

## **Exam: The Magic Arena: The Laplace's Demon (MALD)**

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### **Overview:**

This report documents the reflection of the design and development process of the above mentioned exam, MALD. MALD is a top-down bullet hell shooter. For the design purpose of this exam we will be considering both the groups and the individuals designers intentions.

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### **Intention:**

#### **Group Intention and Project plan:**

The concept of this game was designed and planned out in a group of four students. With the intent of developing a game in the top-down shooter genre, each students contributed ideas surrounding one or more of the following areas: Data , Communication, Level and Feedback design.

Along the design process, we decided to adopt and adapt both the reload and dodge mechanics from the game: Enter the Gungeon . With these mechanics we decide to pair it with the elements of the bullet hell genre, more specifically looking at games like Realm of the Mad God.

Overall the design concept involved developing a bullet hell, roguelike arena styled game played using a traditional top-down approach in which players take on different bosses one after the other. This being said the designers wanted to focus on the following areas: Hardcore boss fights, Difficulty and Challenging Combat and Player Growth.

#### **Personal Intention**

As a designer I wanted to focus and analyse various areas of the design process, such as gamer motivation and game design elements such as: dramatic elements and artistic elements. To do this I intended on actively play test sessions and observing the players when they play the prototype as well as other games.

In the end I hoped that by addressing these areas and elements it would allow me to successfully create a good and engaging system.

elements from other games

adaptions and ideas

### **Design process**

#### **Project plan and Accounting for over-scoping.**

Considering the time given to complete this project, some adjustments had to be made to the original project plan. Some of these included removing the upgrade station for weapons as well as the economy system used for upgrades.

Once I felt everything was within my capabilities I was left with the following features:  
Randomisation, Weapon Variety, Engaging Combat, Various Bosses and Environment Variety.

Once the features were decided on, they placed and classified under the following areas of design as follows:

Design Area	Features
Data Design	<ul style="list-style-type: none"><li>• Movement: Player Speed, Boss Speed</li></ul>

	<ul style="list-style-type: none"> <li>• Weapon Stats: Bullet Damage, Bullet Speed, Reload Time, Magazine Size, Fire Rate</li> <li>• Health: Player health, Boss Health</li> <li>• Dodge: Speed and length.</li> </ul>
Communication Design	<ul style="list-style-type: none"> <li>• Weapon Effects: Particle effects</li> <li>• Colours: Damage Effects</li> <li>• Screen Shake</li> <li>• UI: Health, Boss Health, Weapon Magazine, Weapon Type.</li> </ul>
Level Design	<ul style="list-style-type: none"> <li>• Tutorial: Level, UI texts</li> <li>• Boss Fights: Different Bosses</li> <li>• Combat: Boss Patterns (Phases)</li> <li>• Environment:</li> </ul>
Feedback Loops	<ul style="list-style-type: none"> <li>• Increase player damage as health decreases</li> <li>• Increase players speed as health decreases</li> <li>• Checkpoint system</li> <li>• Increase Weapon Reload as player health decreases.</li> <li>• Increase Boss Stats as life drops</li> </ul>

## **Personal Design Process:**

### **The Gamer Motivation Model**

Using Nick Yee's Gamer Motivation Model as a base guide through the design of the game. The model looks at and classifies 12 gamer motivations, placing them into six pairs according to their correlation with each other. I aimed to obtain at least one form of motivation from each pair. These pairs are listed as follows and contains the following motivations:

Pair	Action	Social	Mastery	Achievement	Immersion	Creativity
Motivation	Destruction	Competition	Challenge	Completion	Fantasy	Design
	Excitement	Community	Strategy	Power	Story	Discovery

### **Game Design Elements**

For the purpose of this prototype, I decided to look at a few game design elements to help me implement some of the previously mention motivations. These elements are divided into the following: Mechanical Elements, Immersive Elements and Aesthetical Elements, these elements are drawn from my understanding of The Elemental Tetrad, as proposed by Jesse Schell.

Element Category	Elements
<b>Mechanical Elements</b> These are elements that are necessary for the game to work and actually be playable.	<ul style="list-style-type: none"> <li>• Players- every player is unique, and by observing the behaviours of each play, I can possibly create a system that is engaging for everyone.</li> <li>• Resources: this element will allow me to achieve the resource management feature I intended on having the original project plan.</li> <li>• Conflict: between being alive and the enemies constantly chasing the payer and trying to kill them, this creates a conflict allowing for the rise of the survival dynamic.</li> <li>• Outcome: This is where the gimmick of my game comes into play. There is no outcome.</li> </ul>

	The game will continue to loop, and the player is forced to go through every all over again. Hence the name: “Laplace’s Demon”.
Immersive Elements These elements are considered to the player become more engaged with the game	<ul style="list-style-type: none"> <li>• Challenge: with each growing wave, the player is gradually eased into a intense and challenging system, creating a build of tension throughout each wave.</li> <li>• Story: The story of the game is not too explicit although players do get a feel that they are a magician and set in a world of magic.</li> </ul>
Aesthetical Elements These elements involve the look, feel and sounds of the game.	<ul style="list-style-type: none"> <li>• Visuals: The visuals of the game at the moment solely rely on it use of particle effects to showcase the various weapons and items</li> <li>• Kinaesthetic/ Responsiveness: Using, the very same particle effects, colours and UI, the system can achieve this element easily.</li> </ul>

With active playtesting I hoped to successfully apply each of these motivations and elements (not including the Social Pair). After each major feature implementation, I would hold playtest session and observe players to see if each motivation/ elemental form is ticked off.

### **Development Process**

The development area of the game was highly focused on playtesting and feedback reviews. As a result, the original design has undergone many changes.

### **Prototype Purpose Changes:**

These changes were made through observation data, as well as trying to implement some of the important features that the original design did not account for. An example of this was the tutorial feature, originally players were pinned against a boss from the begging. By introducing a new feature of enemies, players were allowed to learn the controls defeating lesser enemies. The changes are therefore as follows:

<b>Original Design</b>	<b>Iteration</b>
Tutorial feature	Removed the idea of only fighting bosses, now the player fights lesser enemies as well. This allowed for a gradual increase in difficulty as well, and more level variation as well.
Multiple Bosses	Due to the circumstance of this project, and the addition of the lesser enemies, it caused an issue with time control. This resulted in the multiple bosses feature being removed. Instead, players fight one boss with multiple phases and attack patterns

### **Playtest Feedback Changes**

<b>Original Design</b>	<b>Iteration</b>
Safe zone	This feature was obsolete for multiple reasons and players deemed it unnecessary. Since there was no upgrade station there was no need for a separate area between fights. To account for a balance created the challenging waves, a time limit was placed between each wave, allowing players to relax before confronting the next wave.

Data design	Some weapons were extremely hated by players and others were abused by players. This being said, balancing the numbers between weapon data and health was constantly undergoing changes.
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### **Dynamics From Broken Features**

The dodge feature, which was adopted from Enter the Gungeon was used by all players, but not in the way I intended it to be used. Due a bug, players were using the dodge to move through walls. Although when I removed this, players were disappointed. I then implemented it again but this time as a dash, explicitly accounting for the way it will be used, I therefore removed the invulnerability feature attached to the dodge.

### **Playtest Reviews and My Take on Them:**

- **Confusing collectibles:** Players would pick up collectibles without knowing its purpose, this led to a frustration build up as player would often switch weapons when they did not intend to. To account for this, I addressed the visual element and proved specific shapes for each pickup and colours to account for what category they fall under (green aura: health pickup, blue aura: ammo/mana pickup and red aura: weapon pickup).
- **Weapon Effectiveness:** Players soon realised that certain weapons do more damage than others. This was actually intended as I wanted players to learn how to strategically use weapons against certain enemies.

### **Improvements**

- Environment: Improving the environment layout by increasing the variation between environments. Introducing a more engaging environment by placing traps, trenches or even moving walls and platforms.
- Enemy Variation: Introducing new enemies, that can be affected by different weapons, by providing a resistance to certain weapon types.
- Weapon Data: more variables that affect your weapons performance, such as recoil.
- Pickup system: Provide more pickups such as buffs for: unlimited ammo, faster movement, quick fire and armour/ shield.
- UI improvement: Display damage dealt to enemies. Having a pause menu that also shows details of weapons (like the ammonomicon from Enter the Gungeon).
- Balance all data sets.
- Sound: add more sound effects for actions taken by the player. This will help improve the systems kinaesthetic element.

### **Reflection**

Personally, as a designer, I have not really engaged with a project to this scale before. I found it challenging, especially considering the fact that this project initially designed by a group. Although using the knowledge I have obtained in previous assignments and during the course of this exam project, I was able to over come this.

During the development, I attempted a new approach of developing my projects through playtests. This method allowed me to realise that there are no bad ideas and that most situations can always be adapted to suit ones needs. Take the dash feature for example. I enjoyed watching different people engage with my system, it made me realise how different each player is form the next.

On another note, the playtest sessions would have not been to effective if I had not discovered and approached the game design using the Gamer Motivation Model and analysing the key Game design elements I wanted/ needed my game to have.

### **The Gamer Motivation Model Reached**

Looking back on the model I realise that some of these motivators were not achieved, although I believe I achieved enough motivators to make my game engaging, by focusing on some of my key elements mention above. The following indicates what I believe I have achieved.

Pair	Action	Social	Mastery	Achievement	Immersion	Creativity
Motivation	Destruction		Challenge		Fantasy	
	Excitement		Strategy	Power	Story	Discovery

Upon further improvements, I believe that the system can potentially achieve all sections of motivation. I believe using this approach is guaranteed to give you an engaging system.

Overall, I feel that the project is a success. My newfound knowledge has allowed me to understand game design on a higher level. My design and development skills have therefore grown as a result. My experience throughout this project was unique compared to all others, and the challenging aspect I found surrounding this exam has been beneficial, allowing be to push through my current level of skill.

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### **References**

- [1] Schell, J., 2008. *The Art of Game Design: A book of lenses*. CRC press.
- [2] Quantic Foundry. 2021. *Quantic Foundry*. [online] Available at: <<https://quanticfoundry.com/>> [Accessed 22 June 2021].
- [3] Enter the Gungeon. 2021. *Enter the Gungeon*. [online] Available at: <<https://dodgeroll.com/gungeon/>> [Accessed 22 June 2021].
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## **Appendices:**

The following is just some play test results I received from players:

Player 1	<p>1) rate game out of 10: between 5 or 6</p> <p>2) is it fun: somewhat</p> <p>3) why is it fun: currently quite buggy which ruins the experience. I enjoy the various weapons and the enemies. would maybe like more pace/ faster movements. something to up the skill level.</p> <p>4) how long is the game: beat the game and boss in 4 minutes.</p> <p>5) describe it to someone who hasn't played it before: it's a top-down shooter game with multiple different enemies and weapons to collect</p> <p>More Notes: There are some bugs. many of the enemies' bullets did not do damage to me, even though they hit me. The collectables are confusing. I did not know what they were. often changed weapons even if I did not want to. my HP was at -39 at a point and I did not die. not sure what R button does. but I was able to fill ammo with it. seems like no point in mana if I can keep refilling for free. most of the controls are intuitive, but could not figure out sprint/dash?</p>
Player 2	<p>1)6/10 2)yes 3)I enjoy skill-based platform shooting games 4)a bit too long. Some enemies hp was too great. 5)arcade style platform shooting game</p>
Player 3	<p>1) 6.5 2) yes 3) easy to understand as you play. 4) not long up until you reach the first boss 5) an arcade 2D shooter</p> <p>Notes: Movement is fine. There isn't stage variations. There is some white light on the screen when I play, not sure what that is. Potions, health and gun type would sometimes spawn where you can't see it and by the time you find it, it disappears. After I finished wave 5 , I went back to wave 1 Boss has incredibly high hp and sits in a corner spawning in enemies. Guns:</p>

	<p>Plasma is my fav</p> <p>The flamethrower was also cool at first till I realised It does the least amount a damage amongst all guns. Enemies would be lit on fire but they don't seem to take fire damage.</p> <p>Boss doesn't take fire damage.</p> <p>Only plasma and the gun that fires 3 bullets at a time does some actual damage.</p> <p>There are some variation with enemies.</p> <p>Add some background music as well.</p> <p>Enemy attacks are dodge able</p> <p>I would suggest adding in a special ability after getting a certain amount of kills and making it be a space button.</p> <p>Make buffs spawn in as well.</p> <p>These buffs would be for a short amount of time and would include:</p> <p>Unlimited ammo</p> <p>Fast movement speed</p> <p>Quick fire rate</p> <p>And armour.</p> <p>Having traps around in the map would also make it more challenging.</p> <p>But overall it is good and it can be improved to be the ultimate game.</p>
<p>Player 4</p>	<p>Rating</p> <ul style="list-style-type: none"> <li>• 6.9/10</li> </ul> <p>Is it fun?</p> <ul style="list-style-type: none"> <li>• Yes</li> <li>• Despite the aesthetic simplicity, the gameplay draws from similar 2D side scroll titles mechanically. The loop of engaging targets with an array of attacks while kiting their own is an omnipresent and well received one throughout gaming. The difficulty is reasonably balanced, with standard mobs posing little threat early on while demanding greater concentration from the player later on.</li> <li>•</li> </ul> <p>How long is the game?</p> <ul style="list-style-type: none"> <li>• I played for around 15 minutes, but do not know the full potential length of the game due to some mobs having a somewhat inflated HP pool which proved difficult to whittle down.</li> </ul> <p>Describe the game to a new player</p> <ul style="list-style-type: none"> <li>• [Game name] is a 2D arena style shooter in which the player is required to defeat waves of mobs</li> </ul>