**TrizItOut Handover Document**

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1. **Introduction**

This project is a Unity-based escape room game where players are challenged with various puzzles designed around the principles of the TRIZ method (Theory of Inventive Problem Solving). The core objective of this game is not only to entertain but also to educate players on TRIZ's innovative problem-solving principles. As players navigate the challenges, they inadvertently learn and apply the TRIZ methodology, making the gaming experience both educational and engaging.

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1. **TRIZ Principles in Game Design**

In the process of crafting the game's puzzles, each challenge was conceived with a particular TRIZ principle in mind. This ensures that while players might initially approach a puzzle with traditional problem-solving methods, they will gradually come to realize the efficacy and uniqueness of TRIZ's approach.

**Example Puzzle:** Level number 4 - the burning room

**Associated TRIZ Principle:** In this level you have to put out the fire with the fire extinguisher, which is found in a glass box. In order to break the box, the user will have to use one of the main principles in the TRIZ method - the closed world principle, he will have to build a tool to break the box only from its components that are in his possession.

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1. **Environment Setup**

**Unity Version:** 2023.1.2

**Unity Add-ons:**

* + **ProBuilder:** Used for in-editor 3D object creation.
  + **Post Processing:** Implemented for enhanced graphics and visual effects.

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1. **Project Directory Structure**

Understanding the directory structure is crucial for navigating the project effectively:

**Assets**:

* **Scripts**:
  + Inventory: Manages the player's collected items and interactions.
  + Sound Manager: Controls all in-game audio elements.
  + Manager: Central script overseeing game states and transitions.
  + Next Level Loader: Responsible for loading subsequent game levels.
* **Scenes**: Contains all the game levels and related settings.
* **Audio**: Houses background music, sound effects, and voiceovers.
* **Prefabs**: Reusable game objects and their settings.
* **Materials** & Textures: Visual assets for game objects and environments.
* **Animations**: Animation files for characters, objects, and UI elements.

**ProjectSettings**: Contains configurations for the Unity project.

**Packages**: Libraries and external packages used in the project.

1. **Game Behavior and Logic**

The player starts in Room 1 and must solve a series of puzzles to move to the subsequent rooms. Solving a puzzle often requires interacting with multiple objects in the environment, some of which might be hidden or part of a bigger riddle. The game culminates in a final room, with the hardest puzzle providing an epic climax before the player's escape.

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1. **Key Scripts Explanation**

For clarity and easier troubleshooting, here's a breakdown of the primary functions and interactions of the key scripts:

**Inventory Script:**

* **Function**: Manages items that players collect during their gameplay. It keeps track of the items the player currently has and provides functionalities such as adding or removing items.
* **Interactions:** This script interfaces with puzzle scripts to check if a player possesses the required items to solve a specific puzzle.

**Sound Manager Script:**

* **Function:** This script is responsible for all the in-game audio. It manages background music, sound effects, and voiceovers.
* **Interactions:** The script is triggered by various in-game events. For instance, when a player solves a puzzle, picks up an item, or transitions between rooms, the appropriate sound or music is played.

**Manager Script:**

* **Function**: This is the central control script for the entire game. It monitors game states, tracks player progress, and handles level transitions.
* **Interactions**: It's interconnected with almost every other script and game object in the project to ensure cohesive gameplay.

**Next Level Loader Script:**

* **Function:** As the name suggests, its primary function is to load the next level or room after the player completes the current one.
* **Interactions**: The script collaborates with the Manager script to determine the game's progress and consequently load the subsequent appropriate level.

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1. **Resources for Unity Learning and Enhancement**

* [**Unity Tutorial on YouTube**](https://www.youtube.com/watch?v=g6-y6qdeyQ4)**:** This guide, which our team extensively used during the development phase, offers a comprehensive walkthrough of many Unity features. It serves as an excellent starting point for anyone aiming to deepen their understanding of the engine.
* **OpenAI's ChatGPT Recommendation:** For those just starting with Unity or even those wishing to further hone their skills, we strongly recommend the official [**Unity Learn website**](https://learn.unity.com/). This platform provides a structured learning path tailored to different skill levels. Beginner projects such as "Roll-a-Ball" or "Space Shooter" are invaluable entry points. Engaging with Unity communities, such as Unity's forums or the Unity subreddit, can also offer deep insights. Here, you can ask questions, share experiences, and learn from the challenges faced by a wide range of developers.

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**8. Contact Information**

For any queries, clarifications, or further information regarding this project, you can reach out to any member of the original development team. As our team operated collaboratively, any member can assist with questions related to various aspects of the project:

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