Final Report

Contents

Spearworks - Final Report

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Introduction

This final report presents a comprehensive overview of the project undertaken, its objectives, and the outcomes achieved. The report aims to provide a detailed account of the work performed, the methodologies employed, and various reflections. This report serves as a testament to the dedication and effort invested by all team members involved. The introduction will be followed by a thorough analysis of the project's background, outlining the context in which it was conceived and the problem statement it aimed to address. Subsequent sections will delve into the project's methodology, including the research methods, data collection techniques, and analytical approaches utilized. The report continues by present the key findings, discussing the results obtained and their implications for the project's objectives. Finally, the conclusion will summarize the project's achievements, its limitations, and

the potential for future work in the area.In this final report, we will present a comprehensive overview of the project undertaken, its objectives, and the outcomes achieved. The report aims to provide a detailed account of the work performed, the methodologies employed, and the significant findings that have emerged from the project. By documenting the entire process, from inception to completion, this report serves as a testament to the dedication and effort invested by all team members involved.

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Overview

The project aims to develop an educational video game that teaches students complex Ethics principles in an engaging and interactive manner. The game will focus on imparting knowledge about ethical vocabulary, concepts, the history of computer ethics, and the relationships between computer ethics and traditional ethics. The game will be designed as a 2D, four-way scrolling game with multiple levels of increasing difficulty. The game world will consist of various scenarios, each with its own background, static objects, and dynamic objects. The objects in the game will share a set of standard properties and behaviors, adhering to the principles of object-oriented inheritance.

Discrepancies

This section will cover discrepancies in the Ethics Game.

Deviations from Requirements

The development process of the game involved several changes and adaptations from the initial plans. Initially, the feature to edit questions was planned to be accessible within the game itself. However, due to certain constraints, we had to modify the implementation, requiring users to edit a separate JSON file instead. Similarly, the level editor was originally intended to provide a comprehensive editing experience, allowing users to modify various aspects of the game beyond just the levels. We also decided to reduce the number of levels from 10 to 2 to ensure quality. Furthermore, we had initially considered implementing multiple difficulty settings to cater to players with different skill levels, but this feature was not included in the final version of the game. Another significant change was the transformation of the puzzle aspect. Instead of traditional puzzles, we introduced a mini-game mechanic where players must dodge enemies. Once players achieve a certain score, the door opens, allowing them to progress to the next level.

Issues

We experienced some issues with video tutorials targeting Godot 3 when the development environment is Godot 4. The differences between the two versions of the game engine led to incompatibilities and discrepancies in the instructions provided in the tutorials, making it difficult to apply the knowledge directly to our Godot 4 development environment. Godot 4 deprecated, modified, and introduced new functions and APIs, which caused code snippets and examples from Godot 3 tutorials to not work as expected or require adjustments to fit the new version.

Known Problems

Summary

If we were to undertake this project again, we would approach it differently based on

the lessons learned. We would start coding and experimenting with Godot sooner to gain a better understanding of the engine's capabilities and limitations. Additionally, we would focus on creating more questions and levels to enhance the game's content and replayability. Implementing difficulty settings would cater to a wider range of players and provide a more tailored experience. Furthermore, we would prioritise having multiple iterations and prototypes ready for customer testing and feedback. Throughout the project, we acquired valuable skills, such as learning a new programming language in GDScript and gaining insights into the comprehensive process of game development. We also recognized the importance of documentation and other essential tasks beyond programming that software engineers must undertake.