Sleep After Dungeon (SAD) Game

COBIE CABURAO (SID: 200436566), University of Regina, Canada

Sleep After Dungeon (SAD) is a top-down 2D rogue-like RPG created using Unity, Visual Studio Code, and Pixilart. https://github.com/cobiecaburao/s-a-d

KEYWORDS: Video Game Design, Unity

ACM Reference format:

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1 INTRODUCTION

Experimental art application using the Elemental Tetrad and the Game Analysis Framework to describe the game created. The Elemental Tetrad is a game analysis framework that helps you understand and analyze the elements that are needed to make a game, their dynamic behaviour during play and both the impact of the game on culture and the influence of culture on the game. Based on Jesse Schell (Art of Game Design, 3rd edition, CRC Press, 2019, ISBN: 9781138632097). The tetrad consists of mechanics, aesthetics, technology and narrative which are expanded further by three layers inscribed, dynamic and cultural.

2 Layered Tetrad

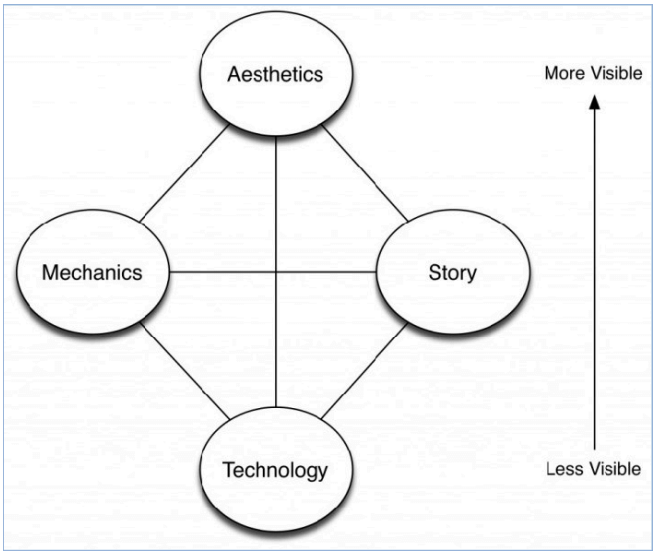

Fig. 1. The four basic elements of a game by Jesse Schell.

2.1 Inscribed Layer

2.1.1 There are 7 inscribed mechanics: Objectives, player relationships, rules, boundaries, resources, spaces, and tables. Objectives refer to the player's goals. Player relationships refer to how players compete and collaborate. Rules refer to what players can and can not do to achieve their goals. Boundaries refer to where the edges of the game are. Resources refer to what holds value in the game. Spaces refer to where the game takes place. Tables refer to the statistical shape of the game.

The final main objective of the game SAD is to beat the game by reaching the bottom of the dungeon and getting revenge on your murderer so you can rest peacefully, but there are several objectives leading to that ending that the player may work towards based on their immediacy and importance to any particular player.

Immediacy of Objectives	
Short-term Objectives	• Preserving health during combat with enemies and boss fights to keep the playthrough alive.

Immediacy of Objectives	
Mid-term Objectives	• Exploring every room of a level for a chance to unlock hidden NPCs or weapons. • Completing boss fights to progress to the next level
Long-term Objectives	• Beating the game • 100% completion of the game

Fig. 2. Table of Immediacy of Objectives.

Different players put importance on different objectives. In SAD, a player may put importance on beating the game, so they will explore levels only till they discover the boss room and immediately challenge the boss to progress to the next level until they beat the whole game. Other players may try to explore as much as possible every playthrough to find hidden NPCs to get more dialogue or unlock more weapons to test out different playstyles.

Player relationships are determined by the objectives of the player when playing the game. SAD is a single player game, so of the 7 different player interaction patterns SAD follows the single player versus game pattern. The player has the objective of beating the game. The player assumes the role of protagonist as they try to conquer the game.

The rules of SAD follow other rogue-like RPGs (Role Play Games) where death is permanent and forces the player to restart their playthrough, losing all progress from the previous run. In order to progress to the next level the player must defeat the boss fight of the current level. Weapons unlocked during gameplay can be chosen alternatively at the start of each playthrough. Successfully parrying an attack gives the player bonus damage on their next attack.

The boundaries of the game are limited to the actual game. The boundaries do not extend outside of the game like an ARG (Alternative Reality Game) does.

Resources in SAD are limited to the player's health bar. As a rogue-like game where perma-death is involved, health is an important resource that players must maintain unless their playthrough ends and they must restart their progress.

Like many rogue-likes, the navigable space of SAD should be procedurally generated. Therefore the dungeon layout and enemy encounters are randomly generated each time the game is started ensuring high replayability and a sense of discovery for the player. Each playthrough will provide the player with a different experience. Landmarks should

be utilized to help players orient themselves within the levels so within the minimap the player can see what rooms they have already visited as well as marked rooms like the starting point and boss rooms.

Tables are used for game balance, probability, progression, and playtest data. For SAD, tables were mainly used for game balance and probability. All regular enemies are given a difficulty value and rooms are given a difficulty cap and to procedurally generate enemy encounters by filling rooms with enemies to the difficulty cap so levels will get progressively more difficult.

2.1.2 Inscribed aesthetics cover all five senses of the game. Visual indicators such as when a player takes damage or deals damage to an enemy. Visual indicators for enemy attacks. Visual feedback for player's actions like attacking or parrying. Audio queues similarly to visual aspects help alert the player and convey simple information on what the enemies are doing and the feedback of the player. Touch can be utilized with vibration feedback from controllers to indicate when the player has taken damage or to indicate a boss attack being charged up. Both Smell and taste are not designed aspects for SAD's inscribed mechanics. The aesthetic goals for the game are to establish an eerie and medieval setting, since the player is exploring a fantasy dungeon filled with monsters and traps.

2.1.3 Inscribed narrative components of dramatics are premise, setting, character, and plot. The premise of SAD is that in a fantasy world with monsters that originate from dungeons that appear randomly on the surface. Dungeons become more dangerous the more floors it consists of with monsters growing in strength the deeper into the dungeon they are. In this world of dungeons and monsters exists a profession called "adventurers" that manage the dungeons so the monsters do not venture outside and endanger any neighbouring human settlements. By exploring dungeons and hunting monsters adventurers can earn money. There are many dungeons across the land, but a handful of them are extremely dangerous and deep, filled with strong monsters, where only the most elite adventurers can survive.

The setting is within one of the deepest dungeons where the player assumes the role of a voiceless knight as they are fighting on the last floor of the dungeon.

The main character the player takes control of is a voiceless knight wearing a red cape and helmet that can not die. The knight is a silent protagonist. During the playthrough, the knight will encounter adventurers within the dungeon as hidden NPCs that will request help from the knight.

The plot of SAD can be described with a five–act structure. German writer Gustav Freytag wrote about five-act structure in his 1863 book Die Technik des Dramas (The

Technique of Dramas). The five acts consist of the exposition, rising action, climax, falling action, and denouement.

Act I: Exposition	• The knight is killed while fighting on the final floor of the dungeon. • The knight is revived somewhere in the dungeon and now he must make his way back through the dungeon to the last floor to get his revenge so he can rest peacefully
Act II: Rising Action	• As the knight explores the dungeon and defeats monsters and progresses through the dungeon by defeating boss monsters, they encounter adventurers that request help from the knight.
Act III: Climax	• Reaching the final floor of the dungeon and encountering the one that killed the knight previously, it is revealed that the knight is the strongest monster that resides in the bottom floor of the dungeon and it was a powerful adventurer that slain the knight. Some of the adventurers the knight had encountered and helped in the dungeon appear again as team members of the powerful adventurer and now they are working together to defeat the knight again.
Act IV: Falling Action	• The knight fights and defeats the adventuring party
Act V: Denouement	• The knight finally can rest peacefully after defeating the adventurers that were targeting them.

Fig. 3. Traditional Dramatics Five-Act Structure.

SAD has a linear narrative, therefore the player's choices do not have a significant impact on the overall story of the game. Foreshadowing is used throughout dialogue and visual aspects hinting to the knights reveal as a monster. The adventurers comment on the knights' silence during encounters. The adventurer's bodies stay there when they die, but when the knight dies his body turns to dust like the other monsters in the dungeon and the knight later revives, not actually dying.

The storytelling of the knight being killed but not dying seemingly unable to rest until they get revenge on their killer provides the player with motivation and justification to explore deeper into the dungeon to get back to the final floor where they were killed.

2.1.4 Inscribed technology is unity and C script.

2.2 Dynamic Layer

2.2.1 Dynamic mechanics has 6 aspects: Procedures, meaningful play, strategy, house rules, player intent, and outcome. Procedures are the actions the players take. Giving weight to the players' decisions is meaningful play. Strategy refers to the plans devised by the players. House rules are the simple game modifications made by the players. Player intent is the motivations and goals of the player. The result(s) of playing the game is the outcome.

The procedures are the dynamic actions taken by the players that emerge from the rules of the game. The players will try to preserve their health resource to keep their run alive. The players will seek out and challenge the boss of the level to progress to the next.

Meaningful play needs to be both discernable and integrated. Discernable actions include attacking, parrying, dashing, and interacting. Parrying and interacting are also integrated actions since parrying gives the player a temporary power-up so the decision to either dodge and avoid attacks with dash or parry attacks is directly integrated into the amount of damage a player can deal. Interacting with NPCs can unlock new weapons and dialogue.

Players will create strategies to try to win the game or achieve any other goal in the game. Players may weigh the options of exploring more rooms of the level to find hidden NPCs or immediately challenging the boss fight upon discovery to preserve their health and go through minimal enemy encounters.

House rules can play a part in SAD’s challenge runs. The player may impose certain restrictions on their playthrough like not taking any damage essentially setting their health to 1 or playing deathless which would remove the revive mechanic.

Player intent can be categorized into four distinct personality types as defined by Richard Bartle, one of the designers of the first MUD (Multi-User Dungeon, a text-based online ancestor of modern massively multiplayer online role-playing games). The four types of players are the achiever (diamond), the explorer (spade), the socializer (heart), and the killer (club). SAD as a game caters towards achievers and explorers. Achievers will want to challenge the game and beat the game the quickest or through challenge runs with minimum damage taken or deaths accrued. Explorers will seek to find all the hidden NPCs and unlockable weapons by exploring the levels as much as possible. Since SAD

is a single player game, cheaters are not specifically punished for trying to make the game easier by only focusing on winning.

There are different outcomes that come from playing a game: Immediate outcomes, quest outcomes, cumulative outcomes, and the final outcome. Immediate outcomes consist of the player attacking and either hitting and damaging an enemy or missing, the player taking damage, the player dashing or parrying. Quest outcomes like the player helping NPCs and unlocking new weapons or beating dungeon levels to progress. The final outcome being defeating the adventuring party on the final floor of the dungeon.

2.2.2 Dynamic aesthetics can be divided into procedural or environmental. Procedural aesthetics are programmatically generated by the digital game code like music and art. Environmental aesthetics are controlled by the actual, real-life physical environment in the game. Procedural visual art in the form of particle systems and procedural animation. Particle systems are used for attacks and other interactions between the player and the game. Environmental aesthetics refers to the brightness of the environment, resolution of the player's screen, noisy environments, and player-controlled volume. The environment of SAD is mostly dim consistent lighting.

2.2.3 Dynamic narrative occurs as the game is played and there are two major types: Interactive fiction and emergent narrative. Interactive fiction is the inscribed story that adapts to choices the player makes. This is reflected in the game by having the game end if the player manages to beat the adventurer the first time. Instead of reviving somewhere in the dungeon where the player has to explore the different levels the player stays on the final floor and the game becomes a boss rush challenge instead of a dungeon crawler as it is revealed much earlier that the player is the strongest monster in the dungeon. More adventurers and even stronger monster enemies will challenge the player until they defeat all challenges or are defeated and the regular story starts.

2.2.4 Dynamic technology covers all the runtime behavior of your code and the ways it affects the player. For example the enemy AI implemented in the code that dictates how enemies move and attack the player.

2.3 Cultural Layer

2.3.1 Cultural mechanics occur when players take the mechanics of the game and craft a new experience. This can happen through game mods and custom levels. Mods that can be created for SAD are randomizer mods which make the procedurally generated dungeon levels even more random with all enemies including boss enemies being randomized in any room as well as the player's weapon being randomized. Players can create custom game levels or even custom enemies and boss fights for the game.

2.3.2 Cultural aesthetics occur when the community of players create their own aesthetics that relate to the game. This can come in the form of fan art, cosplay, and

gameplay as art. Artists can make art of the knight, monsters, adventurers and the dungeon. The design of the player character is very simple and easy to recreate for cosplayers. The designs for the adventurers would be more detailed and interesting for fans to cosplay. Gameplay as an art can be seen in the form of speed runs and challenge runs done by skilled players like hitless and deathless runs.

2.3.3 Cultural narrative can be expressed through fan fiction, narrative game mods, and machinima. Some potential fan fiction of the game can revolve around the adventurer's party and their POV as they explore the dungeon and encounter the knight, or alternative universe where the adventurer's party and the knight befriend each other and the knight goes outside of the dungeon to explore the world. Narrative game mods can follow other dungeons and monsters or adventurers in the world of SAD and can be made using Unity or other 2D game development software.

2.3.4 The influence of cultural technology on the game comes in the form of resolution and the coding techniques learned and used to implement the game. Players can also make external tools like speedrun time split software.

2.3.5 What can you envision at the collision of the community of game players and society in the four elements? Players will compare SAD to other rogue-like or indie games such as Enter the Gungeon, Hades, or Binding of Isaac. The story may be compared to the many generic fantasy stories in manga.

3 Design Goals

3.1 Designer-Centric Goals

Designer-centric goals include fortune, fame, community, personal expression, greater good, and becoming a better designer. My goals revolved around personal expression, becoming a better designer and community. With this game I wanted to make something that I would want to play which includes different ideas from some of my favourite games combined into one. Furthermore I wanted to get better at designing game balance and perfecting gameplay for a satisfying and challenging player experience. I follow a handful of influencers in the game development space as well as both indie game studios and bigger studios. One of my goals is to break into that space and community.

3.2 Player-Centric Goals

Player-centric goals are fun, lusory attitude, flow, structured conflict, empowerment, attention and involvement, interesting decisions, and experiential understanding. The goals I focused on were fun, flow, empowerment and attention and involvement. There are 3 aspects to make a game fun: Enjoyable, engaging, and fulfilling. Enjoyability can be achieved through the four types of play: Agon, Alea, Ilinx, and Mimicry. Players experience agon through the difficulty of the game and the player interaction pattern of player versus game. Alea is achieved through the game's procedural generation, therefore the players must play on chance how many rooms they must explore before reaching the boss room of the level. Mimicry occurs since the game is a fantasy RPG where the player is a knight exploring a monster-filled dungeon. The game can be fulfilling through fiero (personal triumph over adversity) through the progressive difficulty of the game challenging the players skills. Tying in with my goal to be a better designer my player-centric goal of flow requires a balance of challenging gameplay and the buildup of player skills. To achieve empowerment, successful implementation and player’s usage of the parry mechanic can give the player a sense of empowerment. The

player's ability to read enemies' attacks and time a parry. To hold attention and involvement in the game is an important goal for rogue-like games as one of its strengths is replayability. Attention is the immediate interest that can be grabbed by the player. The involvement is the long-term interest that must be held. To grab and hold attention beauty, aesthetics, contrast, story, narrative, social interaction, gameplay, ludism, and systems of mechanics must be used.

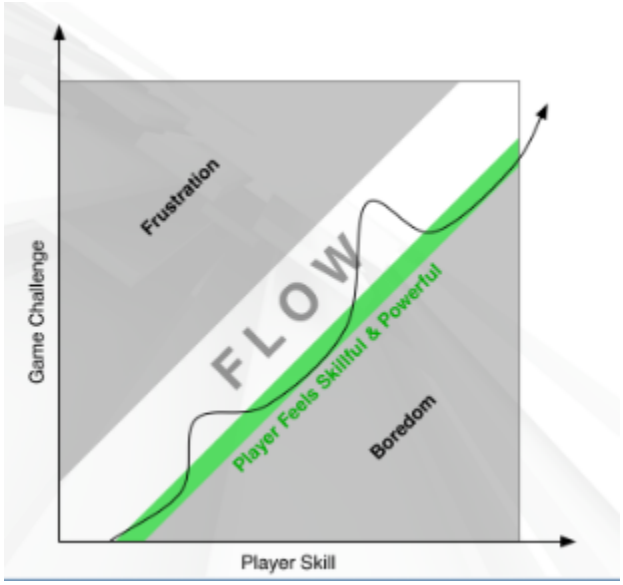

Fig. 4. Player Skill vs. Game Challenge (Flow) diagram.

4 Paper Prototyping

I used paper prototyping to sketch initial game concepts for the player character, tables for weapon design, map layouts, enemy placement, boss fight phases and attack patterns.

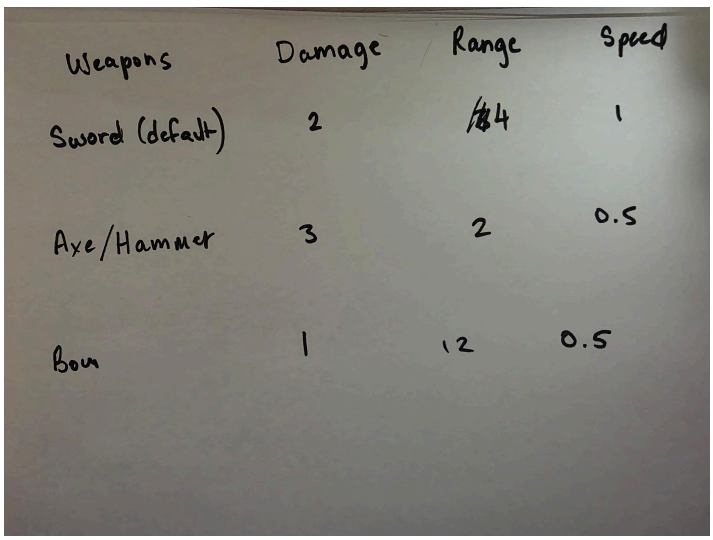

Fig. 5. Table paper prototype for weapon balancing.

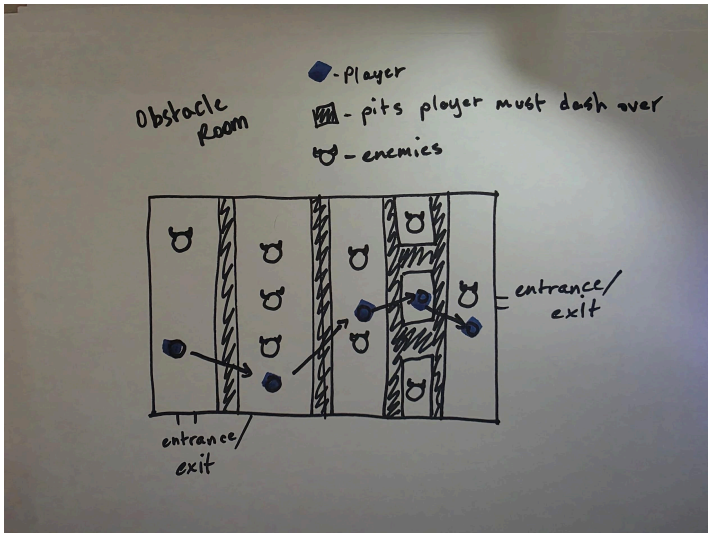

Fig. 6. Paper prototyping player movement through space.

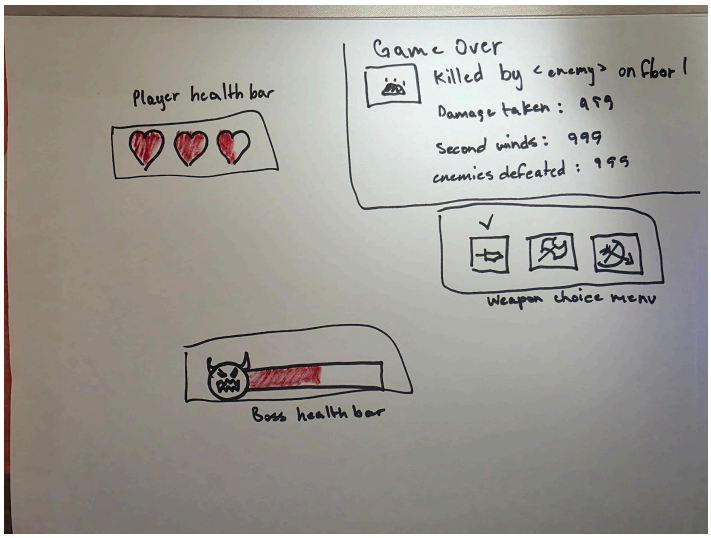

Fig. 6. Mock-ups of GUI: player health bar, boss health bar, game over screen, playthrough start weapon selection.

5 Game Testing

5.1 Playtest yourself

Fig. 6. Cobie playtesting.

5.2 Informal Individual Testing

- regular enemies not moving in the 2nd room and room before the boss room.
    - the issue was that I did not specify the trigger box collider 2d for the enemies in those rooms and the script needed to trigger.

    - Solution was to add the correct script and trigger object
- Boss fight is missing different attack phases.
    - The issue is that the condition to trigger the attack phases was incorrect
    - Solution change the condition for the attack phases
- There is no Game over menu to restart the playthrough so you must close and reopen the game.
    - No game state for the start menu or game over screen was implemented.
    - Solution is to add them.

5.3 Formal Group Testing

Post-playtest Survey Questionnaire
1. How does the movement feel?
2. How does the attack mouse clicking feel?
3. Are there too many enemies in the rooms or not enough?
4. Is the boss fight unfair or too easy?
5. What aspects grabbed your attention?

5.4 Formal Individual Testing

6 Game Balancing

6.1 Spreadsheets

Weapon	Damage	Range	Attack per Second
Sword	2	4	1
Axe	3	2	0.5
Bow	1	10	0.5

Fig. 7. Weapon Design Spreadsheet.

Boss Attack	Damage	Range	Heal
Barrage	1*6 projectiles	Radius = 2 On player targeting	0

Laser	**1**	**Room sweep**	**0**
Nuke	**2**	**Room wide -corners**	**0**
Summon minions	**1**	**Room corners**	**10**

Fig. 8. Boss Attack Spreadsheet.

6.2 Positive and Negative Feedback System

6.2.1 Negative feedback is implemented through progression of levels. Increased enemy health and damage. More enemies spawn per room. More hazards appear in the room. More rooms generated. Another way negative feedback is implemented is through the second wind mechanic where when the player loses all their health they can revive with different buffs like bonus health, bonus damage, etc.

6.2.2 Positive feedback is implemented through the parry mechanic and boss challenge rewards. Skilled players that can use the parry mechanic often do more damage and if they can defeat the boss without taking any damage they are rewarded with an item that increases their total health so getting better at earlier boss fights makes reaching more difficult levels easier with the increased health.

7 Player Guidance

7.1 Direct Guidance

Direct guidance is needed in the form of instructions to inform the player of controls and how some mechanics work. Instructions include both text and visual diagrams. The immediacy is as a pop-up on playthrough start.

- WASD - movement
- Left mouse - attack
- Right mouse - dash (makes you invulnerable during)
- F - interact
- Space - parry highlighted attacks for damage boost

Map is used to help players orient themselves in the level space and show where they have already explored and landmarked the boss room and starting point. Map directs the player towards their goals.

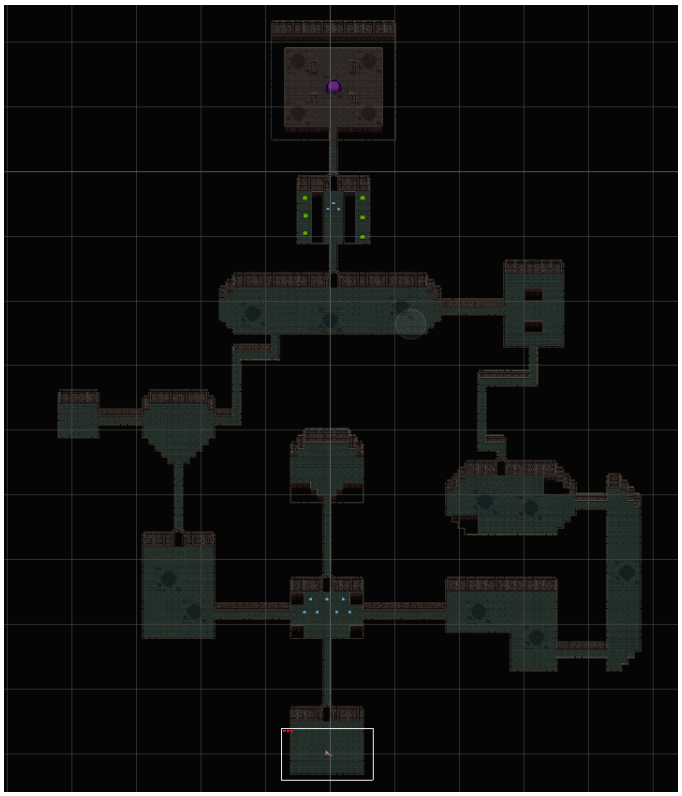

Fig. 9. Floor 1 map.

7.2 Indirect Guidance

There are 7 methods of indirect guidance: Constraints, goals, physical interface, visual design, audio design, player avatar, and non-player characters. Constraints can be used for weapon choice. There are only 3 or 4 weapon options all with their own advantages and disadvantages for the player to choose from. Visual design can be used with arrows pointing to enemies in the same room as the player but off screen to help guide the player to defeat the enemies and clear the room. Audio design is used to help players with boss fight attack timing. The background music will have the same timing as the bosses attacks to help the player match the timing to dodge or parry.

Fig. 10. Example of indirect guidance arrow from Enter the Gungeon.

7.3 Sequencing

Sequencing is the art of gently presenting new information through isolated introduction, expansion, adding danger, increased difficulty, and integration. In a tutorial level, sequencing can be used to introduce the different mechanics like dashing and parrying.

Isolated Introduction

- A long room the player can only exit if they get to the other side within a certain timeframe. But the player must use the dash in order to make it in time.
- A room with a dummy enemy that uses a slow looping parryable attack with no damage and is only defeatable with a parry boosted attack so the player must successfully parry the enemy and use the parry buff to kill it and clear the room.

Expansion

- A room with gaps the player can fall into unless they dash over it.
- A room with more enemies and quicker and more varied attacks that do no damage. Players must learn to parry different attacks like projectiles or enemy dashes.

Add Danger

- Room with gaps now has obstacles that if run into will damage the player.
- Similar to the last room but the attacks now do damage.

Increased Difficulty

- Similar to the previous room but now it is timed and there is a wall following behind the player so they must get through the room quickly and cant backtrack.

- More enemies.

Integration

- Both parry and dash are tested together with a boss fight where the boss jumps between different platforms that the player must dash onto to reach the boss and attack. As well as parry the Boss's attacks to get the buff and deal damage.

8 Game Distribution

8.1 Virtual Reality (VR) Adaptation

To adapt SAD to VR the game must be completely overhauled and rebuilt in a 3D engine. The controls for attacking will be motion controls. Movement, dashing, and parrying will be mapped to a button or thumbstick on the controllers. Since the attack is motion control the stats of the weapon options must be changed since the 2 melee weapons will now attack at the same speed. You can now dodge certain projectile attacks by ducking and weaving in place.

8.2 Revenue Generation

The revenue from the game would be from players buying the game once. No advertisements or in-game purchases. No subscriptions.

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Assets used from https://game-endeavor.itch.io/mystic-woods and https://assetstore.unity.com/packages/2d/environments/rogue-fantasy-castle-164725.

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