GAME DESIGN DOCUMENT

**STORM DUNGEON**

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# **GAME OVERVIEW**

Storm Dungeon is an action-arcade hypercasual roguelike top-down shooter where the player fights through a procedurally generated rooms with enemies and boss. The game is inspired by Archero and Soul Knight, taking concept diet version of Spelunky, Diablo, and Lufthauser.

## **GAME HOOK**

* Very simple control, high accessibility
* Engaging for casual players, challenging for core players
* Highly replayable, short and engaging game loop

## **GENRE**

|  |  |
| --- | --- |
| Genre | Description |
| Action | This game requires some dexterity to play and filled with fighting actions |
| Arcade | This game follows “play-die-repeat” game loop and each session doesn’t last long |
| Hypercasual | * Simple Control, no tutorial needed, player can play in just 5 seconds * Simplicity. The game only covers a single mechanic that is easy to learn but hard to master * Short Game Loops, Lots of Sessions, player can pick up the game and quickly end it anytime * Replayability |
| Roguelite | Player’s death resets their progress back to zero (with some exceptions) and the level is procedurally generated. |
| Top-Down Shooter | The player character can shoot bullets to attack and the game camera is above the head of the character |

## **TARGET AUDIENCE**

This game targets both Hypercasual audience and more Core audience. Hypercasual market love games where it had a simple mechanic and control, but highly replayable. Core audience loves games that are challenging. We blend the two together to hit both market at once.

## **GAME FLOW SUMMARY**

The basic core loop of the game is as follows:

*Enter Dungeon -> Gain gold and diamond -> Die -> Upgrade Talent and Item -> Repeat*

At the start, with no gold or diamond, the player’s only option is to play through the Dungeon Run. In the dungeon run, the player gathers gold and diamonds. They will die without the upgrade and return to the main menu to upgrade their talents and item, then return to the Dungeon.

This core-meta loop creates a sense of replayability while giving the player a sense of progress. If the player is a core player, they can blaze through the dungeon with almost no upgrades, giving them a difficult challenge. If the player is a hypercasual player, they will fun in slowly upgrading their talent and item.

## **LOOK AND FEEL**

The game should feel familiar for core players in a sense that the game is a simplified version of dungeon crawler genre, where players fight through a randomly generated dungeon and fighting enemies. Often, casual players will find this genre to be too difficult, so we bring a toned-down version of it: smaller dungeon, easier mechanic, and simple controls.

Despite that, core players will not be disappointed by the toned-down version. The game also had depth to it. Casual players can pick up the game and understand how to play, but core players will start to notice tiny details to optimize their gameplay. The mechanic of health regeneration vs attack speed bonus on movement, the use of dash, and many others are designed for advance players.

# **GAME AND MECHANICS**

When designing this game, we take into accounts both casual and core players. The trick is to add depth without raising complexity. It is perfectly fine for casual players to never discover unique secrets to optimize their gameplay. The only difference between casual and core player is time. With enough repetition, the talent upgrade system will eventually deliver them to the finish line.

## **GAMEPLAY MODES**

The gameplay follows a fixed gameplay loop alternating between two gameplay modes: Upgrade Phase and Dungeon Run Phase.

* **DUNGEON RUN (CORE)**

Dungeon Run is the main mode of the game, where the player travels through from level to level, killing enemies with bullets shooting from their weapon. At regular interval, there will be bosses and enemies, then rewards and upgrades. The run is over when the player dies, or the player defeat the boss at Floor 30. When the run is over, the player is returned to the main menu.

* **UPGRADE PHASE (META)**

In between each Dungeon Run, the player will spend the Gold and Diamond they get from the Dungeon to make their character stronger. They can upgrade their Trait or their Items and change up their items to suit their playstyle.

## **MECHANICS**

Each gameplay modes have their own unique gameplay mechanics and elements.

### **MECHANICS IN DUNGEON RUN**

* **LIFE AND HEALTH**

Life and Health is the primary attribute for the player.

Life is symbolled by hovering dots above the health bar. When health points drop to zero, the current life will break, and the player is back to full health again, giving player some invincibility frame and bonus critical damage. Once destroyed, life will not return for the duration of this run. Life can only be granted by the Shrine.

The health point automatically regenerates when player is not taking damage and after 1 second of not taking damage. Contact with enemy units and enemy bullets reduce health. When health reaches zero and no life remains, the player character dies, and the current Dungeon Run is over.

The rate of regeneration is faster when the player doesn’t move. Normally, there isn’t an Invincibility Frame on your character after taking damage.

* **MOVEMENT SPEED SYNERGY**

There is an interesting interaction between health and attack speed in correlation with the player current movement speed. When the player is not moving, their health can regenerate rapidly but their attack speed is slower. When they are moving, their health regenerates slowly but their attack speed is at the fastest.

This interesting interaction gives player bonus whether they want to stay low and defensive or take an aggressive attack.

* **EXPERIENCE AND LEVEL**

Levelling up in the dungeon will allow the player to choose from three random upgrades. In order to level up, the player need to gather experience points from killing enemies and bosses.

* **CHEST**

Levelling Chests contains either gold or diamond. When the player character touches the chest, it will open and spill the contents for player to pick up automatically.

There are two types of chests: Gold Chest only contains gold and can be found in the regular floors. Diamond Chest contain more gold and a little bit of diamond. It can be found after defeating the boss.

* **SHRINES**

In addition to level up, Shrines also give player options to upgrade their character.

Light Shrine allows player to choose between extra life or one random upgrade. While there is only one upgrade, this upgrade has stronger effect than the regular 3 options.

Dark Shrine offers player 3 upgrade options by sacrificing other upgrades. The trade is the fastest way to stack attributes quickly. Dark Shrine provides the most bonus when compared to Light Shrine or regular Level Up.

* **EXIT**

Each floor had an exit that leads to the next floor. Exit will be opened when all enemies in the main floor is dead.

* **WALLS**

Walls acted as a barrier which player and enemy can’t get through. There are two types of walls: Destructible and Indestructible.

Indestructible wall can’t be destroyed by anything. This wall acts as a hindrance and reducing the possible path the player can take. This forces the player to go through certain place where the game intended. Any bullets collide with the wall is immediately destroyed. This is useful for both player and enemy as a place to take cover from enemy bullets.

Destructible walls can be destroyed after several shots from both player and enemies, but then it will return after several seconds. Unlike its counterpart, destructible wall presents player with a choice: to stay near and risk being cornered by the enemy, or to take longer path around and risk encountering more enemy. Both player and enemy can destroy the wall after several hits. This wall also presents player with a temporary cover and force them to move when it’s destroyed. Destructible wall will return after several seconds.

* **DOORS**

Door is like destructible wall, but once it’s destroyed, it’s permanently gone. Doors always lead to optional room containing shrines or chests. Before breaking the door, the player can’t see what’s inside the room. This gives them a risk and reward choice to make.

### **MECHANICS IN MAIN MENU**

* **BADGE LEVEL AND BADGE SCORE**

Each player account had a level and a set of experience. Reaching a certain level will unlock new items that the player can use. To level up, the player needs to gather final score from each Dungeon Run.

* **ITEMS**

Item are three items the player can equip that change the gameplay style. There are three kinds of item: Weapon, Boots, and Ring. Weapon determines the rate of fire, damage, and types of bullet. Boots determine a special effect that happens before or after a dodge roll. Ring gives player a static bonus to starting attributes.

Before the game start, the player can choose what kind of item they want to use in this run. The player can also upgrade the item of their choosing three times to amplify its effect. Each upgrade alone is quite expensive, but it provides a big bonus.

* **TALENTS**

Talents are starting attributes the player given before they start Dungeon Run. These flat attributes can be increased further inside the Dungeon. Essentially, the more the player upgrades these talents, the more head start they get.

Here are

## **GAME OPTIONS**

• **LANGUAGE SETTING**

Language plays a key role in determining who will play our game. We intended to have the game available in English and Bahasa Indonesia.

## **GAME BALANCE**

To make a game where it is easy to learn, hard to master, we need to see the game from two lenses: Beginner and Expert. In Beginner Lenses, the strategy of the game should be made purely from short observation and gameplay. In Expert Lenses, the strategy of the game is made from learning every details of the aspects in the game, down to the numbers.

To design a smooth difficulty curves, we must look at important key factors that might affect the difficulty of a level. These factors will play a key role in how the game is balanced and how each level is designed.

### **SKILL CONSIDERATION**

Despite being as casual as possible, this game still demands the player to have a set of skill. This skill will be taught slowly and their mastery of each of them determines how fast they can finish the game.

* **FINGER DEXTERITY AND REACTION TIME**

The first barrier is how fast the player can move their fingers, then how fast they can react to sudden changes. Older people tend to be slower than young ones.

Control in the game is done by making hand gestures. The difficulty should rise up slowly from simple and slow gesture, to long and fast gestures. There are several factors:

- Hand gestures patterns (curves, straight lines)

- Hand gestures length (long curves, long lines)

- Hand gestures timing (hold or release)

- Hand gestures speed (reaction: fast snap or slow drag)

* **ANGLE ORIENTATION AND ACCURACY**

The harder challenge is how to orient the character to shoot at the target location. Some people already reported having difficulty to control the character on normal console joystick. Virtual joystick will have more challenge in design.

### **PLAYER STANCES**

In the most simplified form, the player’s main activities in the game is switching between “Very Offensive Stance”, “Very Defensive Stance”, and somewhere in between. This is reflected in the Movement Speed Synergy design, where faster movement grants bonus to attack speed and slower movement grants bonus to regeneration. Every activity the player does in the game is rewarded as long as they know what they’re doing. It is the job of tutorial level design to teach these mechanics well.

All possible player activities and its stance:

• Player move aggressively towards the enemy to strike them down (High Offensive)

• Player stand still and orients themselves in an angle to shoot the enemy (Medium Offensive)

• Player stand still in the open to heal and/or orienting themselves to shoot the enemy (Medium Offensive)

• Player moves to the next position to strike next enemy (Low Offensive)

• Player moves randomly to a position (Middle)

• Player moves to dodge bullet (Low Defensive)

• Player stand still in the open to heal (Medium Defensive)

• Player hides behind cover to heal (High Defensive)

Knowing these stances can help in the pacing of each level. We don’t want the player to be constantly in high stress and go fully in defensive mode.

### **PLAYER GAME SENSE**

Game sense is the ability of the player to know what to do given certain situation, how to strategize, and knowing when to switch strategy. This is done in a split second, based from the memory and become a second nature, almost like a reflex. Of course, game sense had to be learned through repetition, by being put in the low-risk environment and escalates to high-risk environment.

* Know when to attack and when to fall back (open or cover)
* Aiming properly while moving
* When to Dodge Roll
* Shoot incoming projectile

### **ENEMY DESIGN**

Enemy is not just a hindrance to player’s progress through a game. Enemy is one of many tools to teach the player about the game mechanic organically. The placement and amount of the enemy can also be used to test the player on lessons learned.

* **MELEE**

Melee enemy is used early in the game to teach following concepts:

* You move while shooting
* Contact damage with the enemy
* Best strategy is hit and run, switching between pointing at enemy and to run in opposite direction
* **RANGED**

Ranged enemies are enemy types which shoot projectile at player. The type of projectile determines the difficulty of the enemy. We designed all our enemies to use large but easily identifiable threat patterns since it’s easier to dodge 100 bullets that all appear connected in some way than dodge 30 bullets that appear to be moving independently.

Static Straight Path

* Undirected to Player One-Directional Bullet
* Directed to Player One-Directional Bullet

Static Pattern Path

* Undirected to Player Orbiting Bullet
* Directed to Player Pattern Bullet

Dynamically Change Direction

* Homing Bullet

* **BOSS**

Bosses are special type of enemy that only appeared on the last room of the stage. They have a lot of HP and unique behaviors unseen before in the game. The boss is designed around one concept or playstyle that the player must use to defeat it easily. Of course, another playstyle can be used, but it’s not very effective. Each boss is the pinnacle of the stage: the previous 9 rooms were made to prepare the player for the boss. The boss movesets are usually made of normal enemies movesets taken to the extreme.

Every boss has a weak point where they take bonus damage if hit. However, they usually hard to reach and require making risky plays.

## **PLAYER PROGRESSION**

Game Balance goal

* **PROFILE LEVEL**

The player will level up after gathering score when they die. The higher the score, the faster they level up. Levels unlocked new items.

* **HIGHSCORE**

Highscore is a personal record for the player. It doesn’t affect anything except some bragging right

* **TALENT**

Each talent upgraded is a progression for the player.

# **STORY, SETTINGS, CHARACTER**

The game doesn’t have any narrative other than a character who keeps going into a tower and killing monsters.

# **LEVELS**

Each Dungeon Run consists of individual levels called Floors that increases in difficulty. There is a maximum of 30 Floors in the game to reach the victory. However, every Dungeon Run is always different. Every floor is procedurally generated from a fixed pool. Each Dungeon Run always follows a fixed repeating pattern

Starting Room: Light Shrine

Repeating Patterns:

* Floor 01 – Small Room, Enemy
* Floor 02 – Small Room, Enemy
* Floor 03 – Medium Room, Enemy
* Floor 04 – Medium Room, Enemy
* Floor 05 – Light/Dark Shrine
* Floor 06 – Medium Room
* Floor 07 – Large Room
* Floor 08 – Medium Room
* Floor 09 – Boss Room
* Floor 10 – Light/Dark Shrine

Notes:

* Shrine Room is always clear of enemies. The default shrine will be Light Shrine, but if the player doesn’t take damage since the last shrine, it will be Dark Shrine
* Medium Room can contain 0-1 Optional Room with Gold Chest
* Large Room can contain 1-2 Optional Room with Gold Chest and/or Gold Chests and 0-1 Optional Room with Shrine
* Boss Room always contain 1 Diamond Chest

Room Types and Size

* Shrine Room and Optional Room is 1 x 1 camera size
* Small Room is 1 x 1.5 camera size
* Medium and Boss Room is 1.5 x 2 camera size
* Large Room is 2 x 3 camera size

# **ENEMY**

Enemies

PACK 1 – Move and Shoot (Forest Ruins)

* Slime (Melee, Moving)

The first melee enemy in the game moves randomly. It teaches the player about movement and aiming. The advanced version is a bigger slime with splitting capabilities.

* Bees (Melee, Moving)

Second melee enemy in the game chases the player slowly. It teaches the player to coordinate their movement better and how to pace their shot and run.

* Cactus (Ranged, Static)

The first range enemy shoots a single straight spike projectile. It teaches the player how to dodge projectiles by standing behind a wall, and time their attack from behind the wall.

* Tree + Vines (Boss)

Far melee.

PACK 2 – Shoot and Dash (Crystal Cave)

* Crystal Shooter (Ranged)

The first range enemy shoots a single straight spear projectile.

* Mage (Ranged)

The second range enemy shoots a straight bullet with a weird pattern of movement, in this case, a syne wave. It teaches player to coordinate move and attack.

* Dash Master (Mele)

This melee enemy will dash in interval, slowly veering to the player character’s location

* Eye of Beholder (Boss)

# **INTERFACE**

In this section we will discuss about the game Heads-up Display (HUD), Control System, and Help System.

## **VISUAL INTERFACE**

### **MAIN MENU**

As a Meta gameplay, main menu serves as a safe hub for player to improve their character in-between Core gameplay.

* **MISSIONS**

The player can look at available missions and collect their rewards. Missions reward gold or diamond.

* **LOADOUT**

In loadout screen, the player can choose their three items to carry before entering the game. After they choose their loadout, the player can start the game.

* **TALENTS**

The player can see the details of each attributes and upgrade them using Gold or Diamond.

* **ITEMS**

The player can see the details of each item they collected and upgrade them using Gold or Diamond. Upgrading an item is more expensive than upgrading talents and each upgrade make the items more powerful but also cost more Gold and Diamond. Item can be gained after reaching a certain player level.

* **TOP-UP**

Here, the player can choose to buy Diamonds in a bulk. The greater bulk they buy, the more value it gives.

### **IN-GAME**

Here is the list of information that needs to be displayed

|  |  |
| --- | --- |
| Life and Health | Life and Health are displayed above the player’s head. Health is displayed as a bar with numbers in the middle. Life is displayed as dots above the health bar |
| Gold and Diamonds | Gold and Diamonds are displayed on top right corner of the screen. |
| Experience and Level | Experience and Level are displayed on top of the screen. Experience is displayed as a bar, while Level is displayed as a text in the middle of the bar. |
| Attack Cooldown | Attack cooldown is displayed as a glowing dot inside the weapon that increases in brightness. When the brightness is full, the bullet will be fired. |
| iFrame Duration | iFrame duration is displayed as a circular life around the player character |
| Damage to Enemy | Displayed as pop-up damage above the enemy’s head |
| Joystick Control | Displayed as joystick circle on the bottom of the screen. |
| Dash Button and Cooldown | Dash Button is displayed on the upper left of the joystick. When on cooldown, dash button will be greyed out, the number of seconds left displayed, and a sweeping clock will slowly reveal the button to normal again |
| Score | Player score for this run is displayed on the top left corner next to the pause button. The score has a buffer, which will gather the new score to the right of “+” symbol, before adding it to the score. This can be used as a combo mechanic. |
| Optional Items | Optional items are displayed as a pin on the edge of the screen. This pin changes location to point out the direction and position of the item. |
| Pause Button | Pause button is displayed on the top left corner of the screen. When pressed, this will pause the game and opens settings for players to quit the current Dungeon Run, and to return to the game, |
| Boss Health Bar | Boss health bar is displayed on the top of the screen, replacing the XP bar with a red one. |
| Movement Tradeoff | Player can tell if they are at full attack speed (red glow) or at full health regeneration (green glow) on their character |

## **CONTROL SYSTEM**

* **Move and Look At (Virtual Joystick)**

The character will move to the direction pointed by the joystick. Distance in nudging the joystick affected the speed of movement.

* **Shooting**

The player automatically shoots in interval to the direction pointed by the joystick. The bullet from player can destroy the bullet from enemy.

* **Dash (Button 1)**

The character will dash forward quickly. Dashing through enemies deals critical damage to them. During dash, the player become invulnerable for a short time. Activating dodge roll also activates special abilities. After a dodge roll, there is one second cooldown before the player can dodge roll again.

## **HELP SYSTEM**

When the player idles for 10 seconds, a pop will show up on the game world near the player location in a form of GIF image showing how to move and dash.

# **TECHNICAL**

Game

## **TARGET HARDWARE**

The game is intended to run on most Android devices and later iOS devices.

## **DEVELOPMENT HARDWARE AND SOFTWARE**

* + 1. **SOFTWARE USED**
* **Unity Game Engine 2019.2.5f**

Unity is a cross-platform game engine released in June 2005. The engine can be used to create games and simulations in 3D, 2D, virtual reality, and augmented reality. Unity supports more than 25 game platforms such as PC, Android, Linux, PlayStation and many more. The sheer flexibility and supported by detailed documentation as well as a thriving community are two main reasons why we chose this game engine over other game engine.

EXTENSIONS USED

* A\* Pathfinding Project

A\* Pathfinding Project is an extension that allows for simple AI pathfinding in enemy units. This helps speed up production immensely.

Available at : https://arongranberg.com/astar/

Free for commercial use

https://forum.arongranberg.com/t/commercial-use-of-project/3927

* **Microsoft Visual Studio 2017**
* **Adobe Photoshop 2019**
* **Audacity**
* **LMMS** 
  + 1. **HARDWARE USED**
* **Handerson D. Tjia PC**

Using Unity Game Engine and Microsoft Visual Studio

|  |  |
| --- | --- |
| Operating System | Microsoft Windows 10 Pro version 10.0.18362 |
| Motherboard | ASUSTeK COMPUTER INC. P8H61-M LX |
| Central Processor | Intel(R) Core (TM) i5-2300 CPU @ 2.80GHz |
| Video Adapter | NVIDIA GeForce GTX 660 Ti 2GB |
| RAM | 6.0 GB |
| Hard Drive | ST3500414CS ATA Device 465.8 GB |

# **GAME ART**

The art theme is **fantasy medieval**.

Every enemy is also **color-coded**. The player default color is blue, while the enemy is red. This makes the player able to see the enemy and the player character easily.

To save time, every unit asset (player and enemy) only faces **one direction**, flipped by scripting into **Facing Left** and **Facing Right**. Every enemy units have four animations: Idle, Walking, Attack, and Die. Player have four animations: Idle, Walking, Dash, Die.

Bullets play an important role in this game, so it’s important player can see the bullets easily. Most bullets have white interiors with a colored border, which makes them easy to see on dark backgrounds, but they also have a subtle black border/shadow which makes them more visible on bright backgrounds.

# **GAME AUDIO**

The sound and music theme are also fantasy medieval.

The game has implemented a unique audio cues in addition to visual cues. For example: the sound of your bullets hitting the enemy changes when they're low on health

# **MONETIZATION**

The game generate revenue through two main ways: In-App Purchase and Advertisement.

## **CURRENCY**

Currency is a resource the player can get during gameplay or using real money and

spend on the shop.

* + - * **GOLD**

Gold is earned through gameplay by killing enemies, missions, chests, notification. Regular enemies drop few golds, while boss drops a lot of gold. Additionally, chests can be found in a certain room if the player spend time to get it, though there will be enemies to guard it.

Gold can be spent in Talents to upgrade the character starting stats or to upgrade the items.

* + - * **DIAMOND**

Diamond can be earned after defeating a boss in small amount, bought using real money (In-App Purchase). Diamond function like gold, but it is more valuable in low value than gold, meaning that the same purchase is way cheaper in diamond than gold.

* + - * **ENERGY**

Energy is a limited resource which refreshes every hour. It is primarily used to limit the player from blazing through the game and burn themselves out very quickly. Entering a dungeon consumes one energy. The player can still play the game even after they run out of energy, but they will only get 50% of their normal earning.

Player can only have a maximum of 5 energy. Energy refreshes one every 30 minutes. Player can watch ads to get another 2 energy every day. They can also buy energy using Diamond maximum of twice.

## **ADVERTISEMENT**

The game will have an integration with Google Ads to generate revenue. Ads will appear when:

* **After Death (Rewarded Ads)**

When the player dies, they are offered to watch an advertisement to continue. This can only happen once per Dungeon Run.

* **When Player Need More Energy (Rewarded Ads)**

Player can watch ads to get another 2 energy every day.

* **Before Starting A Dungeon Run (Mandatory)**

The player will have to watch an ad before entering the Dungeon Run. This intensity can be reduced or increased from “always” to “often”.

## **IMPORTANT METRICS**

Here are some metrics we use to gauge success and growth of the game

* Daily Active User (DAU)
* Average Revenue Per User (ARPU)
* Cost Per Install (CPI)
* Return on Ad Spend (ROAS)
* Local User In-App Purchase vs Video Ad income
* Key Performance Index (KPI)
* Lifetime Value (LV)

# **USER LOYALTY STRATEGY**

* Daily Login Reward
* Active Prized Timer
* Occasional phone notification with a promise of reward. This notification should appear when most player are online.
* Notification when energy is full.

# **FURTHER IMPROVEMENTS**

If given more time and resources, here are things we would like to add

* **HARDCORE MODE**
* **MORE LEVEL GENERATION POOL**
* **MORE ENEMY TYPES**
* **PLAYER CHARACTER CUSTOMIZATION**

Fanciest customization can be bought with in game currency or with cash. This customization does not affect the gameplay. The player could be customized in many ways: Hairstyle, Facial expression, Body clothes, Color scheme, Gender

* **MORE MISSIONS**

To make each run more engaging, we added extra objective other than to kill the boss in the end. This also acts like a progression system for the game. Things like:

* Kill all Enemy in the Level
* Don’t kill more than 10 enemies in the level
* Finish the stage under 10 minutes.
* Kill X amount of Y enemy type using Z upgrade

Completing missions reward player with more customization option and powerups, or even new enemies.

* **MORE ITEMS**

1. **Effect After Dodge Roll**

Choose one. This effect will trigger after a dodge roll:

* You will deal double damage on your next attack
* Triple shot on the direction you’re facing

1. **Effect After Destroying Wall**

Choose one. This effect will trigger after a destroying a wall.

* You will deal double damage on your next attack
* Triple shot on the direction you’re facing

1. **Effect After Not Moving for Several Seconds**

Choose one. This effect will trigger after not moving for several seconds

* You will deal double damage if you don’t move
* Next dodge roll is twice farther

1. **Effect After Get Damaged Three Times**

Choose one. This effect will trigger after getting damaged three times.

* You will deal double damage on your next attack
* Enter iFrame for one second

1. **Effect After Shooting Three Times**

Choose one. This effect will trigger on your third attack

* You will deal double damage on your next attack
* Gain bonus movement speed for 1 second

1. **Effect After Missing Three Times**

Choose one. This effect will trigger on your third attack

* Your next attack will shoot in circle around you
* Your next dodge roll is twice longer

1. **Effect After Getting Upgrade**

Choose one. This effect will trigger on your third attack

* Your gain buff for the next 10 seconds
* Your next dodge roll is twice longer
* **MORE GAMEPLAY MODES**

1. **Mutation Mode**

Mutation Mode is like Dungeon Run, but with a twist. Here are some examples:

* Mirror, Mirror: You control two character this time. When one dies, the other one also dies. That makes the game extra challenging, but also easier if they managed.
* High on Acid: Everything in the level takes periodic damage. The player must be very careful not to dilly-dally in each level.
* Meteor Shower: The level is rained by random meteors every X second, dealing damage to everyone caught in the blast. There is a circle indicator where the next explosion would be and how long until it happens.
* Shadow Die Twice: Everything must be killed twice for it to be truly dead. The first enemy death doesn’t grant XP.
* Immortal: All enemies drop less XP and will respawn at the place they were killed infinitely, but the exit is always opened.

1. **Battle Royale**

Battle Royale is like normal Dungeon Run, except that each level is connected in a grid pattern and there are other players around ready to kill you. The last player standing win.

# **APPENDIX 1: CHOOSING WHAT GAME TO MAKE**

* 1. **RESOURCE LIMITATIONS**

With just 4 months of time constraint and four team members with average skill level, we must narrow down our options on what video game we could make.

* 1. **CHOOSING GENRE**

Our research is done by browsing top chart of free and paid games in Google Play. We note down the genres and common features, then cross out genres which we can’t possibly make due to budget and time constraints.

We intentionally skipped over the high budget games, given our manpower is limited:

* Collectible Card Games (*Lophis Roguelike*, *Hearthstone*, *Stormbound*, *Shadowverse*, *Night of the Full Moon*)
* Battle Royale (*Free Fire*, *Fortnite*, *PUBG* *Mobile*)
* MOBA (*Mobile Legends*, *Arena of Valor*)
* Autochess (*Chess Rush*)
* Management Strategy (*Clash of Clans*)
* Racing (*Rally Fury*)
* Sport (*Soccer*, *8 Ball Pool*, *Chess*)
* RPG (*Evertale*)
* Sandbox (*Minecraft*, *Terraria*, *Grand Theft Auto San Andreas*, *Hitman*)

We also skipped video games with complex architecture, given time constraints:

* Life Simulation (*My Talking Tom*, *Homescapes*, *Mobile Bus Simulator*)
* Tower Defense (*Clash Royale*, *Plants vs Zombies*)
* Board Games (*Ludo*, *Domino*, *Poker*)
* Rhythm (*Piano Tiles*, *Magic Tiles*, *Cytus*, *Tiles Hop*)

Which left us with these choices

* Endless Run (*Subway Surfer*, *The Greedy Cave*)
* Hypercasual (*Fun Race 3D*, *Aquapark.io*, *Sand Balls*, *Crowd City*, *Bottle Flip 3D*, *Helix Jump*)
* Top-Down (*Robbery Bob*, *Archero*)
* Puzzle (*Mr. Bullet*, *TTS Pintar*, *Unblock Ball*)

We discovered that Hypercasual genre had consistently showed up from time to time. This made for a lucrative option, since Hypercasual game can be made quickly and reap a lot of profit. We decided to take Hypercasual and Endless Run game design mixed with Top-Down shooter, targeting Mass Market.

# **APPENDIX 2: GDD EDIT HISTORY**

**2019/09/26**

Water is removed from the game. While implementation of dash through water comes at a hurdle, the biggest factor was that there is an interaction between shield orb keep triggering “isOnWater” tag on Dash script, thus making water useless. Considering the time, we had, I decided to remove it.