

FINAL PROJECT 3D ROBLOX

PROJECT REPORT: EMERGENCY HOSPITAL



Lecturer

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I. Theme Chosen

The theme chosen for this project is **Health / Medical (Emergency Simulation)**. The primary objective of the game is to simulate the high-pressure environment of hospital staff, specifically focusing on the role of a nurse. Unlike simple button-pressing games, this project integrates a unique "Escort Patient" gameplay loop, where players must guide patients from the waiting room to their beds for treatment.

The hospital setting was selected to create a realistic atmosphere where players engage in a "Collect → Activate → Unlock" progression system. This theme allows for the creation and utilization of interesting 3D medical assets, such as MRI machines, hospital beds, and surgical tools, providing an immersive experience. The game is designed to be interactive, requiring players to scavenge for medicine and treat patients to progress.

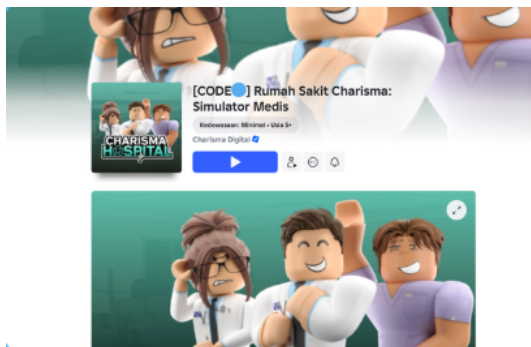
Game Link: [<https://www.roblox.com/games/80329704015269/>]

II. Reference Images

Reference images were collected to guide both the visual design and functional layout of the game. The primary reference for this project was "Rumah Sakit Charisma: Simulator Medis" by Charisma Digital on Roblox.

The reference images were analyzed and used to:

- **Determine Visual Style:** We analyzed the bright, clean color palette (whites, greens, and blues) to create a professional medical atmosphere.
- **Guide Interior Layout:** The arrangement of the waiting room and nurse station served as a blueprint for our lobby design to ensure smooth player navigation.
- **Design Mechanics:** We were inspired by the roleplay elements of hospital staff, which helped design our specific "Nurse Escort Mechanic".



III. Blender Modeling Process

All 3D assets used in the game were created using Blender. The modeling process followed a low-poly workflow to ensure optimal performance within Roblox Studio. Assets created include MRI machines, shelves, medicine bottles, syringes, and surgical trays.

Asset Links:

[https://drive.google.com/file/d/114-gPD5Wckayuzx4QVqIh9lrr46tMG-M/view?usp=drive_innk]

III.1 Modeling Workflow

The modeling process began with the creation of basic meshes. These primitives were shaped using Blender's core modeling tools to create the medical equipment and furniture.

- **Scale:** Adjusted to fit the Roblox character rig size.
- **Modeling:** Objects such as the MRI machine and hospital beds were modeled to look realistic yet optimized.

III.2 Materials and Textures

Simple materials were applied to the models to maintain the clean, medical aesthetic observed in our references. The focus was on clear visual indicators for interactable items like red medicine pills and blue bottles.

III.3 Applying Transforms

Before exporting, all transforms were applied (Ctrl + A) to ensure that the scaling and rotation of the medical equipment remained accurate when imported into the game engine.

3.4 Screenshots Documentation





IV. Import Steps

The process of importing 3D models from Blender into Roblox Studio was carried out carefully to ensure accuracy and consistency.

IV.1 Exporting from Blender

- Selected the medical assets (e.g., bed, syringe) to be exported.
- Navigated to File → Export → FBX (.fbx).
- Ensured "Selected Objects" was enabled to export individual props.

IV.2 Importing into Roblox Studio

- Opened Roblox Studio and accessed the Asset Manager.
- Imported the .fbx files.
- Verified that the scale of the furniture matched the hospital map layout.

V. Level Overview

The game level is divided into three main functional areas, each designed to support a specific phase of the gameplay loop.

V.1 The Lobby (Start Area)

This is the central hub where players spawn. It contains the seating area where patients (NPCs) wait to be attended to. The layout replicates a real hospital reception to provide context immediately upon spawning.

V.2 The Supply Room (Collect Area)

Connected to the lobby, this is a storage area containing shelves and desks. Players must scavenge this area to find medical items such as painkillers, blood bags, and syringes needed for treatment.

V.3 The Patient Ward (Action Area)

This area contains empty hospital beds. It is the destination for the "Escort" mechanic, where players must guide patients to administer treatment and complete the level objectives.

VI. Gameplay Mechanic Explanation

The core gameplay loop involves four distinct phases: Collection, Activation, Treatment, and Escape. The player must manage their inventory and interact with NPCs to progress.

VI.1 Phase 1: Collection (Scavenge)

The player begins with an empty inventory. The objective is to locate specific medical supplies hidden in the Supply Room storage shelves. Collecting items like the syringe or medicine bottle updates the inventory UI (e.g., Painkillers: 1).

VI.2 Phase 2: Activation (Patient Escort)

Once supplies are obtained, the player approaches a waiting NPC in the Lobby and uses the "Admit" interaction. This triggers the mechanic where the patient stands up and physically follows the player (Escort System) to the Patient Ward.

VI.3 Phase 3: Treatment (Deposit & Verify)

Upon reaching an empty bed, the player must use the collected item (e.g., syringe) on the patient. The system validates if the correct medicine was used. Successful treatment stabilizes the patient and increases the "Level Bar".

VI.4 Phase 4: Escape (Final Unlock)

The final phase is triggered after successfully treating 3 patients. This event automatically slides open the main exit doors, allowing the player to exit the ward and finish the "Emergency Simulation" level.