump, jump combined with a shotgun blast and shooting the crate/big box down to get across the ponds of water. As mentioned previously, since the concept is based on the fact that there are no enemies, the main antagonist at the time was a voice taunting you mixed with environmental hazards. The simplest and more flexible hazard was water, which at the time meant an instant death with respawn right before it. At this point me and James thought about how the voice taunting could be a real danger to the player, creating environmental obstacles and torture devices at its will, delivered by drones.

At this point we were set on 2 weapons:

1. one was a shotgun that if shot at the feet of the player, would propel the player in the air, this added to the jump that the player would be able to do, would give the player a significant way to traverse the level and advancing without the need to touch the ground
2. The other was a crossbow with sticky bolt, similar in concept to the one in Prey, but this idea wasn't fully explored yet, it was just a placeholder without any actual gameplay element or functionality in the level. (This will later become the harpoon/hook gun).

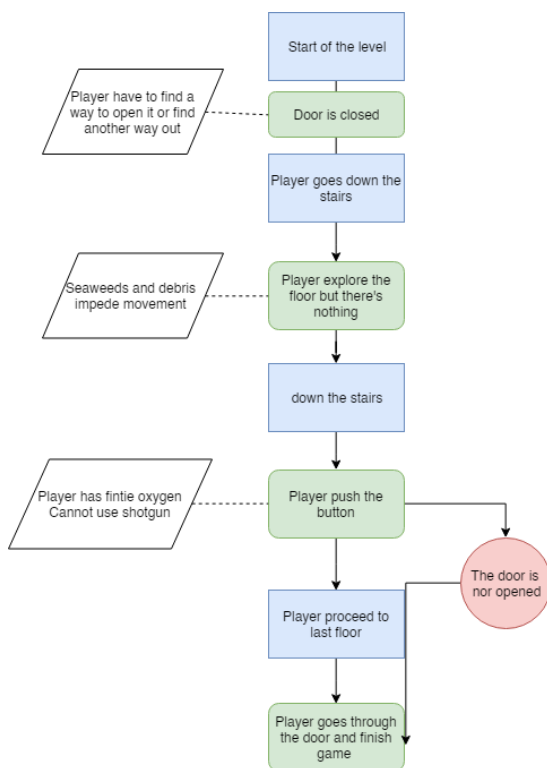
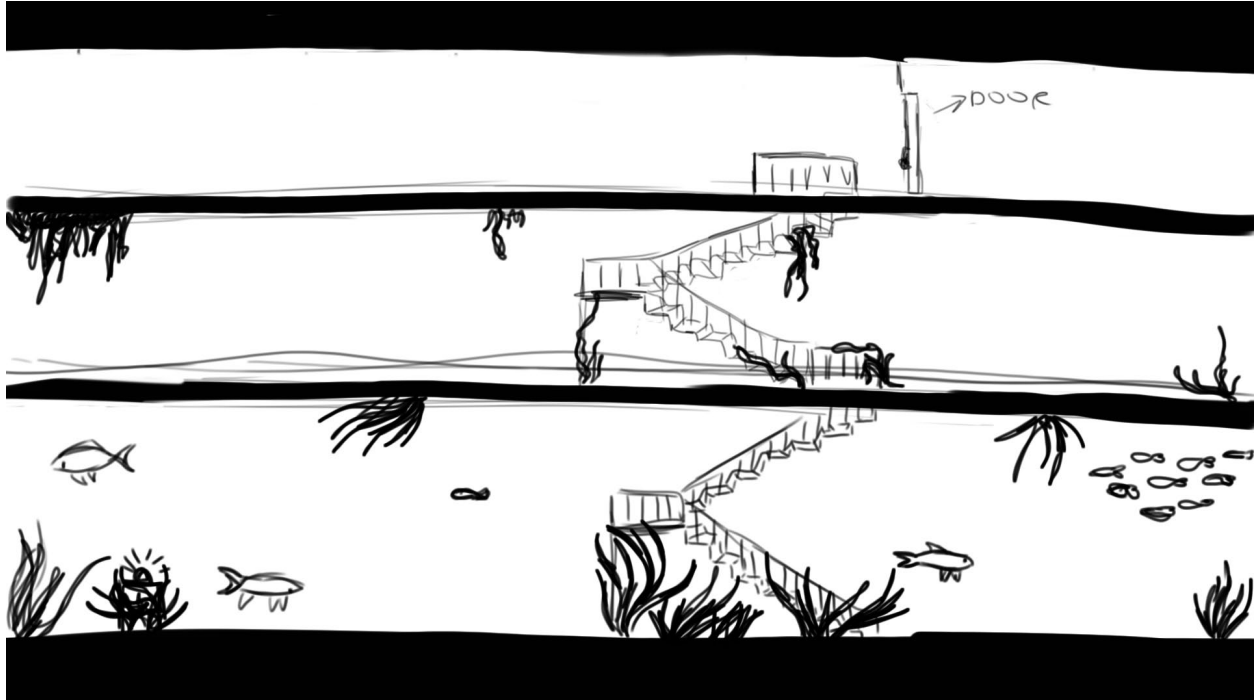
At the same time, I created a prototype in Unreal Engine just to illustrate the key features of the game and how the map would be played. This was scrapped immediately due to the fact that the artists expressed their concern about working in 3D or 2.5D, so we decided to work on Paper2D. Down below a video is illustrating the very first prototype made in Unreal Engine.

<https://youtu.be/Kdxme4YK3kw>

The following week I made the same prototype but in Paper2D to illustrate the same concept but in the chosen media. This is the video mentioned above: <https://youtu.be/NIBryiZD48A>

Second prototype (multi layered level)

From the single streamlined level, I started to gravitate to a multi layered map set in the same decadent mall. The image below is a concept art for the level I did.



In the next meeting with the group we decided that since the main theme is mocking the battle royal genre, the game will start inside the battle bus from fortnight. That will come crashing on the roof of the mall, and the only survivor will be the player character.

The main design goal of this level was to put a disruptive element in each floor, in the middle one the movement was supposed to be slowed down due to the fact that seaweeds would jam the roller skate and cause movement impediment. The submerged level would have swimming as the movement mechanics, but the shotgun would not work, so only the harpoon gun would help the player reaching its goal.

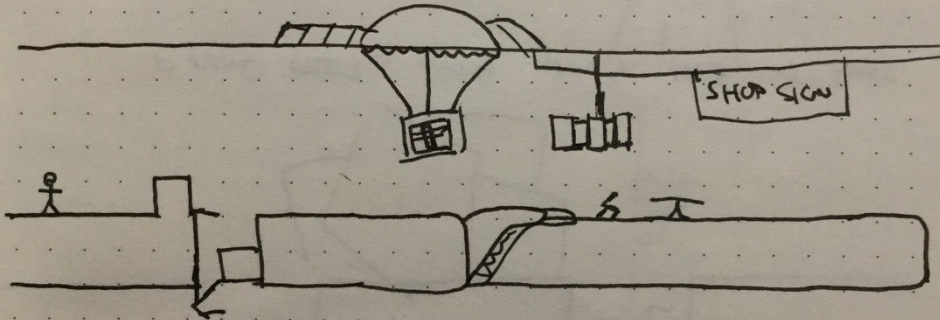
Speaking of the goal, in this map iteration, the goal of the level was to get to the button and to escape the level through the door. The lack of contents was intended, as this was the skeleton on which I was going to base future iterations of the map, inserting more puzzles and platforming sections.

DES 203 LEVEL DESIGN

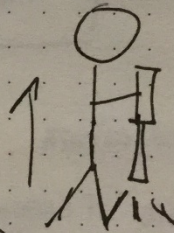
- SET IN MALL
- 3 LEVEL
 - ROOF/THIRD FLOOR
 - SECOND FLOOR
 - BASEMENT

IDEAS FOR ROOF/THIRD FLOOR

- NO DEBRIS = FULL MOVEMENT CAPABILITIES
- ONLY FRAMG FOR SHOTGUN/FORCE-OF-NATURE WEAPONS
- LIGHT PUZZLE, ONLY INTRODUCTION TO GAME MECHANICS
- WATER IS ELECTRIFIED
- BUTTON TO SHUT DOWN ELECTRICITY AT THE END
- ? HOW TO EXPLAIN FAILURE OF WATER?



- CLATES
- CHAIRS/TABLES → SHUT DOWN
- SHOP SIGNS
- CHAIRS/TABLES → PUSH AROUND
- STAGE SIMPLE ~~GROUND~~ JUMP
- JUMP + MOMENTUM
- "DOUBLE" JUMP



Does it destroy the
thing below?

- DIFFERENT MATERIALS
MEAN DIFFERENT DURABILITY

- WOOD, STEEL, PLASTIC, ALUMINUM

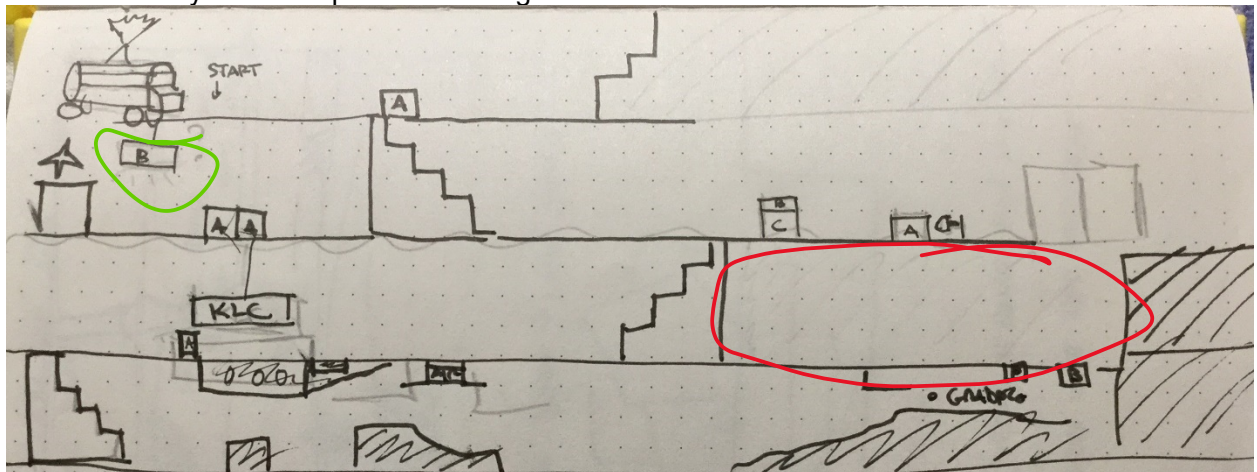
On the left there is a page from my notebook where I started to piece the mechanics and level design together

Third prototype (multi layered level- but on paper)

Jaimie drew the concept below, adding to the multi layered concept, saying that I should aim to something that would take inspiration from this level.



After a few days I came up with this design

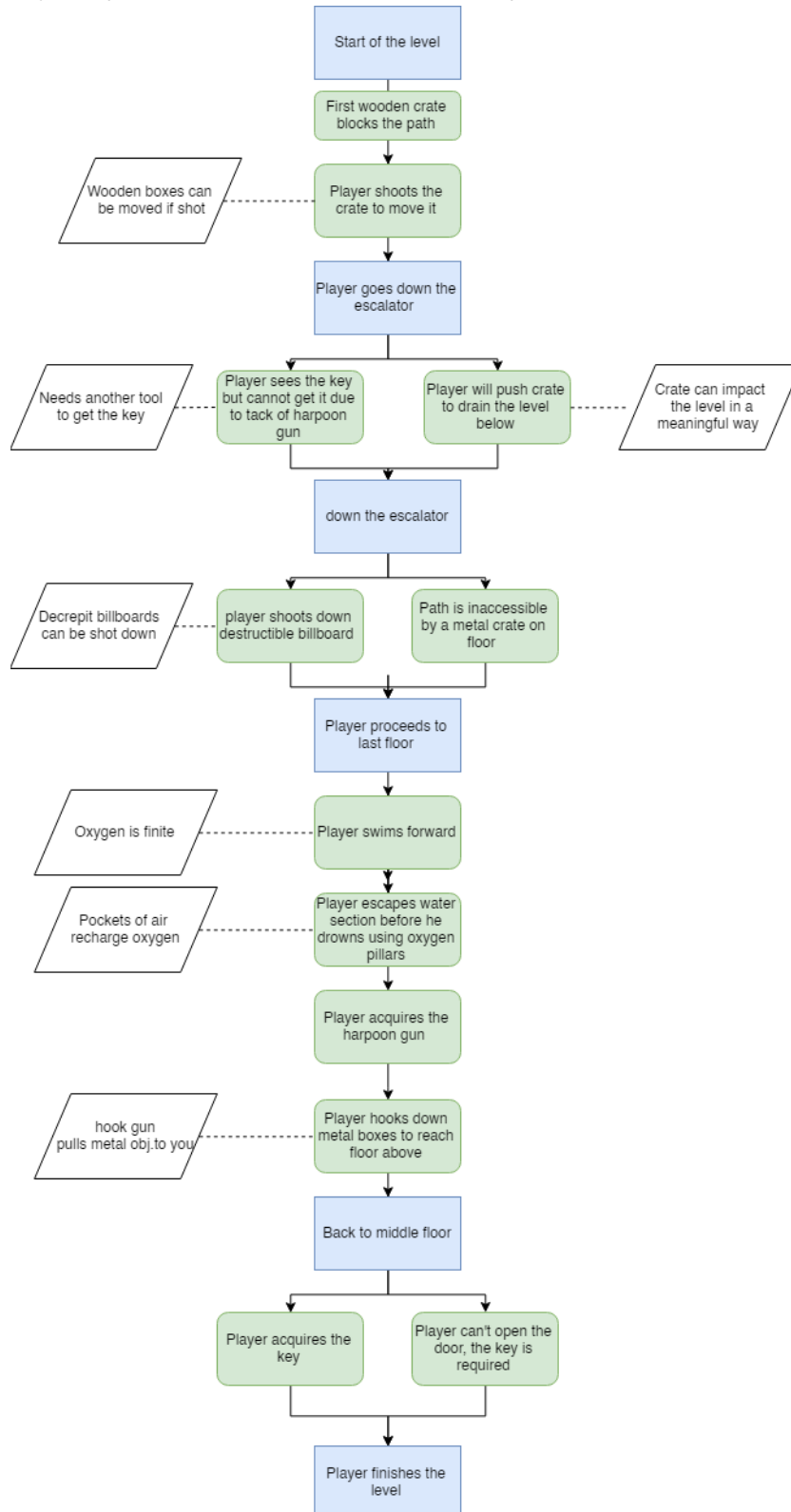


This iteration will be the base for all the levels that will follow. The goal in this one is to escape through the door on the middle floor, but to do that the player need to acquire the key that is reachable only if the player has the harpoon gun to bring down the [B] blocks (circled in green).

At this stage both the guns were defined in specific roles: the shotgun was a way to propel the character around the map, move objects, but it was useless while swimming. The harpoon gun was the opposite, it was usable while underwater, and could move around metal crates, which are too heavy for the shotgun to move.

In one of the meeting, Jaime express his concern about the very finite use of the harpoon gun, saying that it felt like it didn't see enough use to justify the trouble of getting it. He also noted that the zone circled in red felt too hollow. The next designs will address both of these concerns.

In this iteration, the [A] blocks are wooden crates, which can be moved by shooting them, blocks [B] are metal crates, which can be only moved by using the harpoon gun. The [C] blocks are non-movable objects (debris or environmental obstacles).



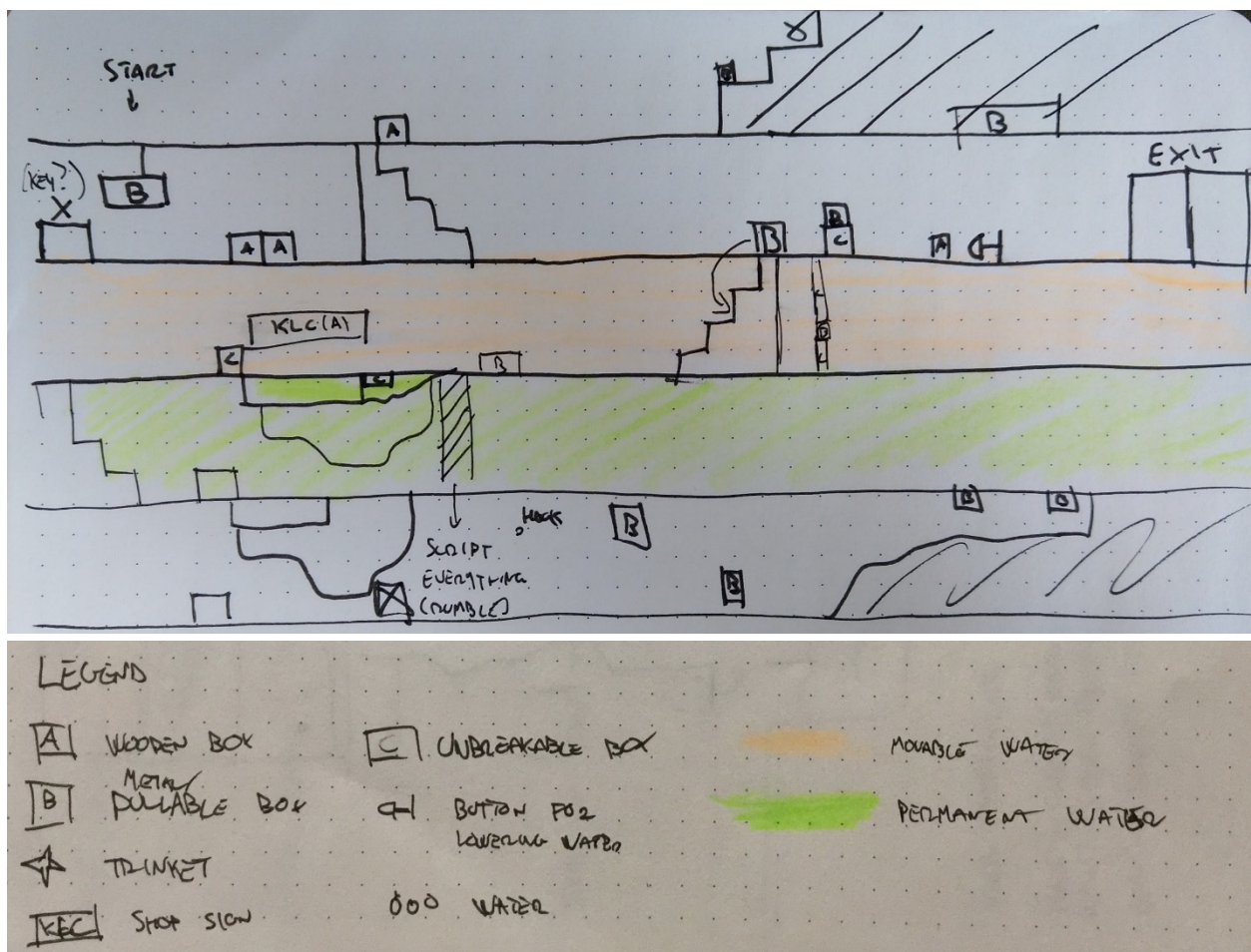
The ideal flow of the level is visualized in the graph on the left.

Third prototype revision A (multi layered level)

This revision tried to address the primary concern raised by Jaime, which was the little use of the hook gun. To solve this problem, I decided that the underwater section needed a change, so that the harpoon gun would be usable and most importantly, **necessary** to use in that section. To do so, I designed the map in such a way that when the player picks up the hook gun in the underwater section, the whole map crumbles and changes slightly, blocking the player from going back on the left. At this point the player will be forced to use the harpoon to get to safety before oxygen will completely deplete.

The flow of the level would be extremely similar to the previous one.

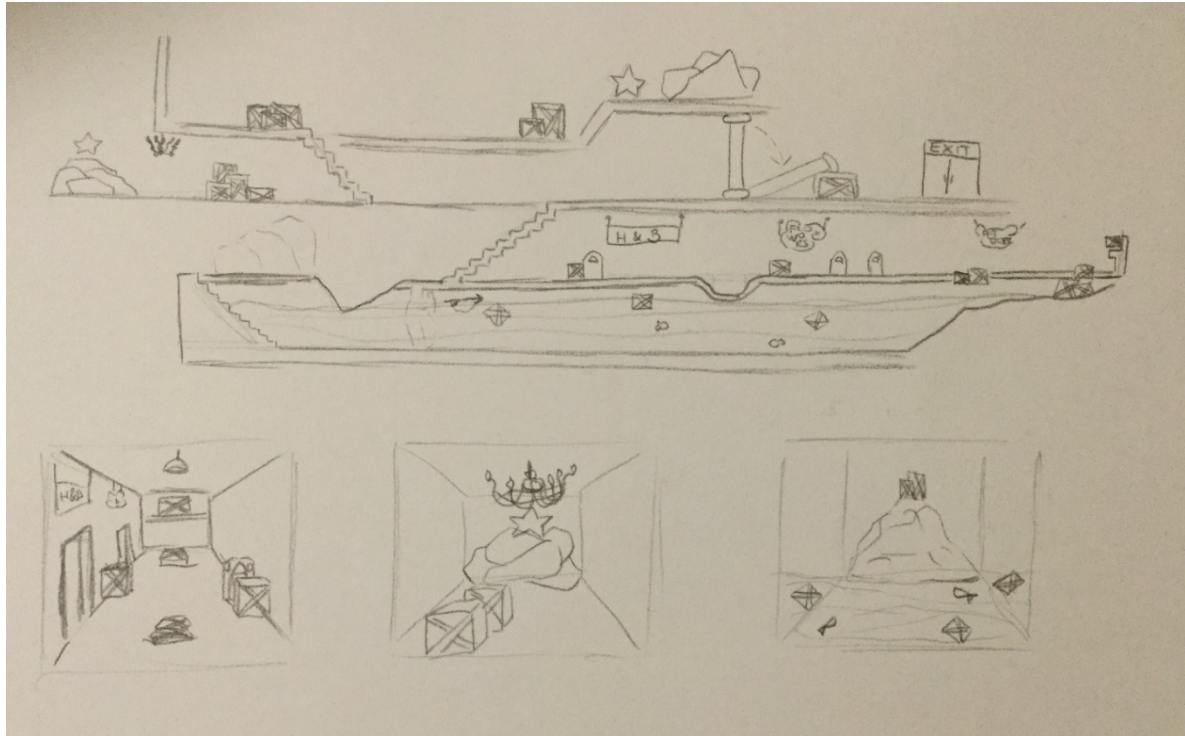
This design change can be seen in the image below. The last two floors are the same, before and after the crumbling event.



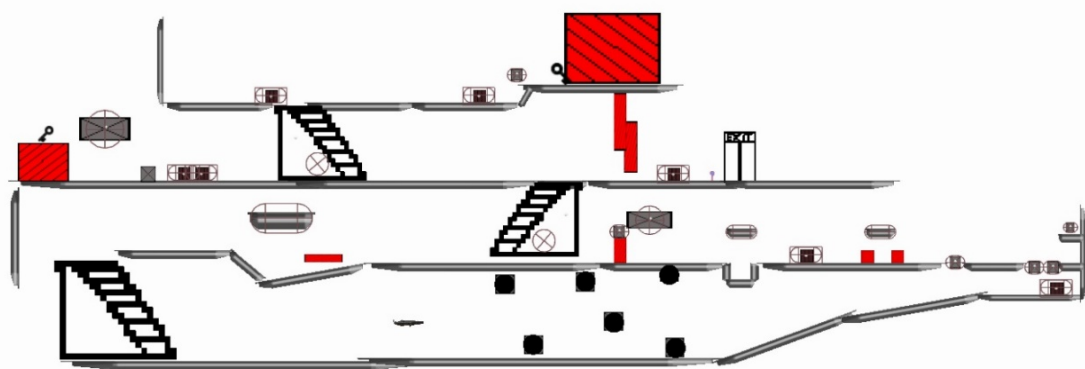
Third prototype revision B (multi layered level)

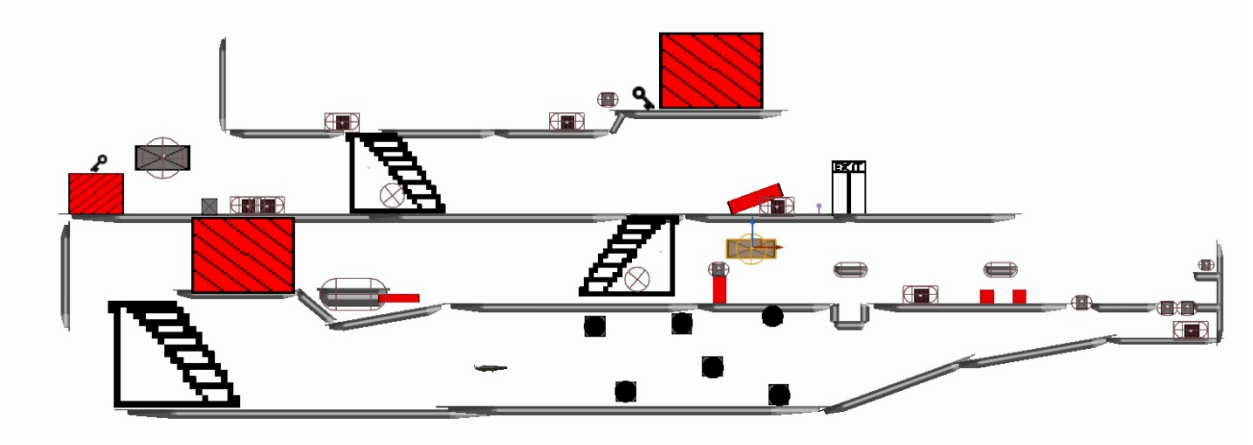
The main difference between revision A and B is the section that once was completely hollow and unused. Now it serves as the main puzzle section where the player is tested comprehensible on what he learned throughout the level. This section is the only one in which the player will have to use both the shotgun and the harpoon gun.

The image below is the final concept art on paper of the map.



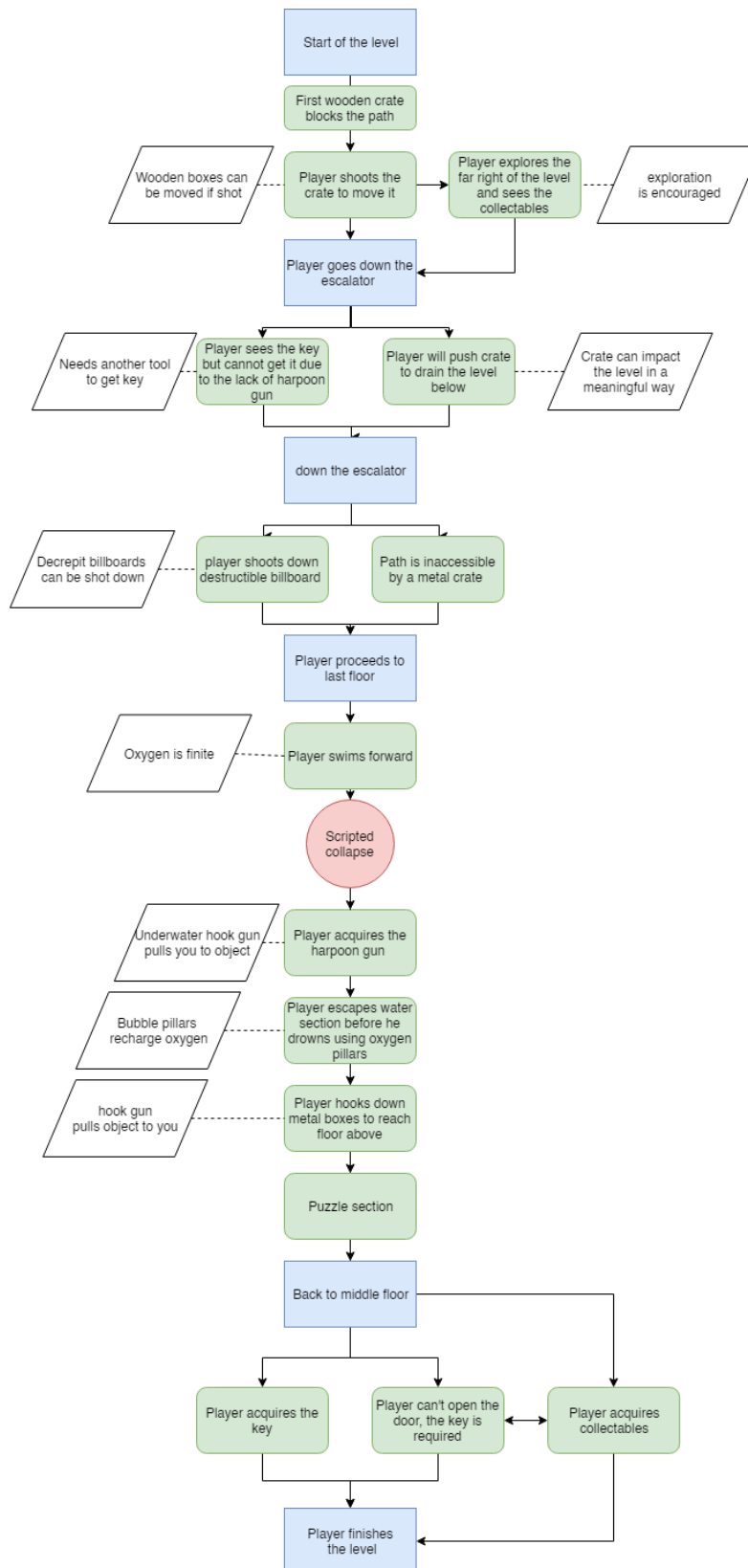
After receiving positive feedback from the group, I started to map out the layout in Unreal Engine, just to get the feeling of scale and how it would play out. Below is the first rough draft in Unreal Engine, before the crumbling takes place, while the second image is the map after the crumbling.



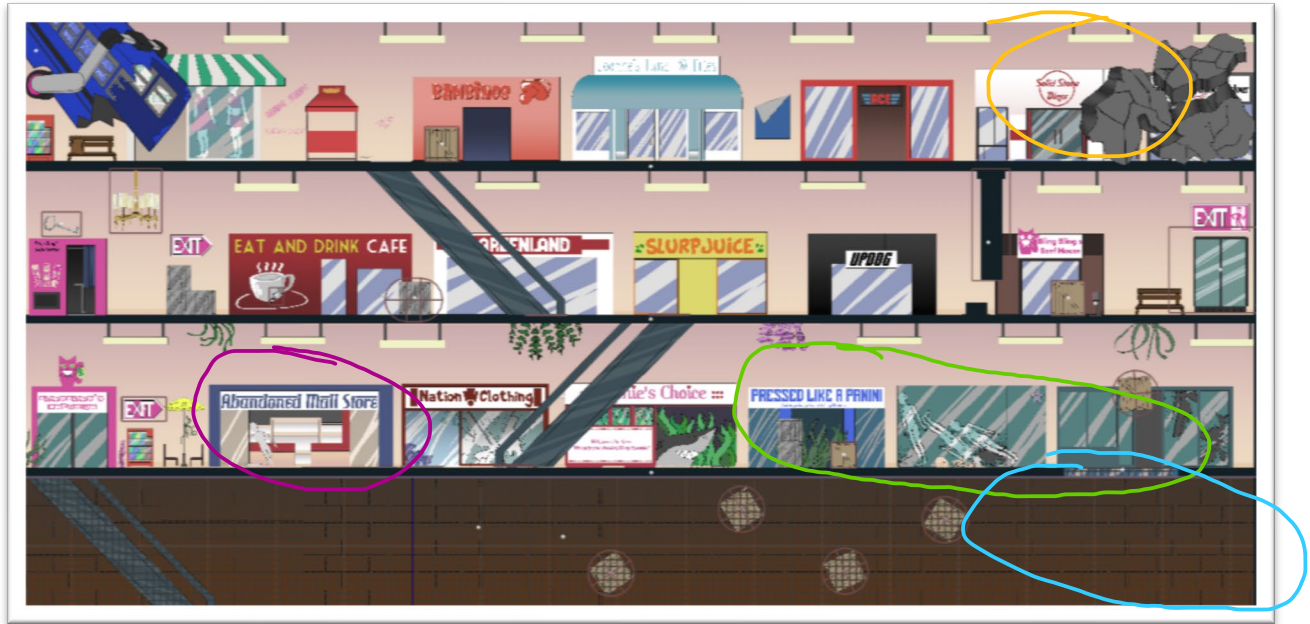


This version of the level was supposed to be the final version, the one implemented into the game, but due to technical problems, we weren't able to implement it.

The level flow has changed slightly from the previous one, as shown from the graph below.



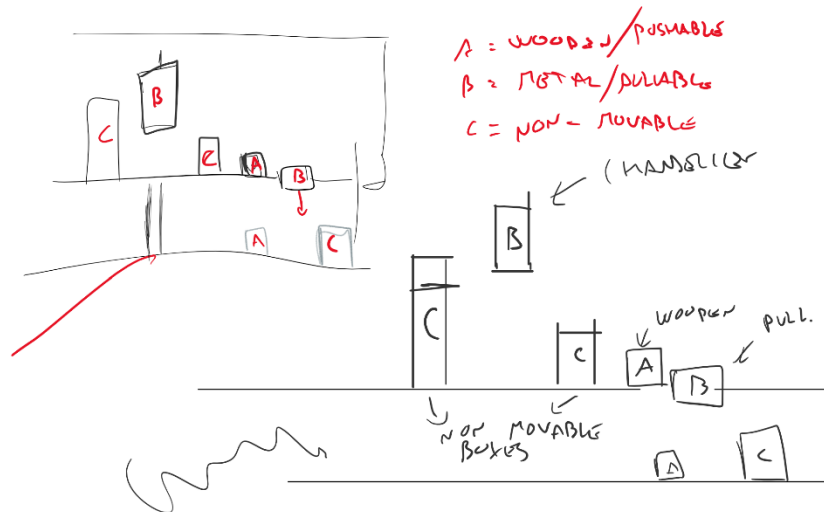
Map in the final game



This is the map used in the final level with the finished art assets. Due to the before mentioned technical difficulties with the engine and lack of time, the design isn't at its peak, as I had to scrap entire parts of the map and redesign around the problems. Nevertheless, the player's experience and the game flow are still very similar to the one intended.

Now I'm going through every single change that I had to do last minute to comply:

- **Green zone:** I had to delete the puzzle because the hole in the ground that was central to the whole puzzle in the area, was inaccessible to player and objects, so it was useless. I quickly designed another puzzle but due to lack of time and assets, I had to fall back on a very simple puzzle. This was the substitute puzzle that was never implemented.

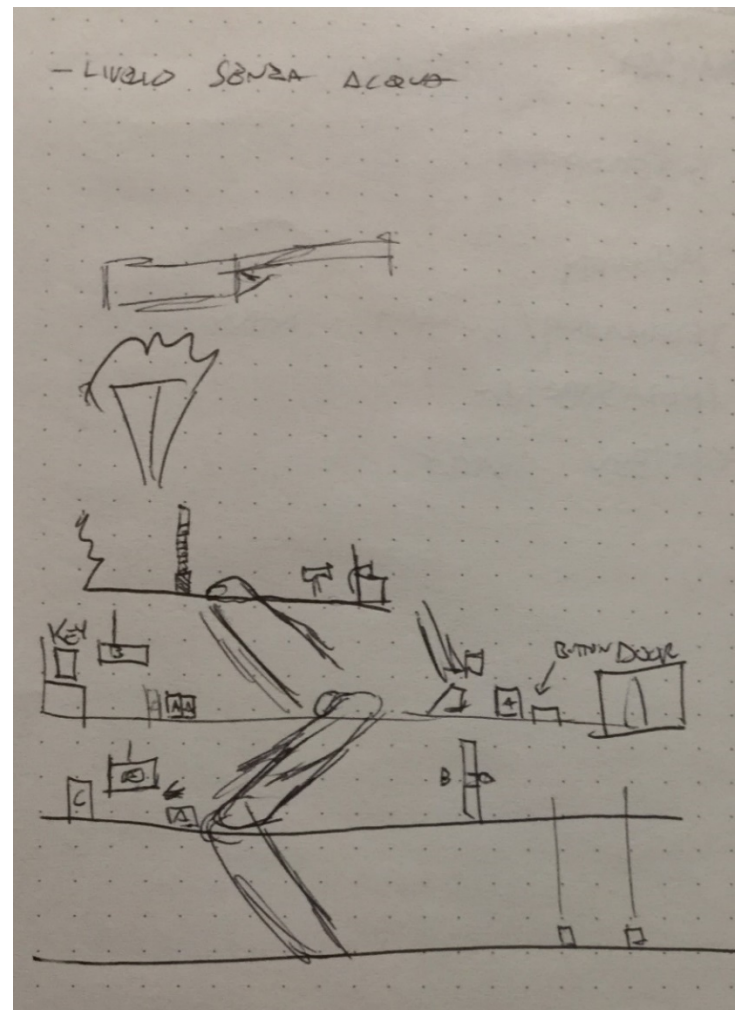
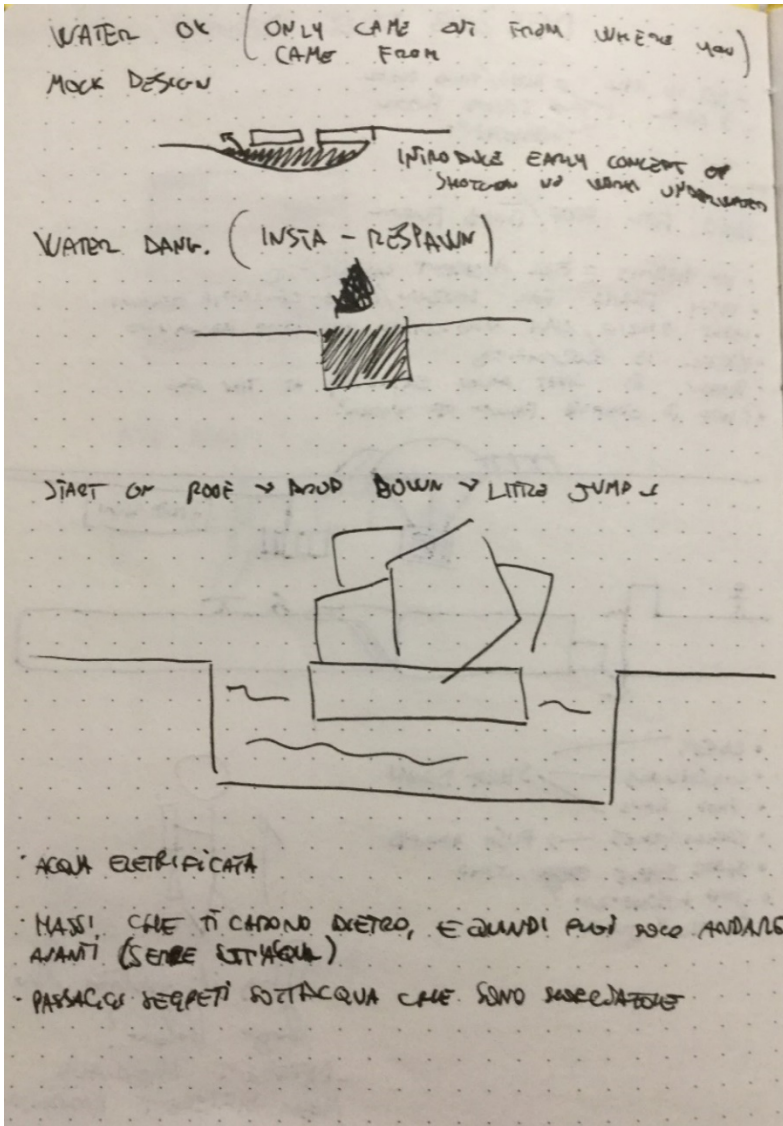


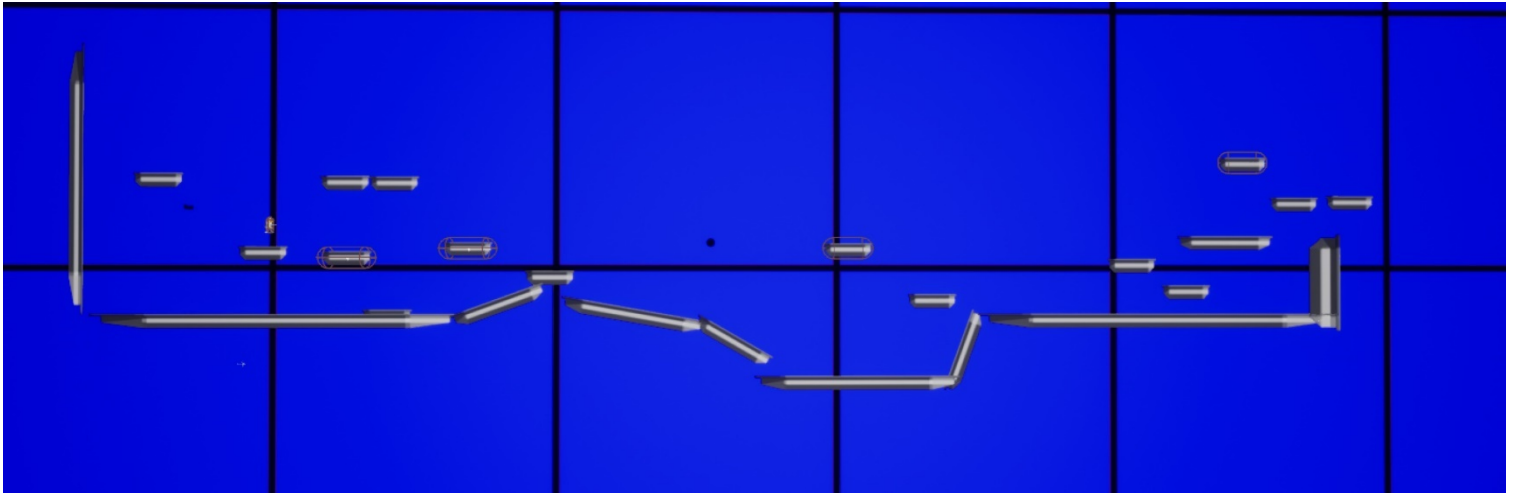
-
- **Blue zone:** Due to mis-communication this part is fully submerged with no land where the player can land on and use the harpoon as if he was out of water, pulling down metal crate.
 - **Pink zone:** Same problem as with the green zone. The hole in the ground, made by the artists, was inaccessible so I had to cut the content.
 - **Orange area:** On top of the debris there should have been a collectable, but due to lack of resource, it wasn't implemented.

Closing thought on the level design:

- The goal was to create a map that would have been fun to explore
- Backtracking would open up new way to interact with the map
- Puzzle concept introduced to the player one by one
- Final puzzle pieces would test what the player had learn

Other sketches and miscellaneous level design leftovers.





- HOW THE GAME BEGINS?
 - HOW TEACH TO SHOOT AT FEET?
 - HOW DO WE JUSTIFY CONCERNABLES?
 - HOW DO YOU ~~ON~~ HANDLE GRADGE ON OTHER SIDE?
 - HOW TO HANDLE ESCALATOR? (BOTTOM? JUMP?) $\frac{W}{S}$?

GENERAL Qs

- CONSISTENCY IN PUSH AND PULLARY ✓
 - PLUMBING W ONLY 2 AXES ✓
 - REWORK PLUMBING POSITION ✓
 - ESCALATOR
 H

TO FIX/ASK

Quality Assurance.

I willingly took responsibility to create test cases and take care of the QA of the game, but since the final executable of the game was done on the latter part of the 23rd, I didn't have the time necessary to test each one of my test cases. I'll put in here the file without the testing part.

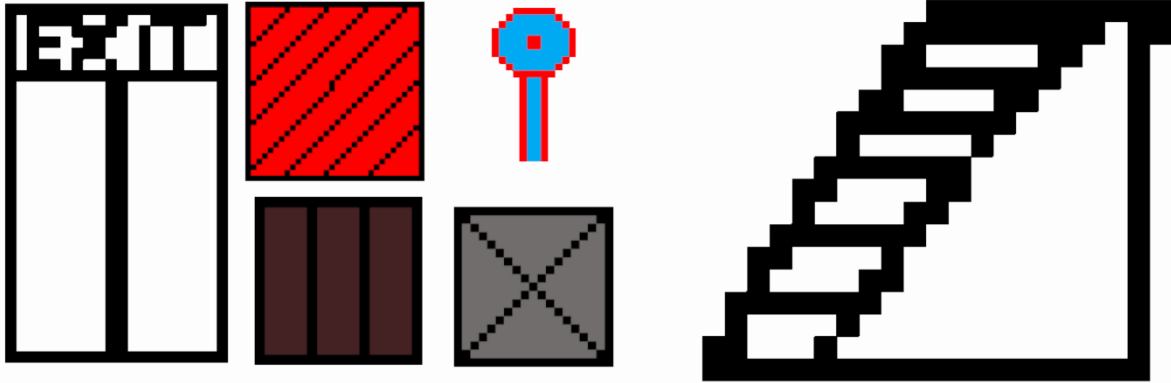
SEVERITY	AREA	EXPECTED RESULT
1 to 5, 5 is max	TEST CASE	N/A
5	Animation	Idle animation works
5	Animation	Swimming animation works
5	Animation	Running animation works
5	Animation	Stopping animation works
5	Animation	Jumping animation works
5	Animation	Shooting animation works
5	Animation	Gun animation works
4	Animation	Arms moving with force gun animation works
4	Animation	Arms moving with grapple gun animation works
4	Animation	Grapple gun animation works
4	Animation	Grapple gun rope animation works
5	Animation	Crate being destroyed shows the appropriate animation (s1)
5	Animation	Crate being destroyed shows the appropriate animation (s2)
5	Animation	Crate being destroyed shows the appropriate animation (s3)
5	Animation	Crate being destroyed shows the appropriate animation (s4)
5	Animation	Crate being moved shows the appropriate animation
5	Animation	Button being pressed shows the correct animation
5	Animation	Destructibles show the correct animation
2	Animation	Door opening animation works
1	Animation	Key picked up animation works
1	Animation	Collectables picked up animation works
2	Animation	Escalator animation
3	Audio	Jumping sound
3	Audio	Shooting gun sound
3	Audio	Grapple sound
3	Audio	Underwater sound distortion
3	Audio	Elevator sound
3	Audio	Box breaking sound
3	Audio	Debris falling sound
3	Audio	Water flowing sound
3	Audio	Destructible falling sound
3	Audio	Oxygen bubbles popping
3	Audio	Key picked up sound
3	Audio	Collectible picked up sound
3	Audio	Walking sound?
3	Audio	Main menu music

3	Audio	Dialogues
3	Audio	Game finished sound
3	Audio	Spectator number rising
3	Audio	Spectator number falling
5	Asset placement	Background sprites are in the correct position
5	Asset placement	Wooden boxes are in the correct position
5	Asset placement	Metal boxes are in the correct position
5	Asset placement	Debris are in the correct position
5	Asset placement	Unmovable obstacles are in the correct position
5	Asset placement	Movables are in the correct position
5	Asset placement	Escalator sprites are in the correct position
5	Asset placement	Water sprite is in the correct position
5	Asset placement	Key sprite is in the correct position
1	Asset placement	Collectable sprite is in the correct position
5	Asset placement	Harpoon gun sprite is in the correct position
4	Asset placement	Button placement is correct
5	Asset placement	Door sprite placement is correct
4	Collision	Verify collision between character and each floor of the level
4	Collision	Verify collision between character and each wooden crate in the level
4	Collision	Verify collision between character and each metal crate in the level
4	Collision	Verify collision between character and each unmovable scene object
4	Collision	Verify collision between bullet and wooden box
4	Collision	Verify collision between bullet and collapsible
4	Collision	Verify collision between harpoon and wooden crate in water
4	Collision	Verify collision between harpoon and metal crate out of water
4	Collision	Verify collision between harpoon and underwater section walls
4	Collision	Verify collision between character and chandelier
4	Collision	Verify collision between character and billboards
4	Collision	Verify collision between character and exit door
5	Gameplay	Does the escalator work?
5	Gameplay	Do the crates work?
5	Gameplay	Is the key picked up?
5	Gameplay	Are the collectables picked up?
5	Gameplay	Can you push the crate on the button?
5	Gameplay	Does the button function once pressed?
5	Gameplay	Does the harpoon gun work underwater?
5	Gameplay	Does the script start once the hook gun is picked up?
5	Gameplay	Does the script disable player inputs?
5	Gameplay	Does the glass ceiling collapse after the script?
5	Gameplay	Does the pillar collapse after the script?
5	Gameplay	Do debris appear in the level after the script?
5	Gameplay	Does the key open the door?
5	Gameplay	Do the collectables add score in the end?
5	Gameplay	Can metal boxes be pulled?

5	Input	[RMB] will not shoot the harpoon before getting it
5	Input	[RMB] shoots the harpoon after getting it
5	Input	[LMB] shoots the shotgun
5	Input	[A] moves the player left
5	Input	[D] moves the player right
5	Input	If on escalator [S] brings down the player
5	Input	If on escalator [A] brings up the player
2	Input	[SPACEBAR] executes the small jump
5	Input	If player is aiming down and presses [LMB], big jump will happen
5	Input	After getting the key, pressing [E] at the door will end the level
3	Input	Pressing [P] will pause the game
3	Input	While the game is in pause only [P] and [LMB] will work
5	Input	No other key other than [W],[A],[S],[D],[SPACE],[E],[RMB],[LMB] should work
5	User Interface	Does it work?
5	User Interface	Does the main menu work?
4	User Interface	Can you get into control page?
4	User Interface	Can you quit the game from the menu?
4	User Interface	Can you press any other button other than [LMB]?
4	User Interface	Does the UI correctly reflect the oxygen depleting?
4	User Interface	Does the UI correctly show the audience number?
4	User Interface	Does the "you died" screen correctly quit the game?
4	User Interface	Does the "you died" screen correctly restart the game?
4	User Interface	Does the end game screen appear?
4	User Interface	Does the end game screen correctly quit the game?
4	User Interface	Does the end game screen correctly restart the game?
4	User Interface	Does the end game screen correctly bring back to menu?

Placeholder art assets.

During this semester, when artists were developing concepts art and starting to create assets, I and Anand needed some placeholders for the Unreal Engine file. All these assets are made by me.



Final thoughts

This experience shed some lights on what it means to works in a group with other professional figures, with all the good and bad things coming with it. Looking back, I can certainly say that I could have smoothed the concept a little. (Since in a few places, if the player makes an error too many times, he can get stuck in the level). But still, given the circumstances, I would say that my work hasn't been so shoddy.

To sum things up, I would say that the experience was intellectually stimulant, especially with the weekly feedback that the professor would give us, on top of the one received from the group. Speaking of the "bad" things, as briefly hinted above, working within a group can be difficult: It's not so easy to respects all the given deadlines, to attends planned meetings, and to agree on ideas and visions for the game. I'm quite frustrated that the design that got into the game isn't the best one, but I hope the portfolio will shed some lights on my workflow and the work I've done and how much I had to compromise due to lack of time and resources.