CLIPPING MASK

GAME TREATMENT
DOCUMENT

Clipping Mask Game Treatment

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1 Introduction

This report serves to specify the concept, story, gameplay, technical specifications, audience, overall design and production details of the videogame project "**Clipping Mask**". Both the game and the document are being produced for the Game Design course at Instituto Superior Técnico by Diogo Silva, Jose Palha, Luís Silva and Rui Melo.

2 Executive Summary

Clipping Mask is a 2D Puzzle Platformer in which the player must use a combination of movement skills, alongside the "*Clipping Mask*" ability in order to progress in each level. This skill allows them to copy properties from their environment and paste them into others, effectively altering the landscape to their advantage.

Properties are represented through the usage of colour schemes which taint the interactable object (i.e platforms, obstacles, enemies and so on) in the environment. For example, *blue coloured* objects allow the player to stand on them, whilst *red coloured* objects kill the player on collision.

The player will face different levels of increasing complexity, as they get progressively more acquainted with both the movement mechanics and the *Clipping Mask* power, with each level being completed by simply managing to traverse it from start to finish.

3 Game Overview

This section goes over the game's core gameplay loops, description, target audience and other aspects, providing a good overview of what the game is aiming to be.

3.1 Game Description & General Idea

Clipping Mask is a 2D Platformer/Puzzle game hybrid in which the player controls a character who wears the powerful "Clipping Mask". The core idea is that each type of object in each level is denoted through a well-defined colour scheme indicating its properties and the goal of the player is to complete each level by platforming around the level and using the *Clipping Mask Power* to copy and paste colours from one object to another, effectively altering the level in their advantage.

For example, if there is an enemy, which would kill the player on touch, flying between a crevice too large for the player to cross they could use the *Clipping Mask Power* to copy a harmless colour from an object in the background of the level and apply it to the enemy, making them safe for the player to stand on top of.

The game's abstract idea is centered around the concept of a *"Clipping Mask"*. A Clipping Mask is a concept commonly used within the digital artist's community, being defined as "A group of layers to which a mask is applied. The base layer defines the visible boundaries of the entire group to which the mask will be applied". By empowering the player with the ability to copy the colours of the level into a "layer" (as denoted by the floating square controlled by the player) and then applying the copied "mask layer" onto the objects of the level, which act as the "base layer", hence masking it in a new coat of paint with new properties.
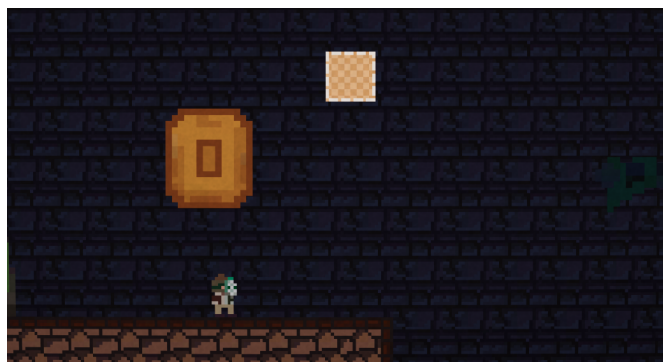
Img 3.1.1 - The player character after having copied the colour orange from the crystal in the background into their clipping layer (represented by the floating, controllable square)

3.2 Key Features

As a 2D Platformer **Clipping Mask** boasts the traditional movement mechanics one would expect of the genre, alongside some augments such as a dash and wall jumps. On top of that it also features the titular *Clipping Mask Power* mechanic making it wholly unique. For brevity, below is a list of all main features to be expected from **Clipping Mask**.

- Tight **Movement** controls with features such as Dashes, Wall Jumps and Wall Slides.

- **Colour Coded** objects signifying their current properties.

- *Clipping Mask Power* allows the player to copy and paste colours from one object to another in order to change their properties and solve puzzles.

- **Hand Crafted Levels** boasting a unique mix of mechanical challenge through platforming and logical reasoning through puzzles utilizing the *Clipping Mask Power*.

- **Unearthed Temple Aesthetic** inspired by spelunking and archeological movies and games.

3.2.1 Movement

Movement in **Clipping Mask** will provide the habitual controls one would expect from the 2D platformer genre. As such, the player will be able to **move left and right** and **jump** using snappy and tight controls.

Additionally, the player will also be able to perform a **horizontal dash**. The player can dash once whilst in the air, meaning that when they touch the floor the dash is reset and they're allowed to do it again. During the dash the player will not be affected by gravity, meaning they will have a small window in which they won't fall, floating through the air.

The player is also given the ability to perform **wall jumps**, allowing them to easily scale up vertical walls. Besides this they can also **slide down walls**, making them fall slower.

3.2.2 Clipping Mask Mechanic

The main feature of **Clipping Mask** is the *Clipping Mask Power*. Using this power the player can copy properties from objects in the environment and paste them into other objects, effectively altering the way they behave.

This mechanic is the main tool the player will have to use in order to complete levels (besides mastering the movement/platforming). With it they will have to solve puzzles and creatively think about how changing their current environment can make things easier (or possible at all) for them to traverse the level.

It should be noted that the player has a limited number of times they can use this power each level. This was done to prevent players from simply removing all hazardous objects, completely bypassing intended platforming sections. However, the limit given is always larger than the necessary number of uses intended for the player to complete the level, so as to still allow them the creativity of bypassing *some* challenges through clever usage of the Clipping Mask mechanic. This is further explained in section 5.5.

3.2.3 Colours

Following is the planned list of colours and their corresponding properties. To reiterate, objects that can be interacted with using the *Clipping Mask Power* are colour-coded in order for their properties to be easily recalled and identified. Using this power, player's can copy colours from one object and paste them on top of another, effectively changing some of their behaviours.

It should be noted that this is a work in progress list and, as the project's development goes on, this is an aspect that could be expanded upon for the sake of adding new gameplay mechanics. Likewise, this is also a possible exploration avenue for adding new Downloadable Content to build upon the game's longevity.

- **Blue**
  - Blue-tinted objects allow the player to safely stand on top of them. They also forcefully stop the object in place preventing its movement (if it had any to begin with).

- **Green**
  - Green-tinted objects allow the player to safely stand on top of them. Unlike Blue-tinted objects, however, Green-tinted objects are allowed to move. Whether they do so or not, however, depends on

the type of object it is (i.e if the object has any inherent movement patterns).

- **Red**
    - Red-tinted objects instantly kill the player on touch, effectively resetting the level. However, they also destroy certain obstacles like rubble when in contact with.

- **Purple**
    - Purple-tinted objects allow the player to pass through them as if they weren't there. They also still reset the player's dash.

- **Orange**
    - Orange-tinted objects immediately rebound the player when they land on top of them, shooting them up higher than the player's normal jump allows for.

Img 3.2.1 - The different colours currently implemented in **Clipping Mask**

3.3 Game Experience & Design Goals

Clipping Mask's game experience is aiming to fulfill three main design goals:

1. **Give the player fluid and natural-feeling movement controls**

Clipping Mask aims to provide smooth movement mechanics allowing the player to easily move around levels in a way that feels both natural and satisfying. The game wishes to avoid having "floaty" controls, instead aiming to always invoke in the player the feeling of being in total control of the main character. This will be achieved through the design and implementation of a tight character controller.

Moreover, besides the traditional movement and jumping the game also wishes to implement dashes and wall jumps/slides in order to spice up gameplay and increase the skill ceiling, giving the player more options on how to traverse the map, and allowing designers more creativity for level design. Alongside this, certain in-level options may also directly interact with the player, giving them higher jumps

or resetting their dashes allowing them to dash more than once in the air, again, adding more avenues for designers to create interesting and diversified levels.

2. **Challenge the player with unique and novel puzzles that incentivize level exploration**

The puzzles in **Clipping Mask** aim to challenge the player as they will be progressively challenged with puzzles of increasing complexity. **Clipping Mask** aims to have a sequence of levels that, effectively, provide the player with new interactions, through the introduction of new colours, alongside novel ways of utilizing interactions from previous levels through the clever usage of level design. This way in each level the player will have to put in practice everything they will have learned up until that stage.

Moreover, **Clipping Mask** also wishes to make usage of the *Clipping Mask* mechanic puzzles to incentivize the exploration of levels. An example of this would be having an alternate route with a deadend containing a colour that the player needs to go pick up, then platform back, backtracking to the location in which they need to use the colour on in order to progress.

3. **Create a novel hybrid mix of 2D Platforming with Puzzle components**

Clipping Mask is aiming to combine aspects of 2D platformers with puzzle aspects commonly found in 3D puzzle games. In that vein, the game aims to achieve a harmonious mix of mechanics and levels, able to captivate fans of both of the aforementioned genres, whilst contributing to advancements and introduction of novel concepts over contemporary games in the 2D platformer genre.

3.4 Core Gameplay Loops

In terms of Core Loops, Clipping **Mask**'s gameplay can be broken up in the classic *Primary*, *Secondary* and *Tertiary* paradigm. To elaborate upon this:

- ***Primary Gameplay Loops***
    - Describes the moment-to-moment gameplay that the player experiences. These are the actions and objectives that the player will be doing most often (usually each second or each couple of seconds).
    - For **Clipping Mask** this consists in utilizing the movement mechanics to continuously traverse a level as well as quickly making use of the *Clipping Mask Power* to solve reactionary/less

complex puzzles or simply analyzing the level to get a better bearing in order to solve harder puzzles.

- ***Secondary Gameplay Loops***
  - ○ Describes what the player is trying to accomplish (and how they accomplish it) in a longer time frame than the Primary Gameplay Loop (usually minute to minute or couple of minutes).
  - ○ For **Clipping Mask** this usually consists in reaching the end of a level and completing it, however, some more complex puzzles may require the player to make some preparations (e.g bringing a colour all the way from the start of the level to the end) and as such, may also be considered part of the Secondary Gameplay Loop.

- ***Tertiary Gameplay Loops***
  - ○ Describes the longer term and overarching goals that the player is trying to accomplish.
  - ○ In **Clipping Mask**, the Tertiary Gameplay Loop consists in completing an entire set of levels and reaching the next narrative beat as well as being presented with new colours and complex puzzles.

Succinctly, the player will be constantly utilizing their movement mechanics and the *Clipping Mask Power* in order to solve puzzles and traverse each level. At the end of each level they get immediately transported to the start of the next one or, if they're at the end of the set of levels, they get presented with a story interlude, after which they get transported to the start of the next set of levels, introducing new colours or more challenges. This behaviour is illustrated in the image below.
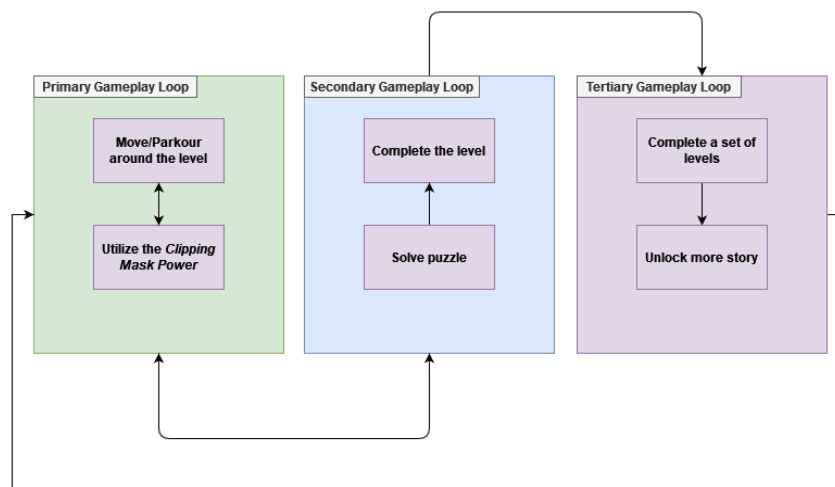
Img 3.4.1 - A simplified explanation of **Clipping Mask**'s gameplay loops.

3.5 Target Audience & Genre

As aforementioned, **Clipping Mask** is a **2D Puzzle Platformer** hybrid incorporating aspects from traditional 2D platformers such as the movement and challenging platforming sections, with aspects commonly found in 3D puzzle games where the player must examine their surroundings in order to think out how to progress through the level.

With that in mind, **Clipping Mask** is aiming to captivate an audience of people who are:

1. **2D platformer games enthusiasts** who enjoy challenging levels that need to be surpassed through the process of mastering movement and mechanical skills

2. **Puzzle game enthusiasts** who enjoy challenging levels that need to be passed through logic, and enjoy games that require imagination, creativity and thought to overcome obstacles and levels.

Whilst not directly appealing to either casual or hardcore audience, the game will provide both easier and more challenging levels in the hopes of appealing to both types. Whilst the game will be able to be speedrun and completed through the usage of great mechanical skill and memorization (appealing to the more hardcore players), the game will also be played more casually, allowing players to slowly master the mechanics through progressively harder level design (rather than being hard from the start) and offering skippable story beats for players looking for a more relaxed experience.

In terms of complexity, it is expected that at first the combination of movement plus the *Clipping Mask* mechanic may be a bit jarring, but levels are designed to slowly and progressively teach the player on how to use these abilities in tandem, being expected that by the end of the game, the player will have mastered their usage.

Using Bartle's Taxonomy, **Clipping Mask** is aiming to captivate the **Achievers** class of players. Due to the fact that, through the usage of the *Clipping Mask* mechanic and movement mechanics, the player will be able to directly alter their environment and surpass challenging puzzles and sections, the team hopes to leave players with a feeling of achievement after each level.

3.6 Control Scheme

Starting with the PC platform (the primary target platform), the game's controls will employ a combination of keyboard and mouse as detailed in the following proposed control scheme list:

- **Movement:**
    - **A** - Move left.
    - **D** - Move right
    - **LShift** - Dash forward
    - **Spacebar** - Jump

    - **Holding A against a wall on the left** - Wall Slide
    - **Holding D against a wall on the right** - Wall Slide
    - **Holding A + Spacebar against a wall on the left** - Wall Jump
    - **Holding D + Spacebar against a wall on the right** - Wall Jump

- **Clipping Mask Power:**
    - **Mouse Movement** - Moving the Clipping Mask Power Area
    - **Mouse Left Click** - Copies color of the object behind the Clipping Mask Power Area if no colour has yet been copied. Otherwise pastes color stored in the Clipping Mask Power Area into the object behind

    - **Mouse Right Click** - If a colour has been stored in the Clipping Mask Power Area it is discarded

The usage of mouse + keyboard in tandem might be jarring at first and as such, the initial levels should be wary of this. Introductory level design should present puzzles which can be solved calmly, without the need to mix movement and the Clipping Mask Power at the same time, in order to allow the player to get familiar with both the movement and the Clipping Mask mechanics. As levels get harder, puzzles requiring tighter timings or usage of movement plus copying or pasting colours may be implemented as it is assumed that if the player has reached that point they're already familiar with the game's core controls.

It should be noted that with some adaptation these controls could (and will) be translated into the conventional controllers (e.g left analog to move the player, right to move the mask and the face buttons to perform jumps, dashes and copying/paste colours). Aim assist to control the mask (making it snap to nearby intractable objects) will be a necessity due to the inherent lesser accuracy for

aiming when using analog sticks as opposed to a mouse. Following is the planned controller control scheme (note the formatting: PlayStation/Xbox/Nintendo Switch):

- **Movement:**
    - **Left Analog Stick** - Move Left/Right
    - **Square/X/Y Button** - Dash forward
    - **X/A/B Button** - Jump

    - **Left Analog Stick against a wall on the left** - Wall Slide
    - **Left Analog Stick against a wall on the right** - Wall Slide
    - **Left Analog Stick + Jump Button against a wall on the left** - Wall Jump
    - **Left Analog Stick + Jump Button against a wall on the right** - Wall Jump

- **Clipping Mask Power:**
    - **Right Analog Stick** - Moving the Clipping Mask Power Area
    - **L1/LB/L** - Copies color of the object behind the Clipping Mask Power Area if no colour has yet been copied. Otherwise pastes color stored in the Clipping Mask Power Area into the object behind
    - **R1/RB/R** - If a colour has been stored in the Clipping Mask Power Area it is discarded

3.7 Player Accessibility

As the game highly relies on the usage of colours to properly identify the properties of each intractable object within the level, extra care will have to be put into making sure the game is accessible to the different forms of **Color Blindness**. Proper settings will have to be implemented altering the colours to make them identifiable by the most common types of this disability. Additionally, each colour should also have associated with it a different symbol pattern that will overlay the object, alongside its colour tint.

3.8 Player Motivation, Hooks & Progression

The main motivation for the player to progress through the game will be twofold.

Firstly there's the story component present in **Clipping Mask**. This is further explained in the proceeding sections, but due to how the game is structured, new

story beats are presented after each set of levels is completed, with a brief story interlude being shown at that time. From the get go the player is presented with the premise "You have been locked within a temple and now must escape", with it acting as a call to action for the player to help set the protagonist free from their current situation.

Secondly, the player should feel motivated to continue progressing just for the sake of getting to the next level. Relying on the level design and core mechanics, each level of **Clipping Mask** should give the player a feeling of achievement after overcoming the presented challenges. Moreso, they should be hard enough to invoke that sense of achievement, but not frustrating to the point that the player will wish to quit. Besides this levels should be short and digestible in order to entice the player to complete "just another level", hence stringing them along through the duration of the game. The variety and combination of platforming challenges, and puzzles presented in the levels must keep the player enticed and wishing to come back to see what the game might throw at them next.

3.9 Target Platforms

Clipping Mask is being primarily developed for the PC platform, aiming for releases in all major digital storefronts - Steam, Epic Games Store, GoodOldGames and Humble Store. This is being done due to the overall popularity of the Indie market, and more specifically the Indie 2D platformer market, present within this platform.

The team is also aiming to publish the game on all major, current generation home consoles - Playstation 5, Xbox Series X/S and Nintendo Switch - for increased reach and additional possible avenues of revenue and since, due to the technologies used, porting the game should not be too arduous of a task. The Nintendo Switch market in particular is notorious for fostering games similar to **Clipping Mask**, and as such, it is expected that the game should be well received within the Nintendo eShop marketplace.

When talking about player progression it's important to make the distinction between player and character progression, with the latter being how the character gets stronger and changes over time and the aforementioned about how the player progresses in terms of knowledge and familiarity.

In **Clipping Mask** there won't be any character progression, in the sense that the player will have access to all movement mechanics and the *Clipping Mask Power* right from the start (save for a tutorial level in which the character will still not have

acquired the mask). As such, player progression mostly comes from the increased familiarity that the player will gain with the *Clipping Mask Power*. This familiarity will come as a result of experiencing and experimenting with colours in earlier levels, as challenges get more and more complex. This is further explored in the following sections.

4 Competition Analysis

This chapter contains some of the main sources of inspiration for **Clipping Mask**, alongside providing a succinct explanation as to how this project aims to innovate on the formulas provided by said inspirations.

4.1 Similar Games & Inspiration

There are dozens of 2D platformers that have been developed throughout the recent years, with a lot of them having managed to release to much critical acclaim. With this being said, there are four specific games and one movie series from which **Clipping Mask** draws inspiration upon. It should be noted that the games presented serve not only as inspiration, but also showcase some of the competition **Clipping Mask** will face.

- **Celeste** (Game)
  - **Celeste** is a 2D pixel art platformer released in 2018 by *Extremely OK Games.* In this game the player takes control of a young girl named Madeline who is attempting to climb all the way to the top of Mount Celeste

  - The game is structured in a level-set way in the sense that the gameplay takes place in a succession of levels, broken up by interludes of story moments. The player is allowed to move, jump, wall jump, wall slide and dash in 8 different directions.

  - The game received several critical acclaim for its emotional story, themes, soundtrack and many other aspects.

  - **Clipping Mask** aims to mainly draw upon Celeste's level structure, level design and overall aesthetics. Whilst Celeste's story deserves (and has received) many praises, it is not something **Clipping Mask** aims to replicate, neither in impactfulness nor theme.
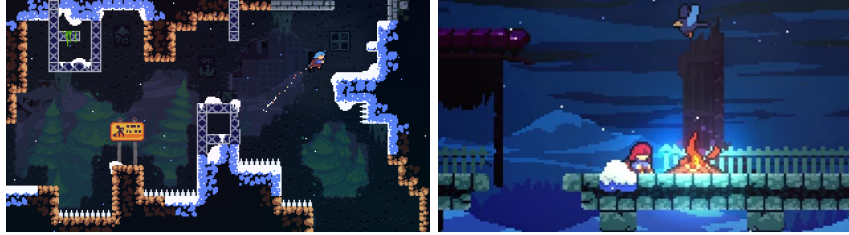
Img 4.1.1 - Two screenshots of the videogame Celeste capturing the level design and overall aesthetics

- **Super Meat Boy** (Game)
  - **Super Meat Boy** is a 2D platform game released in 2012 by Team Meat, having been designed by Edmund McMillen.

  - The game is structured in different worlds, each encompassing a plethora of levels. At the final level of each world the player must face a boss before they're allowed to progress. The player can solemnly walk, run, jump, wall slide and wall jump. Both the complexity of the game and its infamous hard difficulty come from the level design, introduction of new and more diverse level elements (fans which proppell the player, new enemies, keys that unlock doors and so on).

  - **Clipping Mask** is not trying to get the same reputation that Super Meat Boy garnered in terms of difficulty. Instead, the team is inspired by this game's movement mechanics, their tightness and overall feel.
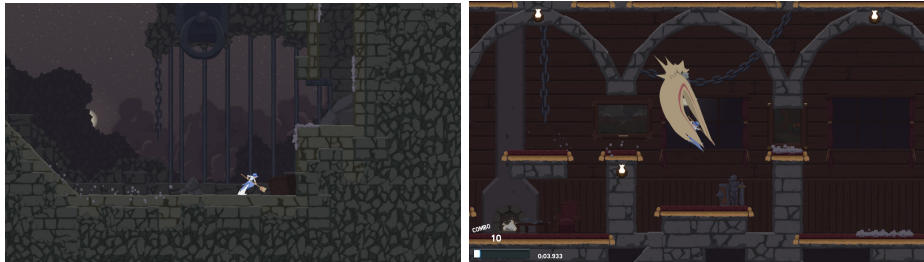

Img 4.1.2 - Two screenshots of the videogame Super Meat Boy, showcasing some of the level design, mechanics (wall sliding) and how levels get progressively more complicated by the addition of more and newer traps

- **Dustforce** (Game)
 - **Dustforce** is a 2D platformer released in 2012 by Hitbox Team.

○ The game provides the player with short levels which are designed to be completed as fast as possible in a "speedrun" kind of way. As such the game offers very tight controls and heavily focuses on its movement mechanics, therefore directing the player to master them.

○ **Clipping Mask** is similar to Dustforce in the sense that levels will also be relatively short but very dense with puzzles and platforming challenges. The difference will stand in the fact that levels in Dustforce are not meant to kill the player or offer much in the sense of puzzles/challenges. Instead the challenge in Dustforce comes from trying to complete levels as fast as possible and climbing the leaderboards by finishing them in as little time as possible.

Img 4.1.3 - Two screenshots of the videogame Dustforce

● **Portal** (Game)
   ○ **Portal** is a 3D puzzle platform game published in 2007 having been developed by Valve.

   ○ In this game the player is armed with a portal gun capable of shooting two connected portals. Using this gun they must complete each set of levels through a combination of analyzing the level and proficiently timing their usage of the portal gun.

   ○ The similarities between Portal and **Clipping Mask** come from the fact that both games arm the player with a powerful tool which they must use to traverse each level. Moreover, both games require the player to explore the level and the options available in order to puzzle out in what way they must utilize their power in order to complete the level. However, besides being set in a 2D rather than 3D environment, **Clipping Mask** will mix this type of gameplay with

tight and precise platforming sections and gameplay requiring mechanical skill alongside logical capabilities.
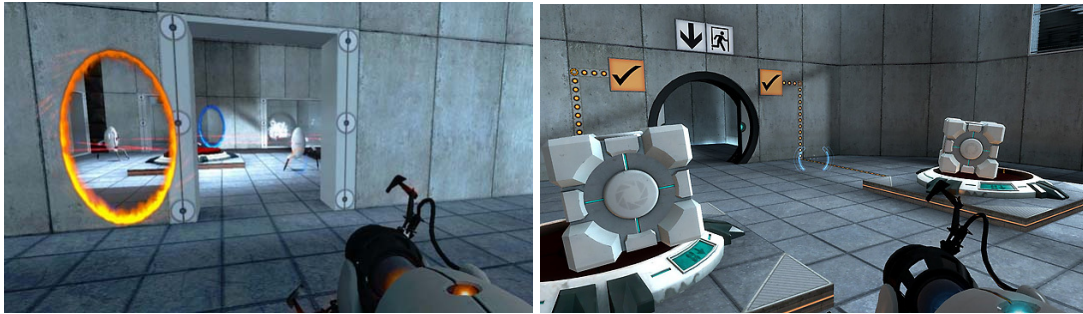
Img 4.1.4 - Two screenshots of the videogame Portal

- **Indiana Jones** (Movie series)
  - **Indiana Jones** is a movie series currently encompassing 4 different movies.

  - During these films the audience follows the adventures of an archeologist named Henry Jones as they visit new locations around the world, finding new (dangerous) artifacts and fending off against villains.

  - **Clipping Mask** is drawing upon the Indiana Jones movies for inspiration mainly in regards to story, theme and aesthetics, aiming to replicate the feeling of spelunking ancient tombs that these movies transmit. Additionally, the team has also looked into these movies for traps, enemies and art ideas.

4.2 Game Value & Innovation

As aforementioned, 2D Platformers have become a widespread genre, especially within the Indie market. As such, **Clipping Mask** must, evidently, provide a unique twist on the genre for it to be a worthwhile development.

After analysis, the team has concluded that, whilst many of the games within this genre try to stand out either through story, difficulty infamy or uniqueness in art style they usually present the same movement mechanics (with certain twists like the introduction of dashes or other powers) and similar level design. There are,

however, not many games that provide a mix of platforming mixed with puzzle solving elements.

Whilst games like this exist in the 3D perspective, there haven't been many efforts to try to implement and mix these mechanics with the tightness of controls, mechanical platforming skill and presentation of classic 2D Platformers. As such, through the introduction of the novel *Clipping Mask Power* the team aims to be able to create levels that offer a refreshing mix of mechanical skill, through the tight platforming of contemporary titles, with puzzle solving challenges.

Moreso, there aren't many games that allow the player to physically alter the properties of the levels. In most contemporary titles levels are presented as static maps which the player can influence in a very limited way, usually by pressing buttons or levers to open/close areas. The team aims to challenge these conventions by allowing the players to continuously alter the properties of objects within the level to their advantage in a more dynamic way, through the usage of the *Clipping Mask Power*.

5 Game World

Throughout this section the document goes into detail on aspects correlated to the game's story, setting and overall aesthetics.

5.1 Story & Setting

The planned, first draft of Clipping Mask's story is as follows:

"The player takes control of a witty, world famous archeologist in his new venture to unearth a newly dug temple in the middle of the amazon forest. Always preferring to work alone, thinking himself above all others, our nameless protagonist braves forth the temple. Avoiding traps and crumbling platforms he eventually finds himself in a wide open room with a single pedestal in the middle. Atop this pedestal lies an odd looking mask. One with markings our protagonist had never seen before.

Never one to leave potential riches and archeological finds behind, our protagonist doesn't think twice before reaching for the mask. As soon as he touches it however, he feels a surge of power explode outward from the pillar as the mask starts floating above it. Giving him no time to react the mask dashes forward and latches itself into him as his vision goes dark.

He wakes up in an estranged room and begins hearing voices in his head. The voice of the cursed mask. It informs him that the Clipping Mask, as dubbed by the ancients, was a powerful relic created by a civilization who used to rule the land surrounding the temple. But as more people sought to wield its immense power, it was locked away with a curse being placed on top of it, transporting any who dare reach for it deeper within the earth into a dangerous and secret temple. The mask also informs the player that with its power, the player is able to alter the properties of reality itself, shifting the behaviours of objects in the environment to his advantage. Now armed with knowledge, and the power of the Clipping Mask our archeologist must set out and escape the temple. "

Img 5.1.1 - Example of an in-game cutscene in which the player finds the Clipping Mask

Setting wise, the entirety of **Clipping Mask** takes place in an ancient abandoned temple setting. The overarching plot of the game is that the player takes control of an archeologist, unearthing the secrets of a newly dug out temple in an undisclosed location. This setting is represented, not only in the overall aesthetic of the game, but also in the **Clipping Mask** itself - a strange artifact that the player picked up which immediately stuck to their face, granting them the *Clipping Mask Power* but also cursing them by teleporting them deeper within the temple. The player must now seek to escape the wicked traps and enemies sealed within and break free of the clinging *Clipping Mask*.


Img 5.1.2 - The main menu art of the game showcasing the protagonist in front of the temple ruins he's about to delve into

5.2 Characters & Objects

There are 2 main characters the player will interact with in **Clipping Mask**.

Firstly there's the unnamed **protagonist** who the player directly controls. The protagonist's character design pays homage to the Indiana Jones character, as aforementioned in section 4.1, donning a similar set of clothes and colour palette. Throughout the dialogue and story bits of the game the player will be able to deduce some of the protagonist's character traits. Mainly their confident, witty nature, conveying an air of experience in the field of temple dwelling and spelunking.

A noteworthy aspect of the protagonist is that their character sprite changes after the player obtains the Clipping Mask. At the beginning of the game the character sprite clearly shows the protagonist's face and beard, whilst after the Clipping Mask is obtained, the protagonist's face becomes obscured since the mask has latched onto it.
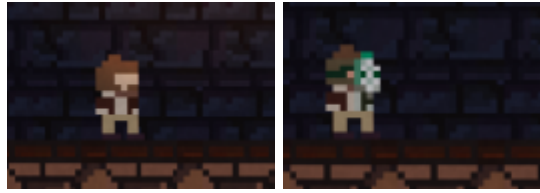
Img 5.2.1 - The main protagonist before (left) and after (right) the player's obtained the Clipping Mask

Besides the protagonist, the other entity the player will be interacting with is the entitled **Clipping Mask**. The mask progressively throughout the story reveals to the protagonist (and the player) that they were created by an ancient civilization eons ago. This civilization was heavily invested in art and culture and sought to forge a manner of copying and pasting their art from one object onto another in order to easily create copies of their art pieces. However, besides copying the colour the mask was also able to copy the properties of objects and as such many sought to steal and use it for nefarious gains. As such the mask was locked deep within the temple. Whilst blessed with sentience the mask showcases a cold, mechanical personality since they're just a cursed object rather than actual being. They offer guidance to the player and serve as a vassal for lore/story exposition and tutorializing.


Img 5.2.2 - The Clipping Mask displayed on top its altar

The objects the player finds throughout the temple serve both to be aesthetically pleasing, but to also expose some of the culture of the ancient civilization that created the mask. One core aspect of this is the "Canvas Crystals" in the background. These, as the mask explains, were what the ancient civilization used to draw on, and the main object the mask was created to act upon (it was only later that the civilization discovered the mask could also change objects other than the Canvas Crystals). Gameplay wise they serve as a placeholder for the player to copy and paste colours into without being affected by them (since they're in the background the player character doesn't actually collide with them).

Img 5.2.3 - Example of a Blue Canvas Crystal

The temple also contains hazards such as enemies - Snakes and Bats - and spikes, alongside wooden platforms, rubble and torches. All these objects were designed and drawn to remote the player to the "temple" aesthetic, immersing the player within the game world.
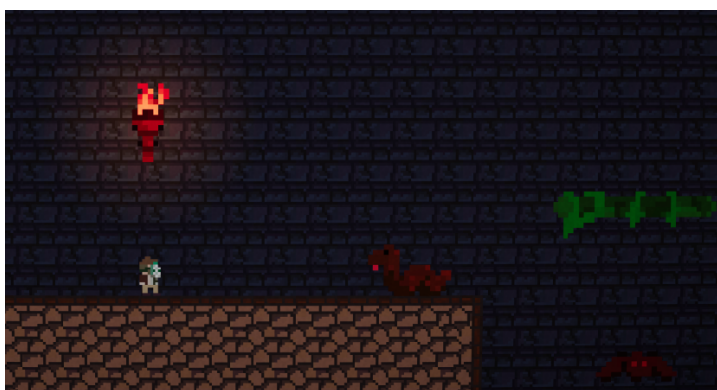

Img 5.2.4 - An image containing a green platform, a red snake, a red bat and a torch on the wall

5.3 Presentation

In terms of presentation the game will be played in a 2D "front-facing" perspective, akin to other similar games of the genre. The game will employ 16-bit pixel art as its predominant artstyle in order to invoke a sense of nostalgia by replicating platformers of the 1980s whilst also featuring modern lighting and particle effects to make it stand out and make the art pop. Aesthetics-wise the game will be aiming to invoke the feeling of unearthing and spelunking an ancient temple and as such, all art will be directed towards that effect through the usage of cobblestone walls, enemies like scorpions and snakes, torches, wooden platforms and so on.

As for the story, it will be presented through the usage of ingame cutscenes animated within the engine in order to never take the player away from the experience. These cutscenes will mostly consist of dialogue between the player and the mask which the player will be able to skip if they wish to do so.
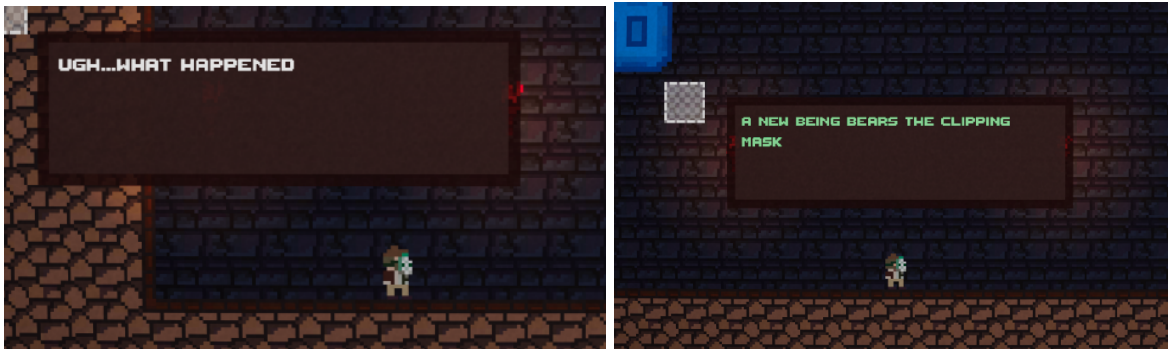
Img 5.3.1 - Example of how dialogue is presented in the game with different colours being used to indicate different speakers.

An important thing to note is that the game will have to be presented in a way that the idea of using a Clipping Mask is not lost. A Clipping Mask in digital art is defined as *"a group of layers to which a mask is applied where the base layer defines the visible boundaries of the entire group"*. This abstract idea is mainly showcased through gameplay, the player is effectively copying a colour from an object (i.e copying a layer from the environment), and superimposing it on another by pasting it on another object's boundaries. Artistically, the Clipping Mask layer will be shown at all times as a dotted square floating at the mouse's position, reminding the player of their ability. When a colour is copied (by hovering this layer on top of an object and clicking), the square changes colour to indicate that our Clipping Mask Layer is now ready to be applied into another base layer (i.e object). Furthermore the affected object visibly changes its tint to visually showcase how a new mask has been copied on top of it, masking its original colour, substituting it with a new one.

The abstract Clipping Mask idea is artistically rendered as aforementioned but it also carries some narrative weight. In the lore, this power the player acquires comes from an ancient sentient mask they pick up. As the story goes on the mask explains to the player how it was crafted eons ago by an ancient civilization's group of artists who wished to more easily create copies of their art for distribution, and as such, imbued the mask with the power to copy properties (i.e colours) from one object into another, masking them in the colours of the first object.

Img 5.3.2 - Ingame representation of the "Clipping Mask Power" correlating to the "Digital Art" abstract idea by alluding to the common "Empty Layer" pattern used in many of these programs.

In terms of **UI** the game takes a minimalist approach due to the fact that there aren't many aspects that need to be showcased. Since the game doesn't employ a "lives system", the only real information the player needs presented in the UI is the current number of mask usages and the number of max mask usages. Moreover, the game also tells the player if they've gone over the limit by changing the colour of this display to red.

Img 5.3.3 - The ingame UI showing the player their mask usages.

The player can also at any time pull up an options menu pausing the player's movements. In this level they can exit the game, change options such as the sound and music volume, or (and most importantly) restart the level.

5.4 Game Structure & Progression

The game will have multiple levels that will be played inside of an ancient temple. In order to advance to the further levels, the player has to complete the previous ones by traveling from the start of the level to the end. Levels are conjoined into level sets and at the end of each set of levels the player is given a brief interlude with some story and lore through an in-game cutscene.

It should also be noted that a tutorial level set taking place before the character acquires the Clipping Mask will also be used in order to allow the player to get familiarized with the movement mechanics before having to also incorporate the *Clipping Mask Power*. As such the overall game structure is as such:

- **Tutorial Level Set**
    - Character is yet to gain access to the Clipping Mask
- **First Story Interlude**
    - Character acquires the Clipping Mask
- **Level Set**
- **Story Interlude**
- **Level Set**
- **Story Interlude**
- … (repeating)

Progress is saved automatically after each level so the player shouldn't feel forced to complete an entire level set before having the chance to pause or quit.

When talking about **player progression** it's important to make the distinction between player and character progression, with the latter being how the character gets stronger and changes over time and the aforementioned about how the player progresses in terms of knowledge and familiarity.

In **Clipping Mask** there won't be any character progression, in the sense that the player will have access to all movement mechanics and the *Clipping Mask Power* right from the start (save for a tutorial level in which the character will still not have acquired the mask). As such, player progression mostly comes from the increased familiarity that the player will gain with the *Clipping Mask Power*. This familiarity will come as a result of experiencing and experimenting with colours in earlier levels, as challenges get more and more complex.

5.5 Levels & Level Design

As aforementioned in section 5.4, levels are organized into sets, with progress being stored after each is completed. Each level contains a combination of puzzles, challenging the player's puzzle solving ability and their usage of the *Clipping Mask* mechanic and platforming challenges in which they must demonstrate their mechanical skills and familiarity with the game's movement mechanics.

Should a player die within a level they will be swiftly respawned back at the start of the level. As such, **each level will be designed to be completable in a few short minutes**, foregoing lengthy levels in favor of shorter, more condensed levels which won't leave the player too frustrated in the eventuality that they must retry them. This will also lead to the player being more free to experiment, make mistakes and reach conclusions as to how they should be traversing the level and using their powers.

Each level allows for a limited number of *Clipping Mask* power usages (as stated in section 3.2.2). This was done to prevent the player from simply bypassing certain challenges by completely removing the danger from their surroundings (e.g painting each spike on the floor purple so they could easily traverse it without having to platform their way through it) and it was decided upon after **initial play testing** where players managed to complete most levels by simply removing all hazards

and bypassing certain platforming challenges. However, it should be noted that 2 factors were taken into consideration:

1. First, the level doesn't instantly kill the player if their usage of the mask goes over the allowed number. Instead, this only happens when the player crosses the exit door. The team deliberated about this, but reached the conclusion that the player should be able to keep exploring the level without the restriction in order to learn the level, try different things, and not have to go back to the beginning each time they went over the mask usage limit. This way the player can come up with a solution, restart the level when they think they've found the solution (either by manually restarting it by clicking the button on the menu, or by going to the exit door with a surpassed limit of mask usages), and attempt to complete it using the solution they thought of.

2. Second, (on most levels) the player will be allowed a number of mask usages higher than is necessary to complete the level (as planned by the designers). This way they can still be creative and bypass certain obstacles by removing hazards using the Clipping Mask Power, whilst not being allowed to completely ignore all challenges (e.g the player can paint a spike purple to bypass it, making a jump slightly easier, but they can't paint all of them and completely ignore the challenge).

It should also be mentioned that not all levels will be "linear" in the sense that the player will always be moving from left to right or that the entry will always be on the left and the exit on the right. Instead, levels may require the player to do some backtracking or move through alternative paths to get colours, whilst also incorporating a lot of verticality. The team is aiming to add a sense of exploration to the levels in order to provide for interesting challenges whilst also complementing the whole spelunking/unearthing a temple setting.
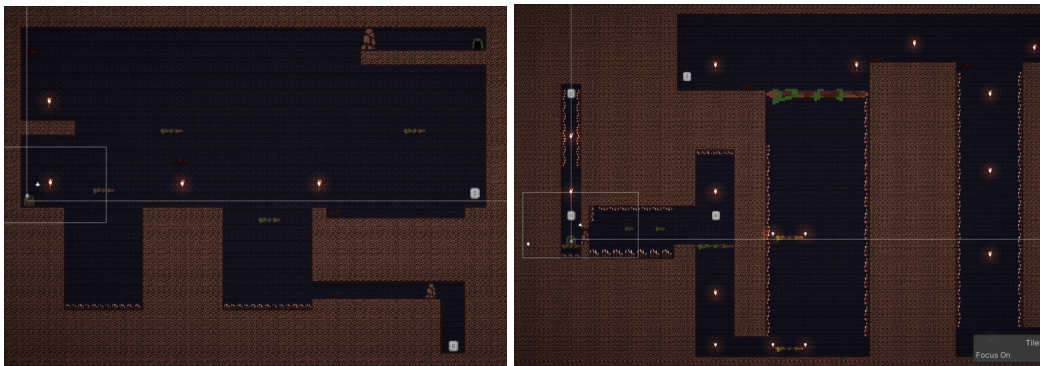
Img 5.5.1 - Two example levels. On the left the player needs to actually do some exploration of the alternative paths in order to be able to get the necessary colours to complete the level, focusing on

the puzzle aspect of the game. On the right the level follows a more linear structure with minimal exploration, focusing more on harder platforming.

When talking about the level complexity progression it's important to mentioning that a general "rule of thumb" will be used to guide the level design in terms of the introduction of the properties/colours:

1. Initial level with a simple puzzle using only the new colour
2. More complex level still using only the new colour or mixing it with one other the player is already familiar with
3. Most complex level in which the player will have to use the new colour in combination with any number of previous familiar colours

After such introduction the player should be readily familiarized with the new colour and able to comfortably use it in conjunction with the others or new ones.

After each level or individual puzzle the player should be left with a sense of accomplishment and as such, the level design will have to thread the thin line between challenging but not overtly punishing. The game should never make the player feel too frustrated, but puzzles (especially more complex ones) shouldn't be so easy that the player will find them boring, samey or solvable without any logical thinking.

Story interludes will also serve as a good resting point for the player. During these moments they should be able to rest, stop thinking about puzzle solving for a while whilst immersing themselves in the lore and the story. These checkpoints also provide some respite and good points of closure, should the player wish to take a break.

6 Production Details

Throughout this section, the document will go over technical, implementation aspects of **Clipping Mask**. More specifically, it will mention the desired team composition, utilized tech, development plan, costs and expected revenue for this project.

6.1 Team Composition

Up until this point of conception, **Clipping Mask** has been in development by a team of 4 people acting as programmers, designers and artists at the same time. Taking into account **Clipping Mask**'s genre (2D puzzle platformer) complexity, the ideal team composition would be as follows:

- **1 Dedicated General Programmers**
  - This person would be responsible for programming the gameplay of Clipping Mask, alongside implementing the game's story and integrating all art/sound assets into the game
  - The team believes 1 Generalist Programmer would suffice due to the fact that all core gameplay mechanics have already been implemented into the core build of the game and as such, most of the rest of the team could be allocated into other areas. Moreover, 2D puzzle platformers are notoriously low complexity games in terms of programming implementation with most hardships coming from developing a robust character controller and camera system (which have already been developed up to an acceptable stage).

- **2 Dedicated Level Designers/Programmers**
  - Since level design plays a big role in how the game will feel and the type of experience the player will go through, the team has deemed it vital to have 2 dedicated personnel work on creating and implementing well-built, balanced but challenging levels.

- **1-2 Artists**
  - The art developed up until this point is serviceable but not ideal. The team would like to have a dedicated pixel art artist capable of bringing forward the game's full potential.
  - Ideally, it would be preferable to have more than one artist in order to divide the work without overworking either of them, however,

should the budget not allow, the team believes 1 artist would suffice to build all necessary assets. This conclusion comes from the fact that most assets can be reused and recoloured for variety alongside the fact that 16-bit pixel art tends to be fast to produce.

- **1 Sound Designer**
  - It would be ideal to have a dedicated sound designer capable of creating music befitting of the game's aesthetic and contributing to the somnoplasty.

In terms of story writing the team has forfeited having a dedicated writer instead opting to have some of the team members double down as writers. This is a fairly common practice for smaller indie teams in order to cut down costs associated with hiring a dedicated employee for writing.

6.2 Tech Feasibility

This subsection serves a succinct explanation of the major technologies that will allow for the development of the game **Clipping Mask**.

- **Unity**
  In terms of game engine, **Clipping Mask** will be developed in Unity using version 2020.3.20f1. This engine was chosen for two main reasons. First, and foremost, is the fact that this is a free piece of software. Secondly, some members in the programming development team have already had a fair share of experience using this engine and the rest of the members will use this game engine in other courses.

- **Aseprite**
  Aseprite is a powerful 2D digital drawing and animation tool primarily developed to facilitate the creation of pixel art (although it can be used for other art styles as well). This tool will be used to create all art and animations for **Clipping Mask**.

6.3 Current State & Future Development Plan

Currently the game could be considered as being in a **Playable Proof of Concept** stage. The game has placeholder art, a relatively fledged out movement system, an implemented *Clipping Mask* mechanic and some levels showcase some of the

game's potential. Additionally the game also contains some dialogue/story beats introducing the player to the setting/world and serving as an introductory tutorial to the game's mechanics.

In terms of future work, besides the obvious adding of many **more levels**, the game also needs to implement a more robust **cutscene system** allowing for more engaging and immersive story beats. The **art** also needs to be remade in higher quality (especially the animations) since the current art was intended to be used as placeholder. Finally the current **music** and **sound effects** were graciously provided for free from https://www.zapsplat.com/ so new music would need to be composed and more SFX recorded. With the added development time, **gameplay aspects** such as the camera and character controller could also be polished and improved upon, alongside adding more gameplay elements in the form of new colours for the player to use with the Clipping Mask Power.

All in all, taking the current state of the game into consideration, assuming the team composition detailed in section 6.2 were achieved, it would be expected that the game could be completed within the 1 year time frame.

In terms of organization it should be noted that the team will opt for a more *Agile-SCRUM* development, holding a weekly meeting every wednesday in order for everyone to know what everyone else is working on and what tasks are being completed. This will replace the current system of a simple *Kanban* board that was pseudo-forced due to how quickly the alpha had to be put together. Up until now, the team had been using *Trello* for task management, but will be swapping out to *Jira* which offers a more robust organization control for longer-term projects. Additionally, the team will be working daily shifts from 10am to 6pm, excluding weekends and will be granted 2 weeks vacation during christmas and new year's.

6.4 Planned Budget & Expenditures

Firstly, when discussing development costs, the entire team of developers and artists will have to be fully maintained and supported. Taking into account Portuguese Salaries, that there is one generalist game programmer (Avg. Yearly Pay of €25,000 https://www.salaryexpert.com/salary/job/game-developer/portugal), two level designers (Avg. Yearly Pay of €23,000, https://www.salaryexpert.com/salary/job/game-designer/portugal), one 2D artist (Avg. Yearly Pay of €20,000 https://www.salaryexpert.com/salary/job/2d-animator/portugal/porto) and one sound designer (Avg. Yearly Pay of

€20,000,https://www.salaryexpert.com/salary/job/sound-designer/portugal) and the fact that the game is expected to have a **~1-year development cycle** it is expected that the game will cost **€88,000** salary-wise up-until launch.

The game will also have to be meticulously tested, however, in an effort to cut costs, the team will rely solemnly on friends and family for this effort. Furthermore, the team will opt for remote work rather than renting out a physical office location to cut costs whilst ensuring that communication within the team is consistent via text chats and regular voice meetings.

In terms of software costs, all main tools used are free - Unity & Aseprite. However it should be noted that Unity obligates the purchasing of a licence depending on the revenue the company has achieved in the previous 12 months. Should the game be developed within the 1 year time frame without securing publishing, then the free version can be utilized (taking into account that if the game makes more than 100,000$ through its first year, the subscription will have to be upgraded into a paid version in order for updates to be dispatched). If a publishing deal is struck that surpasses the 100,000$ maximum revenue established by Unity, then one of the paid plans will have to be chosen depending on the total funding. Overall the costs could range from ~2,000$ to ~20,000$ per year.

	Personal Free Start creating with the free version of Unity Get started	**Plus** $399 /yr per seat More functionality and resources to power your projects Choose plan	**Pro** $1,800 /yr per seat Complete solution for professionals to create and operate Choose plan	**Enterprise** $4,000 /mo per 20 seats Success at scale for large organizations with ambitious goals Choose plan
	Are you a student? Get the free Student plan			For large teams
ⓘ Financial eligibility	Eligible if revenue or funding is less than $100K in the last 12 months	Eligible if revenue or funding is less than $200K in the last 12 months	If revenue or funding is greater than $200K in the last 12 months, you are required to use Pro or Enterprise	Minimum 20 seats. If revenue or funding is greater than $200K in the last 12 months, you are required to use Pro or Enterprise

Img 6.4.1 - Unity's subscription plans

6.5 Revenue Sources, Marketing Channels & Publishing

In terms of revenue, and after analyzing similar games sold in the 2D Indie Platformer genre, the team has decided to go with the **pay-once** model with the game being initially sold for **19,99€** at launch, with discounts being applied on appropriate sales dropping the game as far as 9,99€. After considering selling the game for 5.99€, 9.99€ and 19.99€, the team reached the conclusion that 19,99€ ended up being the sweet spot between offering appropriate remuneration to

compensate the development costs, whilst still being a fair price for players taking into account the complexity and overall content of the game.

Additionally, besides updates containing bug fixes and other quality of life improvements, **DLC** content could be sold, adding new levels or features such as level creation tools, alternate stories, amongst others, hence increasing the game's longevity and ensuring repeating customers.

For additional revenue to **support the team** during development, and to **help promote the game**, the team will seek out a publisher. After some initial research the team has found two apt publishers - **Humble Games** (https://www.humblegames.com/) and **Devolver Digital** (https://www.devolverdigital.com/). Both these publishers are well known indie publishers who have led many games to success. Humble Games has the benefit of owning their own digital store which may help with the game's reach, however Devolver does possess a wider reach of influencers and resources. Going with a publisher will not only ease the anxiety of development, giving the team a safety net and someone watching the game's back and giving it a much needed marketing boost and reach, as well as help with potential ports. Both these publishers have a long history of successful launches within the indie marketplace, having published well received and widely successful games in the 2D platformer genre.

Regardless of publisher, the game will be advertised via **Twitter**, **Youtube** and **Twitch** mainly. During **pre-launch**, Twitter and Youtube will serve to post trailers and snippets of gameplay in order to bootstrap the game's marketing campaign. Additionally, the current build of the game could be made available for free on **itch.io** in order to start spreading the reach of the game, as well as offering possible customers a demo version of the game (as has been done with similar games of the genre such as Spelunky and Super Meat Boy). When closer to launch the team, hopefully with the help of a publisher, will reach out well known youtubers and streamers, focusing more in the indie-space but without shying away from approaching more general gameplay content creators, in order to showcase the game on their channels and generate most interest. **Post launch** Twitter will serve as a platform for announcing updates, new content, incoming DLC sneak previews.