
*Final Year Project – Building a Game*

*Salma Bocus*

# Pitch

*Just a Girl's Dungeon Quest* is a **3D rogue-like dungeon crawler** designed for **PC** where you:

- **Explore** procedurally generated dungeons filled with traps, treasures, and enemies.
- **Unlock** and use magical skills to overcome unique challenges.
- **Collect** loot and build your character as you journey deeper into the labyrinth.

The game offers a humorous, story-driven experience that balances strategy and lighthearted adventure.

**Game:** 'Just a Girl's Dungeon Quest!'
**Genre:** Rogue-like dungeon crawl
**Platform:** PC
**Engine:** Godot 4
**Audience:** Young girls and casual players
**Modes:** Single player

# Gameplay

**Core Mechanics**:

- **Procedurally generated dungeons** that expand in difficulty after each expedition.
- **Real-time, grid-based movement** and exploration across dungeon floors.
- **Unlockable magical skills** that can turn the tide in battles (e.g., elemental attacks or healing).

# Features

- **Replayability**: No two dungeon runs are the same, thanks to procedural generation.
- **Character Growth**: Unlock skills and equipment to build your character's abilities.
- **Narrative Progression**: The story develops as the player dives deeper into the dungeon. The floors get harder as the player progresses.
- **Combat:** Encounter enemies in the dungeons and fight with a simple RPG-style combat system

# Narrative/Synopsis

- The player plays as a young princess who wants to prove herself to the noble Prince, by becoming the bravest dungeon adventurer in the land.
- Tasked with conquering the dungeons, she sets out to retrieve the legendary treasures hidden within.
- But as she delves deeper into the labyrinth's ever-changing floors, she discovers that her true strength isn't about impressing anyone—it's about discovering her own courage, independence, and priorities.

The young princess

Ready for exploring!

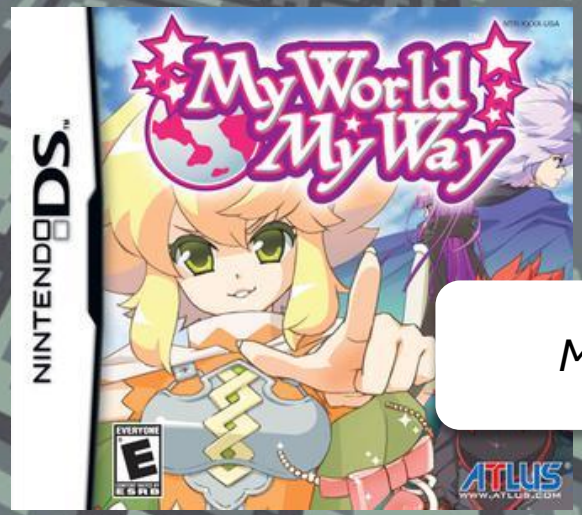
# Background Inspiration

A desire to create a fun, story-driven game with a feminine aesthetic and light RPG mechanics.





*Pokemon Mystery Dungeon*




*My World My Way DS*

# Target Audience

**Demographics**:

- **Primary:** Young players and casual gamers who enjoy lighthearted, story-driven games.
- **Secondary:** Fans of rogue-like games who appreciate humour and whimsical aesthetics.

**What They'll Love**:

- Humorous and relatable storytelling.
- Accessible but rewarding gameplay mechanics.
- Feminine aesthetics combined with engaging dungeon-crawling mechanics.


TECHNICAL
OVERVIEW

# Research Focus

- Procedural generation algorithms and grid-based movement systems.
- Implementing skills and character growth mechanics in **Godot 4**.
- Rogue-like design patterns like Game Loop and State management.

# Engine and Tools

**Godot 4**:

- Lightweight, open-source and support for procedural generation.
- GDScript is used for scripting game mechanics, procedural algorithms, and UI logic.

**Tools & Assets**:

- **Crocotile 3D**: For creating simple 3D models.
- **Aseprite**: For designing game assets like character portraits and UI elements.

# Implementing Core Features

**Procedural Generation**:

- Algorithms like **random walk** and **cellular automata** are being implemented to create dynamic dungeon layouts with varying difficulty.

**Grid-Based Movement**:

- Movement system snaps the player to a grid, ensuring smooth and logical traversal.
- Pathfinding will determine accessible tiles for players and enemies.

**Combat and Skills System**:

- Skills are triggered via input events and use **event queues** for handling animations and effects.
- State machine design patterns manage player and enemy behaviour during combat.

# Design Patterns

**Game Loop**:
- Ensures smooth handling of player input, physics updates, and rendering.

**Factory Pattern**:
- Dynamically spawns enemies, items, and traps during dungeon generation.

**State Machines**:
- Used to manage character states such as idle, moving, and attacking.
- Keeps AI enemies reactive and modular.

# Challenges

**Challenge:**
Balancing dungeon difficulty and player progression.

**Solution**:
Scaling enemy strength and trap frequency as players progress to higher floors.

**Challenge**:
Efficient performance for procedural generation.

**Solution**:
Optimising grid calculations and only loading active parts of the dungeon.

# What's Next?

- Develop enemies and how they interact with the player.
- Implement skills that the player can use in and out of battle.
- Add an inventory system for loot.
- Implement a dungeon map and continue to develop the UI.

And more!

# SUMMARY

- A whimsical **dungeon crawler** with a relatable story of personal growth.
- **Procedural dungeons**, unlockable skills, and **a linear narrative**.
- **Goal**: Deliver a polished, engaging, and **replayable** game experience.


Thank you for your time!
Q&A
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