Development Project

Supplementary documentation

for

M.A. Thesis Submission titled:

Monetising Video Game Mods

The perspectives of the modding communities

Joshua Ryan Astbury

11136632

j.astbury@ymail.com

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Supervised by ??????

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Contents

1. Introduction

This document is to supplement the development project for the M.A. Digital Games thesis in providing additional insight and information.

* 1. Development Project Concept

The concept of this project was to provide in-game mod tools to the player allowing them to edit usually hidden game variables and modify the next playthrough experience. What has been made accessible through in-game mod tools can be viewed in greater detail in section 3.

It is important to note that the project itself has had no balancing to the predefined values whatsoever. When playing, please do not feel like this is the intended experience as game balance was not seen as a necessity to highlight the mod-ability of this project.

Should the player ever get stuck during a run through, pressing the key: **T** will open the mod menu prior to the end of the level.

* 1. Playthrough Loop

The intended playthrough loop for this project was:

1. Player begins a new game,
2. Explores Tutorial Safe Area, leaves when ready
3. Navigates through Battle Area
4. Battle area completed
5. Mod tools become available, Player mods game values for next player
6. Saves values and playthrough ends.

Figure 1 displays a visual representation of this loop.

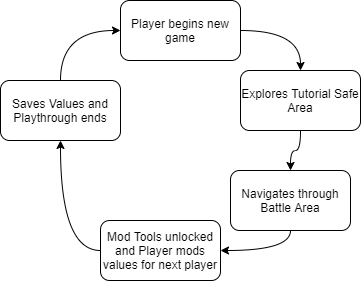


Figure 1. Concept Playthrough Loop

* 1. Game Areas

The development project comprises of two playable areas of a safe area and a battle area. The safe area, shown in figure X, includes some basic tutorial though none of it is triggered making the “Controls” information on the main menu a must read.

#SCREEN

The battle area, shown in figure X, contains two modifiable features of the available route and the battle timer for six battle zones which are scattered across the map.

#SCREEN

Sadly, the composition of the battles is not modifiable, though was considered and desired time constraints restricted its inclusion.

1.X Project Accessible links

**Prior warning:** The music was found to be on the loud side for myself, please bare this in mind if using headphones.

An executable for the project is available here: ##GoogledriveZiplink and as part of the git repository linked below.

The Git repository is available here: <https://github.com/Youg3/MA-DG_DevProject_JRAstbury>

Finally, a YouTube playthrough video is uploaded here: <https://youtu.be/qxko4ctrAVw> along with one from within the Unity Engine: <https://youtu.be/AMKQtZmjgVc>

2. Tools Utilised

Being a solo development project, prior tool familiarity to enable a quicker development time was highly regarded. In this section the tools implemented and used for the development project are detailed.

2.1 Unity Game Engine

The Unity game engine was chosen for the simple reason of prior familiarity.

2.2 Udemy course by James Doyle

To necessitate a more feature complete development project, an Udemy course was used (link below). The course provided by James Doyle provided a nice guide to help implement many features he saw as relevant for a 2D RPG styled video game. Not all were relevant for this development project but provided good practice and additional programming learnings despite lacking some much-needed code optimisations (detailed later).

The vast majority of content, detailed in section ##, was provided through the course.

Udemy Course Link: <https://www.udemy.com/course/unity2drpg/>

2.3 Github & the Fork client

A git repository hosted by Github was used as a version-control system which proved incredibly useful throughout the development cycle as errors and coding breaks cropped up.

The 3rd party client called Fork was used to help manage the repository due to familiarity with the tool.

2.4 Issues and Fixes

This subsection will explain, as best as possible, the issues encountered along with the fixes implemented during development.

2.4.1 Item pickup & Quest system bugs

Locking and unlocking unique items and quests never completely worked correctly with the Udemy tutorial code resetting after each change of scene causing items to reappear and be collectable multiple of times. Although the quest system was not used in the final concept, the unique items are, and fixing this bug allowed greater insight into the enabling and disabling feature present the mod tools for: player characters, enemy bosses, and battle zones.

2.4.2 Combat bugs

A particularly interesting error arose with the combat damage calculation causing an unlimited amount of damage to be caused by the player characters. This was discovered as being a mathematical error with the tutorial code where the game never accounted for the possibility of one of the stat values used to be zero. This was fixed by force setting the value to one even if the player should set it to zero through the mod panel. This ultimately fixed unlimited damage but does not prevent the player character from unleashing a massive amount of damage which will still one-hit everything.

2.4.X Code Refactors

One of the major topics not covered by the tutorial was refactoring code into a more reusable state through the use of inheritance. An example of this was as the mod tools themselves began to form, a character class from which all characters would inherit was seen as a far better approach and thus so, implemented, causing refactors across the enemy and player character classes created from the tutorial.

Code refactors could’ve have continued though was deemed unnecessary for this project due to time constraints and thesis weighting.

3. Mod Tools

This section details the mod tools implemented in this development project.

Upon reaching the battle area end trigger, the Mod Panel will activate and inform the player that they have completed their playthrough and can now mod the game values. Figure X shows the Mod Panel.

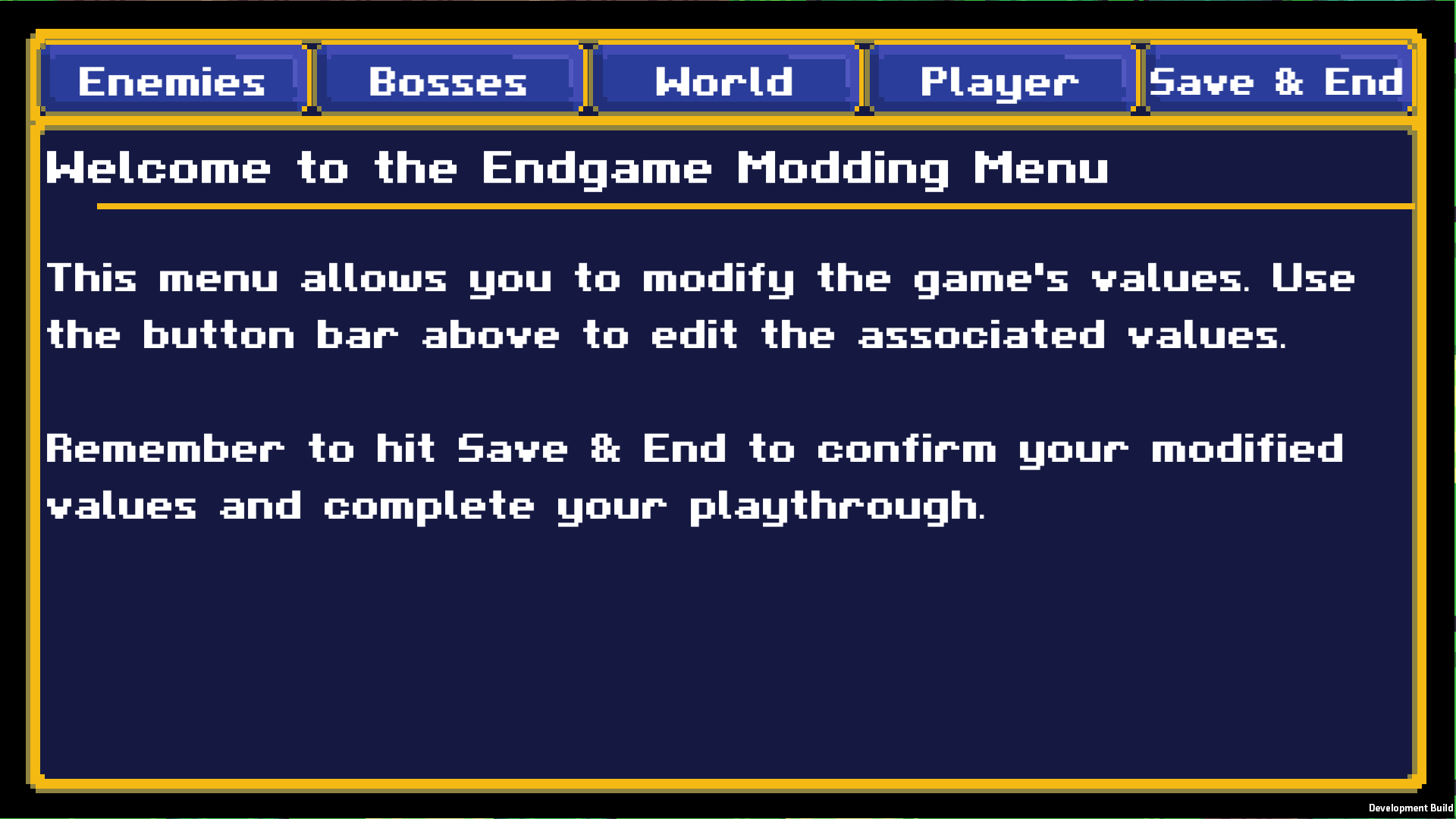


Figure . Mod Panel.

From here, the player can access the four sub-panels of:

1. Enemies (section 3.1)
2. Bosses (section 3.2)
3. World (section 3.3)
4. Player Characters (section 3.4)

Each of these sub-panels are detailed in the sections listed.

The character mod panels access the same values across all characters thanks to inheritance. Because of this, the UI barely changes between the Enemies, Bosses and Player Character panels. There are some unique changes that are detailed within the following subsections.

As the instructions state, once the player clicks the “Save & End” button from the top navigation bar, their playthrough will conclude and the game will cycle back to the main menu adjusted to the new values.

3.1 Enemies Panel

The enemies can have their stat values modified from their dedicated section. Figure 3 shows the UI layout of this.



Figure . Enemies Mod Panel.

3.2 Bosses Panel

The boss panel has an additional “Enable” button which allows for the two bosses within the battle area to be either enabled/disabled by the player. When a boss is disabled, their image will be faded out while an enabled boss remains fully colourised. Because of this inclusion, a slight change to the UI was needed. Figure X displays the in-game Bosses panel.



Figure . Bosses Mod Panel

3.3 World Panel

The world panel enables the player to modify the values of the battle area in relation to two distinct elements. The first of which is the locking/unlocking of routes through the level. The second is the timer between potential battles within the six placed battle zones. Figure X shows the panel that greets the player.



Figure 5. World Mod Panel

3.4 Player Character Panel



Figure . Player Character Selection



Figure . Individual Player Character Mod Panel.

Like the Boss panel, the additional two player characters can be “enabled” or “disabled” from within their own individual selections. The main character, character 1, is the only character that cannot be disabled.

#. Additional Reference Materials (Credits)

These materials are also detailed directly from the Credit panel within the development project.

|  |  |
| --- | --- |
| Material | Reference |
| Art/Battle Bosses | Stephen 'Redshrike' Challener, MrBeast, Surt, Blarumyrran, Sharm, Zabin |
| Art/Battle Enemies | Stephen 'Redshrike' Challener, hosted by OpenGameArt.org |