



GAME DESIGN DOCUMENT – Ibrahim Mohamed

Game Name:

Medical Equipment Maintenance

Genre:

Training & Education

Player:

Single Player

TECHNICAL SPECS

Technical Form:

3D Virtual Reality

View:

VR Camera View

Language & Engine:

C#, Unity

Platform:

Android

Device:

Oculus Quest 2

- GAME OVERVIEW & SUMMERY

The game is a medical equipment maintenance game that enables biomedical engineering students or graduates to train on how to fix/maintain high-cost Diagnostic Imaging modalities and laboratory systems with risk-free, wide range of errors and real failure in a fun way.

- SCENCES

The game consists of 3 scenes:

- 1- Main Menu (DebugUI)
- 2- Devices Menu (DeviceUI)
- 3- Errors Menu (Errors)
- 4- Main Game Scene (morgue)

The game main scene theoretically should be scene for each device so, number of scenes is

$$3 + \text{no. of devices}$$

- **Main Menu**

In the main menu you choose to start the game, credits or exit the game.

- **Devices Menu**

In the devices menu you choose the device you want to work on

- **Errors Menu**

Per Each Device there a list of errors and failures for the engineer to work on.

- **Main Game Scene (Hospital Room Scene)**

The main game scene is where the player finds the selected device and the error message shows to let the engineer know what the medical stuff experienced with the device like what happens in real world applications. Here the player has the freedom to make what is needed for the device to return working again and have the needed tools to repair it.

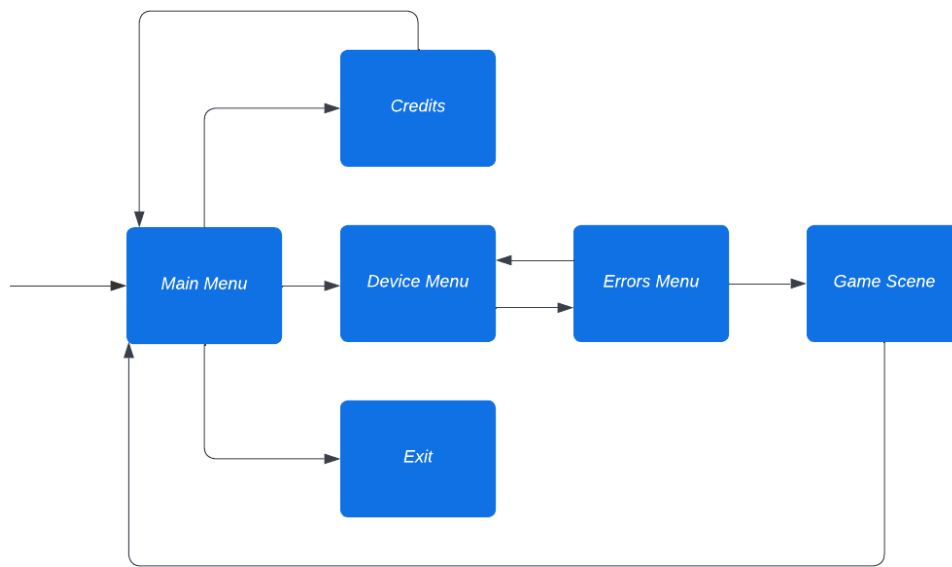
In all menu scenes, the play doesn't move, he interacts with the joystick using ray cast interactions. In the main game scene, he will be able to move freely and use hand interactions with the objects with grabbing and ray casting.

- THEME

Game theme is a clinical theme with bright hospital lights and basic hospital design with big 2-sided doors, stainless steel equipment and a bed with soft matric.

- GAME FLOWCHART

The game starts with the menu scene then the player chooses to start. Device scene appears letting the player to choose which device to train on, and then errors menu appear to let him choose an error and proceed to the main game scene.



- GRAPHICS

Cold, realistic hospital graphics with no effects added on the environment.

- AUDIO

There will be no background music but it tools sound will exist.

- DEVELOPMENT

The game has many interactive objects in the environment like the tools the player use or the medical equipment in the room.

The level ends (player wins) when he solves the error of the device. The player interacts with object through grabbing objects and raycast interactions.

Scripts:

DrillerHandler

HammerHandler

DebugUISample

Prefabs:

600 Watt Power Supply Unit (600wattpsu)

Electric Driller (Drill_01_4k)

Hammer (wooden_hammer_01_4k)

Screw Driver (Screw_Cross)

Wrench (Wrench_Combination)

Pilers (Pilers)

Bolt (Bolt)

Screws (Screw_Cross)

Ultrasound Device (LOGIQ Ultrasound)

US Board (motherboard)

US Board 2 (TI)

Device Rack (rack)

Cabinet(MedicalCabinet 1)

Medical Bed (GourneyED)

Ceilings

Decals

Floor

Props

Walls

- SCHEDULE

- Finding the device model
- Set up the Environment
- Model the needed un found models
- Implement the grabbing of the objects
- Implement maintenance logic