Requirement specification document

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Introduction

Participants:

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The document is targeted to:

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The purpose:

This document was created in order to provide an insight into our flight game simulator project, present it's key points and go a little more into the detail of the project's functionality and how it will

be implemented (project's vision, functional & quality requirements).

Vision:

A group of healthcare professionals have created a bioweapon and their goal is to spread it throughout Finland. The objective of the game is to infect all the municipalities where airports are located (by flying there and releasing the virus) before running out of crew members/points.

The team members consist of primarily medical employees (who created the virus) and IT workers (who have compiled the flight data). Unfortunately, the team members aren't immune to the viruses which presents a risk of them being exposed (infectious period varies depending on specific virus, but all of them have 100% mortality rate). As a result, the player must hire new agents which costs points. Everyone starts with 10 points, however once the player runs out of points/time before infecting all the municipalities with airports in Finland and if he/she fails the game and it's starts from the beginning. During the game, the player can be rewarded a specific amount of points (the amount is determined by player's actions, more in the chapter "Key Features").

Functional Requirements

The game is a turn-based type of game where:

The player is able to end their turn after deploying agents or sending them to gather ingredients so that the game progresses to the next phase.

The player can send medical workers to different parts of the country to gather ingredients needed to create the bioweapon so that the virus can be developed.

The player can monitor the progress of medical workers as they gather the ingredients so that the he/she is able to track how close they are to creating the bioweapons. (A checklist/mission)

After collecting all the ingredients they can create the bioweapon, to begin spreading the virus.

The player is able to view the points that they have so that they can hire new agents to help spread the virus.

The player can select flight destinations to spread the virus to different municipalities.

There will be a health bar for the agents so that the player can monitor the health of the agents hired, to decide if they need to be replaced before they become too sick to continue spreading the virus.

The player can track the areas already infected they will be marked red, yellow, and green/normal so that they can plan which areas they need to attack next

If the player runs out of points before spreading the disease throughout Finland they receive a message indicating that they have lost the game and the game ends.

Quality requirements

- **Performance requirements:**
  The game must load the map of the world and regions within 30 seconds

  The game has text animations, colors to the text and an introduction of the lore of the game, how the game works, what you need to do and how you either win or lose the game.

  The player must receive feedback within 5 seconds after completing an action, such as sending medical employees on a mission or selecting a flight destination, to maintain responsiveness and engagement.

  The game must process points deduction and update the player's remaining points instantly when hiring agents or completing missions.

  The health status of agents and the progress of ingredient-gathering missions must be updated in real-time to give the player an accurate view of the current state of the game.

- **Usability Requirements:**
  The interface must clearly display the checklist of ingredients needed for the bioweapon creation so that the player can easily track what has been collected and what is still required.

The player must receive clear and immediate feedback when they try to perform an action

that is not available (e.g., if the player tries to create the bioweapon without all ingredients, a notification must explain that more ingredients are needed).

The player must be able to monitor their points and agent health through easily accessible and understandable menus, ensuring they are informed about game status at all times.

Players must be alerted when an agent's health is low to ensure proper resource management.

All game actions, such as sending medical students on missions or selecting flight destinations, must be achievable in no more than three clicks

- **Reliability Requirements:**
  The game must autosave after each major action (such as gathering ingredients or spreading the virus) so that players do not lose progress if they exit the game unexpectedly.(may add this or not)

  In case of a failure (e.g., an agent dies or the player runs out of points), the game must provide an instant and clear notification, explaining the outcome and next steps (such as restarting or reviewing the final game state).

- **Scalability Requirements**
  The game must be able to handle an increasing number of cities, airports, and potential virusspread destinations as the game progresses, without crashing, and should handle unexpected inputs without breaking the experience I guess.

  The system for gathering ingredients must allow for different numbers of ingredients depending on game difficulty (e.g., more ingredients for harder difficulty levels), ensuring replayability and scalability.

- **User Experience (UX)/graphical user interface(GUI) Requirements:**

  The game's visual indicators (e.g., map regions turning color when infected) must be clear and easy to understand, giving the player a quick overview of the current state of the world and virus spread.