Metropolia - University of Applied Sciences

Group 06

Zombiator

Requirement Specification

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Contents

1 Introduction 4

1.1 Purpose of the Document 4

1.2 Target Audience 4

1.3 Document Structure 4

2 Vision 4

2.1 Overview 4

2.2 Game idea 5

2.3 Game flow chart 5

3 Functional Requirements 6

4 Quality Requirements 7

# Introduction

## Purpose of the Document

This document serves as a comprehensive requirements specification for **Zombiator**. Its main purpose is to provide a clear and structured outline of the project's objectives, functions, and quality requirements, as well as constraints. It serves as a foundational reference for all stakeholders involved in the game development process, including project developers, project team leaders and teachers.

## Target Audience

The intended audience for this document includes:

* **Project Developers**: The individuals responsible for designing, coding, and implementing functions, features of the product.
* **Project Team Leaders**: Those who oversee and manage the development process, ensuring that it aligns with the defined requirements and project goals.
* **Teachers (Testers and Graders)**: Educators who will actively participate in testing Zombiator and will also assess and grade the game based on predefined criteria, providing valuable feedback on the product.

## Document Structure

To ensure clarity and facilitate efficient use of this document, it is organized into the following key sections:

* **Vision**: providing an overall vision statement that represents the essence, goals, and core concepts of our product. In this section, we also provide a flow chart to show how the program plays out and the stages players will go through.
* **Functional Requirements**: including the specific functions and features the game. It also provides a detailed overview of the game concept and outlines various use cases.
* **Quality Requirements**: including the quality standards and criteria that Zombiator must meet such as performance, reliability, usability, and other factors that contribute to a high-quality player experience.

# Vision

## Overview

The vision section provides a overall understanding of our product, offering insight into the game idea, the game mechanics, and player journey.

## Game idea

In 2025, Earth's environment is in crisis, causing a pandemic. A strange virus has turned people into zombies, starting in Spain and spreading worldwide. In **Zombiator**, player will play as a hero from Finland, the last safe place on Earth during a zombie outbreak. The mission is to rescue people trapped in airports around the world.

Here's what the game is about:

* **Rescue the World**: Player’s mission is to save survivors in different countries. Zombies have taken over, and only the player can help them.
* **Manage Resources**: Player will need money, fuel, and weapons to complete the mission. Fuel lets the player flys to faraway cities, and weapons help player fights zombies.
* **Face Challenges**: Each city has a different mission, with random difficulty levels. Some are tougher than others.
* **Earn Rewards**: Completing missions gives the player money and more weapons. Harder missions mean bigger rewards.
* **Unlock the Final Challenge**: Collect enough weapons, and the player can go to **Madrid**, the zombie's main lair. Completing the mission in **Madrid**, the player gets huge rewards and becomes a hero.

## Game flow chart

The flow chart will provide insight into how the game will play out and what stages players will go through.

A diagram of a system

Description automatically generated

# Functional Requirements

In this chapter, we break down user stories to outline player interactions, gameplay mechanics, and goals, ensuring that the product delivers a great gaming experience. Each user story identifies a specific action or ability that the player has, emphasizing the importance of clarity and specificity to facilitate effective development and ensure quality. Functional requirements are an essential component of this document, complementing the overall vision and quality requirements, and together they form a comprehensive blueprint for development and successfully implemented a flight simulation game.

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| **User Story** | **As a/an** | **I want to / I can** | **So that** |
| 1 | Player | Read the game story | I can understand the game’s purpose and mission |
| 2 | Player | Enter a name when starting the game | I can personalize the gaming experience and create my unique identity. |
| 3 | Player | Choose the country I want to go | My airplane will move there, allowing me to do my rescue missions effectively |
| 4 | Player | See the error notification if I enter unavailable country | helping me make valid choices and preventing confusion. |
| 5 | Player | Check current inventory (money, fuel, weapons) | I can manage my resources efficiently during gameplay |
| 6 | Player | View a list of approachable countries | I can have a clear overview of available destinations. |
| 7 | Player | Purchase fuel with money | I have enough fuel to travel to faraway countries and complete my missions. |
| 8 | Player | See an error notification if I enter an invalid value when purchasing | I can avoid mistakes and ensuring a smooth gaming experience. |
| 9 | Player | Start a rescue mission in a chosen country | I can do the core action of saving lives and earning rewards. |
| 10 | Player | Complete a mission | I can receive rewards such as money and weapons |
| 11 | Player | See a notification if I don't complete a mission in a country. | I can get feedback on performance and motivation to improve. |
| 12 | Player | Access final mission in Madrid after collecting enough weapons | I can complete the final mission and become a hero |
| 13 | Player | View the ranking list to see high scores | I can compare my performance with other players and strive for the top position |
| 14 | Player | Automatically receive the necessary money, fuel, and weapons to continue the mission if I can’t move to any country | I can be sure of no interruption during the game |

# Quality Requirements

In this chapter, we outline the specific quality requirements that **Zombiator** must meet to deliver a seamless and enjoyable gaming experience. These requirements set the standard for game performance, ensuring the game operates efficiently and responds promptly to user actions.

**Performance Requirements:**

* **Fetching Data**: Fetching airport information from the database must take a maximum of two seconds.
* **Instant Feedback**: The user must get instant feedback from all actions they perform.

**Reliability Requirements:**

* **Stability**: Ensure the game does not crash or freeze during gameplay.
* **Graceful Handling**: The game should handle unexpected situations gracefully.

**Compatibility Requirements:**

* **Platform Compatibility**: The game should be playable both in a console using the keyboard (phase 1) and in a browser (phase 2).

**Usability Requirements:**

* **User Experience (UX)**: Ensure that the game instructions are clear and easy to understand.

**Gameplay Balance Requirements**:

* **Difficulty Balance**: The difficulty levels should be balanced, offering a fair and enjoyable experience. The game should not be too easy to win, but it should also not be excessively difficult to accomplish objectives.

**Data Integrity and Maintenance:** The game's relational database, derived from the airport database used in this course, must ensure data integrity through constraints and validation. At the same time, it must support schema modifications for long-term maintenance and adaptability, allowing for flexible schema extension while maintaining data accuracy and consistency.

These quality requirements will help ensure that your flight simulator game meets high standards of performance, reliability, usability, and player experience while maintaining balanced and enjoyable gameplay.