

2D_Game Requirements Specification

Version 0.1

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1.Executive Summary

1.1Project Overview

A 2D Metroidvania game in development by students using the godot engine as a project for the software engineering course. Metroidvania games feature a large interconnected world map the player can explore, though access to parts of the world is often limited by doors or other obstacles that can only be passed once the player has acquired special items, tools, weapons or abilities within the game. Acquiring such improvements can also aid the player in defeating more difficult enemies and locating shortcuts and secret areas, and often includes retracing one's steps across the map. Through this, Metroidvania games include tighter integration of story and level design, careful design of levels and character controls to encourage exploration and experimentation, and a means for the player to become more invested in their player character.

1.2Purpose and Scope of this Specification

In Scope

In this document we will addresses requirements and goals related to creating a demo for the game:

- Accumulation of assets and proper grouping of requirements
- Providing demo animations for characters
- Providing a scenes with proper tileset and background for the environment

Out of Scope

These ideas are subjected to change in the future hence not included in this documentation:

- NPC placements and level design
- Abilities and environmental interactions
- Modifications on the saving settings
- Development on new skills and quality of life improvements

2.Product/Service Description

In this section, describe the general factors that affect the product and its requirements. This section should contain background information, not state specific requirements (provide the reasons why certain specific requirements are later specified).

2.1Product Context

This is a self-contained product, independent system which does not relate to other products for its functionality.

2.2User Characteristics

- 2D game players
- Action & Adventure players
- Solo game players
- Challenge oriented player
- Casual players

2.3Assumptions

To run the game comfortably the game should be played on a PC with these specs:

- CPU: Intel Core i3 3210 | AMD A8 7600 APU or equivalent.
- RAM: 4 GB RAM.
- HDD: 180 MB to 1 GB available space.
- GPU: Intel HD Graphics 4000 or AMD Radeon R5 series | NVIDIA GeForce 400 Series or AMD Radeon HD 7000 series.
- Screen Resolution: 1024 x 768 or better.

2.4Constraints

- Asset creation/collection
- In game implementations (Subject to change)
- Time
- Team size

2.5 Dependencies

This application will not require previous installations however future patches / updates might be introduced.

3. Requirements

3.1 Functional Requirements

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
01	The player character should be able to move based on the physics of a sidescroller.	No comments	1	22/04/2021	All members
02	The player character should collide with the environment and enemies.	No comments	1	22/04/2021	All members
03	The player character should have animations for all his actions.	No comments	1	22/04/2021	All members
04	The player character should have a moveset which allows for interacting with environment and enemies	No comments	1	22/04/2021	All members
05	The game should include a health system which allows the players, environment and enemies to interact.	No comments	1	22/04/2021	All members
06	The game should include mana and experience on the health bar display	No comments	2	22/04/2021	All members

07	The game should include multiple enemies and bosses with different skills and attack patterns.	No comments	1	22/04/2021	All members
08	The game should include a pause and option menu.	No comments	2	22/04/2021	All members
09	The game should include save and load game system	No comments	1	22/04/2021	All members
10	The game should include NPC's.	No comments	3	22/04/2021	All members

3.2Non-Functional Requirements

3.2.1User Interface Requirements

Requirements on the Graphical User Interface are the health bar which will display the user hit points, joined by a mana bar and an experience bar. In addition to this we will implement tooltips scattered throughout the game which will introduce the character to the new mechanic and how to use it in his progression. A small scale minimap will also be included to ease navigation through the world together with an inventory which will add another layer of immersion.

3.2.2Usability

The player will be provided with adequate information on how to use each of his gained abilities in order to leave room to improvisations and imagination.

3.2.3Performance

The game should be stable and run smoothly on 60ups and the loading time between scenes should be reduced to keep the immersion on the game. Character animations should have the lowest input lag. Advancements on NPC movements and predictions. Implementation of a settings menu where the user can adjust the resolution brightness and possible more options.

3.2.3.1Capacity

The goal for capacity is that the game should be able to be replayed indefinitely with no limits on how much information can be saved for a created account before its capacity is reached.

3.2.3.2Availability

The game will be available for download and to be played 24/7 with a possible exception of a future update which in case it happens it will be posted as an announcement for the user.

3.2.3.3Latency

Since the game is going to be run locally on the users PC, there will be no latency between him and the game. Possible future multiplayer implementations might tackle this problem and will be addressed in a future Requirement Specification.

3.2.4Manageability/Maintainability

3.2.4.1Monitoring

There are no monitoring errors detected as of yet.

3.2.4.2Maintenance

There are no maintenance issues encountered yet.

3.2.4.3Operations

The game will include autosaves for a rare case of power outage, in which will save the user in the most recent checkpoint preventing him from losing his progress.