

Game Design Document

Lunar Mortis

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Introduction:

Our team has chosen to develop "Lunar-Mortis", A rogue-lite horror designed to challenge gamers with a difficult yet fair world that procedurally generates with every playthrough.

A moon technician awakes from stasis in a hellish nightmare on Moon base Omega. His colleagues dead. Or worse. The moon? Covered with astronaut zombies. Secure and uncover the secrets on the lonely moon. Reclaim Moon base Omega one room at a time.

The game will be a blend of modular levels that borrow the presentation style of a voxel-style game. The graphics shall be a mid-level of detail form of low Poly, so everything looks crystalline. And the combat shall blend resource management with quick decision making.

Market research and planning.

Target demographic:

We do not want to market Lunar Mortis at gamers. In this day and age, the term 'gamer' is very vague and not useful to us at all. We have selected the horror, survival, and action genres as our main target demographic. Zombies is the sub-genre which most people are familiar with and therefore gives people familiarity with the game before even playing it.

Horror remains a very strong genre across all types of media. Such as films and games. People enjoy the thrill of being scared and being on the edge. Popular games such as 'Alien: Isolation' and the 'Resident Evil' series prove that this is an avenue worth chasing.

Survival games are an immensely popular genre. People enjoy keeping their character alive or ensuring survival for multiple characters. When done correctly it gives players a sense of urgency

and depending on the game you can create bonds between players and characters. Top names to grace the survival genre would include 'Minecraft' which has sold over 230 million copies. Or 'Terraria' which has sold over 44 million copies and holds the title for the most positive reviewed game on Steam.

With action being the preferred genre of most gamers according to various gaming blogs, forums, and statistic websites we are comfortable assuming that marketing towards action enjoyers will be very rewarding.

Our sub-genre is zombies, which most people are familiar with. This gives us a platform to build on what our players already know about zombies. Humans are obsessed with death; people do not understand it, and this leaves a big grey area for what happens after death, which is why we believe zombies are popular.

Our game is designed for people ages of 16 and above depending on their region. 16+ is rated for Europe and Germany. 17+ for North America. And 18+ for Oceania, and most Asian countries.

Marketing tools:

To increase the awareness of Lunar Mortis, many different marketing tools will be used to cover all our target demographics.

- Social media such as Facebook, Twitter, Instagram, and TikTok are all free to create accounts on and to post. Posting advertisements on these platforms will probably not provide us with the return we would be looking for. However, it gives us as developers a place to communicate and to share progress on the game and will provide a place for our users to communicate with each other.
- Forums such as Reddit is an incredibly good marketing tool for gamers. People who play games have some point ended up on Reddit. Either searching for help with a technical issue, posting clips or screenshots from games, in-game help and for updates on upcoming games. It is a great place for user-to-user interaction and allows us as developers to communicate with the players and potential players.
- Streaming platforms such as Twitch, YouTube Gaming, and Facebook Gaming are great ways of finding players interested in a specific genre and gives the game a sense of community. Either giving streamers a free key to the game or paying bigger streamers to get involved with the game are effective ways to get the game in front of your target demographic.
- A website for the game is also a particularly good way for users to interact and follow the game. Adding a development blog section can put potential buyers at ease, as they can see work being done to the game in real time and follow along with the work done. A screenshot section along with a trailer will allow players to get invested and provide feedback on that they see. You can also release a demo for the game through the website, this will drive traffic to you directly and provide them with more content for your game.

Our audience

Awareness

Steam is the most successful gaming marketplace. It provides all PC users a free marketplace to browse and purchase games. Their peak concurrent users sit at 26 million, and their monthly users sit at 120 million users.

PlayStation Network holds 46% of the console market and has 102 million monthly users. Xbox holds 25% of the console market, and has 100 million monthly users, with 18 million Game Pass users.

For a future gaming marketplace, Epic Games on the PC will be a good place to think about. It currently has 100 million users. This is currently in closed beta and will be another potential marketplace to sell on.

This brings our total awareness to approximately 342 million users.

Interest

Our listed genres will play a big part in our total interest. We have estimated about 50 million people will be interested in the concept of the game. This is of course an approximation and will vary.

Decision

Through some market research we have concluded that 10% of the 50 million will add the game to their shopping cart. This comes to 5 million on the verge of buying the product.

Action

This is the final part of our equation, 36% of people who have games in their online cart purchase. Leaving us with 1.8 million people as our final number of expected users.

Income

Our initial launch price would be £19.99. This gives us a potential to create £36 million in gross profit. Once the game has been released for a while and when sales start to fall, we can think about having a sale for the game. This encourages those that have it in their cart to press the button and purchase.

Future sources of income

Future sources of income can include going exclusive on Xbox Game Pass or Epic Games. They offer companies an initial sum of money to be exclusive on their platforms. For example, it would mean the game would be free on the Game Pass, but we can still receive all income from other platforms. And Epic Games exclusive products will receive an upfront sum, but only able to be sold on their platform.

4 months after the initial release we also plan to release an expansion pack. In doing this we keep the game fresher for longer, meaning current players have the option for more content and keeping the game relevant. As an estimate, the expansion will cost around £9.99 this could become, depending on how much content gets created or how long the expansion takes to create.

Start-up costs

For our publishing fees, Steam charges £100 to publish a game. PSN requires you to have their dev kit to publish their game which costs £2500. Xbox charges £19 for small scale projects.

Our estimate for start-up fees range from £250k - £500k for 4 people to work on this game for 2 years. This will be due to the staff wages, marketing, researching, and publishing.

We aim to obtain our start-up costs through the means of crowd funding. We can achieve this by posting a compelling sales pitch onto websites such as Kickstarter.

Our preferred method of funding would be the Game Pass. Game Pass pays for development of games, in return for the game to be published for free on Game Pass. This does not affect sales on other platforms in a major way since we can still publish our game on other platforms.

Player objectives and progression.

The core gameplay loop is to explore the unknown, prioritise what locations should become part of the safe zone, and allocate resources to what projects.

Chunk Map:

This section details the various “Chunks” that a standard playthrough will consist of in a straightforward arc. It will not detail any gameplay loops. It can be read like a waterfall diagram but without returning to earlier steps.

Scale Key:

Small: A phase that will last under an hour.

Moderate: A phase that will last several hours.

Large: A phase that will not end until certain criteria are met.

Chunk 1a: Tutorial.

Objective: Chunk 1 is divided into two sections, as it is based on prompts designed to draw a new player into situations that are designed to teach basic game concepts.

Scale: Small.

Chunk 1b: Introduction.

Objective: If the player ignores the prompts designed to start the tutorial, the player will instead be launched into the unscripted world of Lunar Mortis. Players will gather their bearings and determine the best course of action as they begin to clear the rooms that surround the starting location.

Scale: Small.

Chunk 2: Exploration.

Objective: The player will begin to expand their map, learning the structure of their newly generated space base, and learning where early supplies and zombie hordes are located before establishing the start of their safe zone.

Scale: Small.

Chunk 3: Expansion.

Objective: The player will establish their safe zone and begin to grow their territory, while establishing basic supply lines and early defence projects.

Scale: Moderate.

Chunk 4: Thriving.

Objective: The player will begin to coast and enjoy some normalcy within the moon base. Once the game believes the player has reached this point, random catastrophic events will trigger to challenge and damage the prosperity of the safe zone.

Scale: Moderate.

Chunk 5: Conquest.

Objective: The player will rise to the challenge and reorganise their safe zone so that it will be flexible or prepared to handle these catastrophic events. They will not experience the same comfort from the coasting they previously had, but they will endure the hardship.

Scale: Large.

Chunk 6: The Spaceship.

Objective: A world event will trigger, alerting the player to an escape from the moon base. It will be the only safety from the slowly growing horde, leading the player to realise that they will not be able to outlast the zombies, only escape.

Scale: Large.

Chunk 7: Consolidation.

Objective: The player will completely realign their safe zone, resources, and any NPC's they have saved to service the goal of capturing the ship, defending it, and repairing it. This can be considered the end game.

Scale: Large.

Chunk 8: Escape.

Objective: The player escapes when they are ready, deciding who will come, and what sacrifices must be made. The game is completed.

Scale: Small.

Environment, level, and interface design.

Environment and Level

The Lunar Mortis world is set within a lonely damaged and abandoned research station on the surface of a distant moon. The huge lunar base is constructed of corridors and different modular rooms, each one spawned in random positions and having different purposes and functions. Outside is the vast empty lunar surface populated with groups of wondering zombie spacemen. Whilst the player will spend most of their time inside the moon-base they will occasionally have to venture outside onto the lunar surface to gain access to other areas of the base. The outside unlike the modular inside is a more open and a free roam environment, to keep the player from travelling too far away the outside moon is populated by many single roaming zombies and the occasional walking horde which is incredibly deadly to the player especially early on. The player also has an oxygen tank and oxygen levels they must watch which stops them being in no oxygen areas for too long.

Part way through the game the player will have an objective to send out a distress signal out into space, once this is accomplished an unknown spaceship will appear in orbit of the moon and a cut scene will trigger that will shows the ship crash into the moon at the far end of the moon-base. This is a noticeably big, game changing event that changes the map heavily.

Firstly, when the ship crashes its wreckage remains mostly intact. This means a new area and environment is opened for the player to go inside and explore. Inside the ship is hazardous and heavily damaged rooms which are still in the same modular layout of rooms and corridors as the moon base for familiarity, but they all now have an interior spaceship theme to them. This ship is the key for the player to escape and get off the moon as they will have to repair it and use it to fly off the moon.

As well as the ship being a unique environment, the crashing event also changes the current map. The crash causes considerable debris on the moon's surface which contains items and weapons for the player giving them more of a reason to risk the moon's surface during mid and late game.

The rooms in Lunar Mortis will also have power that can be either off or on. The player will want to activate power in all secure areas either with a generator room or with a battery. This power mechanic gives a creepy atmosphere to the game and rooms when the player is moving through areas not yet powered as their vision is limited and everything is much darker.

The Interface

The interface for Lunar Mortis is quite basic but also provides everything needed for the player to go through the game.

In the top right corner of the screen there is a map icon, if clicked by the player it will show a 3D map of all discovered areas, this will also include an icon showing the room types and the status of the room (power, oxygen, damage)

The players HUD will also show bars with show oxygen levels, health levels and equipped weapons.

There will also be 2 more buttons below the map button, one is for the inventory where the player can equip and see different equipment, gear, and weapons. The other button is an operations manual which allows the player to view descriptions of rooms, weapons, zombies, and other things in the game.

Mechanics and AI's

The camera: The player camera in Lunar Mortis is a 3rd person camera but from a slanted distance behind the character, allowing the players to always clearly see the room that they are in and anything around them.

Territory / power: In our game the player will always be able to open a map that will show you the room placement and layout of all rooms you have discovered and seen yet. As the player clears room of zombies those rooms will be marked as clear and safe. Some rooms also require power to use their function. For this, players must find and repair generator rooms to supply power to multiple rooms of the moon base or for single rooms players can move batteries to the room to give it power.

Blocking // damaging doors and rooms: In this game rooms can spawn damaged or be damaged by hordes attempting to break in from outside, this can cause oxygen to be removed from the room giving you limited time inside the room. Doors can also be sealed shut to stop hordes from pushing into safe territory but watch out they could still be there when you unseal that door.

Different types of zombies depending on how damaged the zombies are: In our game there will be another mechanic that can allow zombies to either lose in battle or spawn without certain limbs, this will change their combat style
e.g. Zombies without arms will charge and bite you, zombies without legs will crawl, grab and bit you.

Room types: In our game there will be several types of room to unlock whilst exploring. Rooms will be randomly generated, and each different type of room will help the player in different ways. Some examples:

- Generator room – Can supply power to rooms that you have marked as safe
- Armoury Room – Has many weapons and ammo inside
- Oxygen rooms – Can supply rooms with oxygen
- Maintenance rooms – Contains items and droids to help repair damage to the moon base
- Security room – Has cameras to monitor powered areas of the map, can also use security drones to protect safe areas from hordes

- Medical Room – Has medical supplies in and with power can be used to heal you, also can contain a medical droid that can be repair late game
- Animal testing rooms – these rooms can contain logs but also mutated animal boss zombies the player must defeat
- NPC rooms – The rooms have NPCs locked inside which give the player a mini task to complete. Upon completion the room will open, giving the player a new fully working and operational room with all the contents inside as well as an NPC companion that can help the player when assigned to rooms inside the safe area.
- Puzzle rooms – These rooms contain a puzzle that when completed will give the player rare equipment or weapons
- Scenic rooms – These rooms do not have any special function and can have different aesthetics to them (Bunk rooms, canteen, social areas)

Weapons / equipment: In Lunar Mortis, the player can randomly find weapons, armour and equipment in rooms, the lunar surface and on the corpses of zombies. These can be different tiers from common, uncommon, rare, and legendary and each have different stats. As the play progresses through the game, they have better chances of finding higher tiered items. Items can have bonuses to certain stats and legendary items can have special perks on them (e.g. Every minute if you get hit zombies around you will run away for 2 seconds)

Some examples of weapons:

- Pistol
- Magnum
- Pump action shotgun
- Auto Shotgun
- SMG
- Assault rifle
- Sniper rifle
- Rail gun
- Batton
- Lazer Saw
- Plasma Carbine

Armour comes as different types. There are helmets, chest, arms, legs, and backpack. Each can have different stats and perks depending on the tier.

Equipment In Lunar Mortis equipment can be one time use items found around the game. Examples:

- Grenades (Explosive, Cryo, pheromone)
- Sentry Turrets
- Batteries and oxygen tanks
- Flares (to temporarily light dark rooms)

Enemies: Enemies in lunar mortis are normally zombie crewmates of either the crashed ship or from the moon base itself. To make each enemy unique they will have different amount

of damage to limbs to make them all act slightly different as well as different uniform colours to indicate which department of the base they were originally from

Red indicated they are part of the security team – these zombies may hold equipment and armour to make them harder to kill and do more damage

Blue indicates they are part of the medical team – These zombies can have special abilities to heal and empower other zombies

Yellow indicates they are part of the engineering team – These zombies can be partly cybernetic and can break through rooms a lot easier than other zombies as well as cause temporary power outages in rooms they have entered

Structure, narrative.

Structure

The start of the game will always be the same. The players are introduced to their starting area, and the equipment at their disposal. As this is a rogue-like game, the player will not keep any items collected on previous attempts. All they will have been their knowledge of how the game works and how to identify certain situations.

The middle of the game will mainly rely on the player. They decide how many side-objectives they want to do, or how they approach any main objectives. This is where the game really stands out as no two runs are the same. This appeals to audiences who wish to have a distinct experience each time they play the game.

The end of the game sees the player escaping the moon base. Stats will appear on screen displaying what the player has achieved during their run.

Narrative

The story we are trying to tell is one of horror. The background music will be eerie and quiet audio sequences will be played to immerse the player. Music during tense situations will have increased tempo to aid in the suspense.

It is a dark styled game; this will be to create a sense that there is a lack of life. This adds to the atmosphere that there is no easy way out and that unexpected things could happen to the player at any time.

There will be dialogues between the player character and survivors on the moon base, this will aid in directing the player and give them meaningful choices. Do you help save the survivors and have an extra pair of hands, or do you use them as a distraction to claim some loot?

Scattered around the moon base are logs from different departments. These logs tell a story of what was going on before the zombies, and where it all starts to change. Some logs may be found on corpses of your fellow spacemen and contain their last words.

In essence, we aim to provide the player a sense of urgency to escape, choices that have unforeseen consequences, and an experience that will truly immerse them into this dark game.

Visual, and audio.

Visual Aesthetic

The game's visuals will have an underlying horror theme which will be important for inducing the intended and appropriate player reaction - that being a fear-instilled yet thrilling experience. Due to the horror theme, bright, vivid colours will be limited, and the use of darkness will be an important gameplay element, as well as being aesthetic to this theme. Darkness will be a useful indicator for the player to be able to deduce which parts of the game world are safe and which are not; dark areas will usually convey that a certain area is likely to contain hostile enemies, whereas lit areas will likely be places where the player can expect to contain few to no enemies. This aspect of the game will be mostly intuitive since it will be obvious to most players that light represents safety and darkness represents danger or the unknown, it is also an element used in many other games to achieve a similar effect. This will also be a useful component to represent the lunar day-night cycle as a gameplay mechanic, for example, when sunlight is not visible, the entire lunar surface is dark apart from light caused by the zombies or electrical means and there are many more zombies roaming around during the lunar night - this enhances the horror theme at these times during the game and allows the player to strategize around this game event.

The colour palette will consist mainly of dark, desaturated colours to befit the horror theme, but they will be used in compelling ways such as displaying brighter and richer colours on game entities that might either be useful, insightful, or of interest to the player.

Another important visual component of the game will be the use of gore. As well as being congruent with the horror and survival themes, it will also benefit the game in terms of immersion by making the game seem more interactive and logical - since enemies will lose limbs and spew blood in the specific areas that they are being attacked by the player, therefore, logically the player can have the ability to target an enemy's legs to partially immobilise it, or its arms to lessen its ability to attack the player. This gives the player a diverse array of options to strategize attacks, as well as making the game world seem more believable and tangible.

Character Design

The 3 main character types within the game will all have similar designs due to them all wearing spacesuits, however, there will be noticeable differences between the player, the zombies, and the survivors. The player will have a simple, typical-looking space suit, which will be mostly white in colour, this is to make the player distinct from the NPCs. The zombies will have similar-looking spacesuits to the player character, except they will appear damaged and dirty, also with the visor broken so that their face is visible, the zombies will also have subtly glowing red eyes so that they can vaguely be seen in the dark, they will also have sparks emanating from their damaged suits which can also illuminate the surroundings in the dark to some degree. Their spacesuits will also be specialised, meaning the colour will pertain to what department they were from, and hence their difficulty to defeat and their abilities. The survivor's spacesuits will be similar to the zombies, in that they will be specialised relating to the department that they are from, but their spacesuits will not be damaged or dirty, and the visors will be intact.

Audio Aesthetic

The audio will be an important aspect for the game's immersion. Ambient sound in particular will be crucial to convey the horror theme effectively, a way this can be achieved is by including semi-distant sound effects that the player cannot see in their immediate surroundings, such as subtle sounds of movement from zombies near the player's location, or loud, aggressive sounds of zombies attempting to sabotage parts of the map - damaging electrics, oxygen pipes or breaking doors open etc. This is to instil a sense of impending danger for the player that is also recognisable to give them awareness of what activity is happening that they cannot see and so would be useful to them at the same time.

Since the game is set in the future and in an unnatural environment to the player, it would be appropriate to use mostly unnatural and eerie sound effects for the game environment,

an example would be to use a low, electrical humming noise that plays indefinitely when in an area that has functioning electrics, this would sound appropriate to the environment whilst also sounding unnatural enough to be unsettling. This would also make any lack of noise all the more eerie and fear-inducing, since in the case that this constant noise suddenly stops, and lights go out - this can mean the zombies have managed to sabotage the electrics in the player's area and can hence infiltrate that area and attack them.

The zombie's sound effects would also need to be unnatural and eerie sounding, but perhaps to a greater extent, for example, their array of passive growls and groans should sound similar to a human voice, but one that sounds twisted, possessed, and corrupted by an external, alien entity, that is forcefully enacting through their corpse host. When aggravated, the zombies should sound desperate, manic, and hysterically furious, indicating to the player a sense of the nature of these creatures as malevolent to the extreme, devoid of reason, but unwearied in primal desire.

Game Accessibility

- For the game to be accessible to as many people as possible, it is intended to be graphically inexpensive, meaning it can run on a vast range of hardware without performance issues. To accomplish this the game will be low poly, but there should be as little a compromise as possible in terms of immersion and graphical fidelity.
- There will be a variety of colour blindness settings for players to customise to make their game experience as immersive as possible for those who have issues differentiating colours.
- There will be a colour-graded filter to limit harm to epileptic users
- The game's UI will be simplistic and subtle but will be able to convey essential information to the player without taking away any immersion or obstructing vision.
- Completely customisable key/controller mappings will be available in the options menu.
- Clear and readable fonts will be used throughout, will mostly be a white font with a black outline to be readable in all situations. Fonts can be adjusted for size and colour in the options menu.
- A gameplay tutorial will always occur when starting a new game so the player can learn all the necessary mechanics.
- Colours will be used thoughtfully so that players can deduce functions of game entities intuitively.

- Spatial audio will be a key part of the game for the player to be aware of their surroundings.
- Subtitles for important game events such as doors opening, footsteps etc. can be toggled in the options menu for those with difficulty hearing.
- Wide choice of game difficulty choices which will affect aspects such as NPC AI and damage values.
- There will be an autosave and manual save feature so that progress is not lost when exiting the game during an active session.

How the Aesthetic Design Reflects the Game Concept

The aesthetic design of the game will befit the horror/thriller genre but will also be exceedingly appropriate with that of a survival game. The overall look of the game will intend to convey a sense of mystery, fear, disgust, intrigue, and isolation which will be suitable for the survival/horror aspect of the game concept since it will use the player's natural urge of self-preservation but also curiosity to give a satisfying experience and give drive to the player throughout their time in-game.

The visual aesthetic will also be suitable for the game concept because the design choices intend to be useful to the player as well as satisfying in terms of immersion - there will be many visual effects that will reflect game mechanics, such as using sparks to indicate electrical damage, which could show the player that a zombie could have sabotaged it or that it is malfunctioning due to another issue that the player can investigate.

How the Environment Reflects the Lore of the World

The game environment will be suitable for the world-lore because the game takes place on a crashed spaceship on the surface of the moon, the fundamental context will be that some disaster had caused this crash and an infection spread to all the deceased crew. The player-character, being one of the only survivors, will have the ability to explore the game world and to discover for themselves what happened, but must also survive themselves long enough to do this, and to be able to eventually escape.

Since it takes place on a crashed ship, the environment will reflect this since many parts of the ship and its electrical systems are damaged that the player must repair if they are to use them for survival. The surroundings will also convey the idea that it has been a long time since the crash, so there will be dirt, mould, and singes from long-since extinguished flames on certain parts of the ship. There will also be noticeable particle effects in places where a considerable number of zombies inhabit, this will look like a fume of unclean air that represents the spores of whatever infected the dead crew.

How the Sound Effects reflect the Game Genre

The sound effects will reflect the genre of horror/mystery/sci-fi since each audio effect will intend to sound unearthly, futuristic, and eerie. Since the game is set on a crashed spaceship, many of the ambient noises will be technological in nature in a way that gives a sense of isolation, space, and temporality.

The sound design for the zombies will also be appropriate for the genre since they will be intentionally eerie and fear-inducing, they are to be based on perverted human voices, which may be akin to an audible form of uncanny-valley. These sounds in particular are intended to be predatory and malicious to trigger human primordial fear.

Soundtrack

The soundtrack for this game will be subtle enough at times to provide an undercurrent of unease in less active situations, but intense and bone-chilling during combat or danger. The music will mostly consist of low electronic synths which will be appropriate for the sci-fi setting and give an other-worldly sense to the player. It will mostly be sinister sounding with strange, unpredictable chord progressions to enhance the sense of mystery and uncertainty for the player. The music will increase and decrease in pace and volume depending on the intensity of the situation the player is in and there will also be different music for separate locations within the game so that the environment is enhanced by an appropriate soundtrack.

Team planning and operation.

Minimum Viable Product (MVP)

Our Minimum Viable Product will be a functioning, mostly bug-free, and performant game experience that the player can complete from start to finish and that also has pleasing visuals and sound design throughout. We intend the game to have an ideal minimum play-through time of approximately 12 hours on release.

Roles and Responsibilities

Since we are a small group of developers, we intend to produce this game ourselves as an indie game-development company. This would mean that there will be some overlap and flexibility in terms of what jobs will be worked on by which people.

As for the general types of jobs that will be required, there will be:

- Game Director(s) - They will lead and oversee the project, by allocating work and being in charge of creative decisions, as well as making sure the team environment is

productive and comfortable. They will also generally handle the financial decisions with thorough discussion with the team.

- Programmers - They will be responsible for the actual development for builds of the game, this would include design for the levels, algorithms, mechanics, and overall cohesion of the game.
- Artists - Those who create the initial designs and later textures for the game, as well as the models, they will also be responsible for sound design and soundtracks.

By keeping a small team, it allows us to work realistically and cheap given our indie status.

Estimated Timeline for MVP Production

We anticipate the project to be in development for around 1-2 years before a market-ready version is made.

We will begin development by planning most of the game mechanics and designs so that we can continually refer to them throughout the development cycle. We will also hold discussions on important topics such as finance, work hours, and short-term goals. Our development discussions will mostly take the form of daily Scrum meetings.

The next stage of development will likely be focused on creating an initial in-game environment within our game engine. This would be beneficial so that we can have a starting place to build from. We would also be making specific creative designs for characters, levels etc. The artists will be continually working on textures and character and level design throughout the development cycle. Another key part of development around this time would be creating a functional algorithm that the level generation will be based on - initial ideas and testing will begin for this algorithm around this time.

After a vaguely playable environment is developed, and the algorithm testing has shown some success, we will begin testing the level generation using the algorithm - this will be the overall focus for this stage of development until the level generation is consistent and reliable enough to continue other work.

When the algorithm is working somewhat well, we will begin implementing the core game mechanics, such as, combat, weapons, enemy AI, health etc. We will also begin using and refining the textures and designs that have been created by this point, in the game environment.

For the next stage of development, we aim to have a working alpha version of the game that can be tested for bugs and other issues. Other game mechanics and level design will continue to be worked on throughout this time. By the next stage, a functional beta should be mostly complete.

For the final stage of development, we should have a mostly functional beta build of the finished game. We will consider hiring professional bug-testers who can find some of the obscure issues that we could not find in our small team, we would then endeavour to fix these issues before final release, as well as make any final additions to make sure the game is completely ready.

By this point the MVP should be completed successfully and ready for market-distribution.

Monetisation Plans

We will explore our options for financial plans throughout development, however, we will likely initially settle for a Kickstarter campaign, since we will need to raise the necessary £250k-£500k for overall costs of development.

During development we will attempt to carry out monetisation applications with major game publishers such as Xbox Game Pass, PlayStation, Epic Games, Steam etc. to get an idea of what options we have.

We would most prefer for our game to be featured as a Game Pass exclusive since they will help fund development in return for our game to be free on their platform. We hope to also look to other means such as Steam so that we can have continual sales after development has concluded.

Team Minutes Document

Meeting Minutes - Week 2: October 11th, 2022:

Members present:

- Dylan Jones
- James Gouveia Da Silva
- Max Clarke
- Samuel Hayward. (Missed meeting but was caught up with team call after meeting.)

Today's Agenda:

- Create Game Concept.
- Establish who will research what.

What we worked on the previous week:

Non applicable.

Current issues:

We have been tasked with creating a game concept, along with a high-level explanation of its gameplay, features, mechanics, and story. We have the task of overcoming the sheer openness of this and researching possible markets, and audiences.

Discussion:

The discussion began with what games take up the biggest market share, and what types of games are currently trending. We arrived at how mobile games are currently dominating, and social deduction style games are currently doing very well.

To not run the risk of looking too much like the current main social deduction games like among us, we decided to go in a completely different direction, in the form of a team puzzle solving games with one saboteur.

This came in the form of a bomb disarmer game. Where players are given several puzzles to solve and will have access to other players puzzles. The aim will be for the players to disarm the bomb, and for the saboteur to set it off. Players will also be able prevent each other from moving others if they feel that they could be the saboteur.

What we are working on: Moving Forward:

At this point in the game concept, we do not require specialised roles, so we shall instead take this time to produce ideas for the game and undertake generalised market research that may come in handy throughout the rest of the development cycle.

Dylan – Further game ideas.

Samuel – Further game ideas.

James – Further game ideas.

Max Further game ideas.

Meeting Minutes - Week 3: October 18th, 2022:

Members present:

-Dylan Jones

-James Gouveia Da Silva

-Samuel Hayward

-Max Clarke

Today's Agenda:

- Fix outstanding ratings issues.
- Expand upon game.

What we worked on the previous week:

The team had begun research on the initial game concept and discovered many difficulties when it came to advertising our chosen market due to the need for in-game microphone use.

In this week we had completed generalised market research to gain a better understanding of what games were most popular, and we also learnt about the international ratings systems.

Current issues:

We are currently facing a dilemma with wanting to create a mobile multiplayer puzzle game, but it requires some form of effective communication. Typing is most suited to the PC platform, and speaking would work best with mobile, however, this would limit the amount of people we could market to due to the extra responsibilities involved in online interactions, rendering the "Casting a wide net" approach invalid.

Discussion:

We decided to discuss alternative games that we could produce and speculated on other themes and game types altogether.

James proposed a rogue-lite game based in a haunted mansion where the player would have to secure rooms and locate resources, while also fighting off zombies. Dylan expanded on this by creating more player urgency in the form of "A lack of oxygen." Sam proposed putting the game under the sea, while Max thought it would be better in space. The team overall decided on basing the game on the moon.

A new game was proposed in this meeting. A survival horror set on the moon, that used rogue-lite elements to explore and generate maps.

What we are working on: Moving Forward:

With a fresh game in mind, we are now working toward more specialised research, and a decision must be made whether to use First-person, or third-person, or a combination.

Dylan – Art research.

Samuel – Market research.

James – Gameplay research.

Max – Platform research.

Meeting Minutes - Week 4: October 25th, 2022:

Members present:

- Dylan Jones
- James Gouveia Da Silva
- Samuel Hayward
- Max Clarke. (Not in meeting but caught up in call after.)

Today's Agenda:

- Expand upon the game.
- Shift focus upon presentation work.

What we worked on the previous week:

The team changed the game direction completely, and instead of trying to create a game that cast the widest net possible, we decided to create a fun game that makes use of some of the most fun and cleverest game design techniques, including rogue-like level generation, randomized enemies, and random gameplay runs.

Current issues:

We currently need to decide how the game will implement its story, enemies, and what graphical direction we will go in. We also have not settled on a game title.

Discussion:

We heavily expanded upon the gameplay by discussing the concept of air on the moon-base. We decided that certain rooms will lack air, some will have breaches that need to be fixed, and the player will have a unique resource in the form of air-tanks. While carrying the tank, the player will be slow and vulnerable to the zombies and if they are damaged, they will explode. However, to return air to certain rooms, an air tank can be blown up to restore air to the room. This creates a tool, and a finite resource in the game world.

We also discussed the uniform that the astronauts would be wearing. As it is quite a clean and sterile looking space suit, we would allow different suits to have different colours to denote what department the zombie came from (green agriculture, yellow engineering, red security, blue medical), this would give the player an indication what kind of loot table would be associated with

them if they were killed. Medicine from medical zombies, or weapons/ammunition of security zombies.

What we are working on: Moving Forward:

We will continue to flesh out the current ideas that we have and stop new ideas to prevent scope-creep in the game concept.

Dylan – Presentation work, story development.

Samuel – Presentation work, Market research.

James – Presentation work, Gameplay research.

Max – Presentation work, Platform research.

Meeting Minutes - Week 6: November 8th, 2022:

Members present:

-Dylan Jones

-James Gouveia Da Silva

-Samuel Hayward

-Max Clarke.

Today's Agenda:

-Focussing on GDD.

-Shifting away from presentation.

What we worked on the previous week:

The team had completed a major milestone by completing the games presentation and decided to take a well needed rest. We however agreed to think about the components of the GDD and decided to specialise to the areas that also took during presentation work.

Current issues:

The GDD is now the projects main focus, but it will require many segments, consideration, and research to effectively complete. This document will not only portray the game in its written form but will serve as the blueprint should we decide to write code and develop it.

Discussion:

It was determined quite quickly that we would work on the sections that closest resembled the parts we each worked on during the presentation. Some sections would be completely new, and we would tackle them later, once we had completed what we had already familiarized ourselves with.

James and Dylan Discussed breaking the game into “Game chunks” so that it would be easier to identify the key progression points for a usual playthrough of the game, While Max and Sam talked about how the games camera would work as it could make use of all sorts of feedback systems, including rumbling, and changing filters based on gameplay feedback.

What we are working on: Moving Forward:

Dylan –Story GDD.

Samuel –Market GDD.

James –Gameplay GDD.

Max –Platform GDD.

Meeting Minutes - Week 7: November 15th, 2022:

Members present:

-Dylan Jones

-James Gouveia Da Silva

-Samuel Hayward

-Max Clarke.

Today's Agenda:

-Focussing on GDD.

What we worked on the previous week:

The previous week, we each worked on four major areas of the GDD, that included Story, Marketing, Gameplay, and Platform. We each wrote more detailed and relevant pieces for the document, and generally laid the foundation of what would go where.

Current issues:

Game characters within the game will comprise mainly of the zombies. As they will be the most common entity on screen, they will need to be consistent to remain both a threat and frightening at any given point, but they will also need to be versatile, so that they will never be boring, or predictable.

Discussion:

We discussed the state of the zombies and various gameplay elements they could bring to remain fresh and would both prevent coasting and boredom.

An interesting idea that was suggested played on the “Departments concept” - it mutated the zombies by also giving them department and rank. Higher ranking zombies would be noticed by higher quality uniform, and gear. For example, a low-ranking red zombie would be a low-ranking security officer who may have a baton or a stun-gun. A high-ranking security zombie would still be red but would wear bullet proof armour, this would be a terrifying concept when if a bulletproof zombie were chasing the player.

What we are working on: Moving Forward:

Dylan –Story GDD.

Samuel –Market GDD.

James –Gameplay GDD.

Max –Platform GDD.

Meeting Minutes - Week 8: November 21st, 2022:

Members present:

-Dylan Jones

-James Gouveia Da Silva

-Samuel Hayward

-Max Clarke.

Today's Agenda:

-Focussing on GDD aspects.

What we worked on the previous week:

Over the last week we further developed the zombies and various gameplay mechanics surrounding them. We discussed weapon item and equipment type

Current issues:

This week we will discuss more in-depth items and gear that the player will use.

Discussion:

We discussed types of weapons, gear, and equipment and how they are used. Also talked about a gear system where it can have rarities from common to legendary.

What we are working on: Moving Forward:

Dylan –GDD.

Samuel –GDD.

James –GDD.

Max –GDD.

Meeting Minutes - Week 9: November 29th, 2022:**Members present:**

-Dylan Jones

-James Gouveia Da Silva

-Samuel Hayward

-Max Clarke.

Today's Agenda:

-Focusing on GDD.

What we worked on the previous week:

Over the last week we further developed the room weapon and items as well as the loot and rarity system

Current issues:

This week, we have completed the initial subject areas that we specialised in during the presentation, so we need to move onto new areas of the GDD.

Discussion:

We have moved onto more obscure areas and implicit subjects that will be required of the game in order to be successful, one major area, is accessibility.

The first accessibility area that we discussed is the controls systems for handicapped users. As it would be too specific to pre-program controllers' mappings, it may be beneficial to just give users full control of the key bindings. The second issue is that the game relies very heavily on the colour coordination of the enemies, this would be very difficult for colour blind users. So, in the options, players will have the choice to choose the colours of each zombie department, giving both colour-blind users some freedom, and other users a sense of customisation.

Another area of discussion was the users that suffer from epilepsy, we decided to limit any flashing animations, and to also make use of a colour grading filter that limits the light frequencies that could harm epileptic users.

What we are working on: Moving Forward:

Dylan –GDD.

Samuel –GDD.

James –GDD.

Max –GDD.

Meeting Minutes - Week 10: December 6th, 2022:

Members present:

-Dylan Jones

-James Gouveia Da Silva

-Samuel Hayward

-Max Clarke.

Today's Agenda:

-Focussing on GDD.

-Finishing GDD

-Discussing games future.

What we worked on the previous week:

General completion of the GDD and various elements.

Current issues:

Completing the GDD.

Discussion:

We discussed the final areas of the GDD and talked about the potential directions of the game's future, including DLC.

We talked about the potential for a DLC that would expand the list of elements for the moon base's randomly generated layout, including an area that housed animals from earth, this would also allow us to create new and interesting zombies based on animals, such as a zombie lion that would chase you through the hallways, a zombie snake that could not be contained and would crawl through ventilation. And finally a zombie elephant that is limited to the room that it spawns in and serves as a massive obstacle.

What we are working on: Moving Forward:

Dylan –GDD.

Samuel –GDD.

James –GDD.

Max –GDD.

Future

For the future of Lunar Mortis, we plan to release one \$10 expansion 4 months after the original launch. Because the game contains many random elements (rooms, weapons, enemies etc..) the DLC will contain new random elements that can appear during play throughs as well as a new way to escape the moon by venturing underneath the surface of the moon to an old top secret sub level moon base that the player can escape using a prototype portal room. This will give players a reason to revisit the game and make the game a lot more thorough and enjoyable. This new expansion will also contain new logs about the unknown sublevel moon base to add more / new lore to the game.