

Assignment 03 (Individual) – GAMES DEVELOPMENT

SE4031 – Games Development

Title – *Immersive VR Psychological Survival Experience*

Assignment Created By: Mr. Aruna Ishara Gamage, Mr. Nushkan Nismi

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Assignment Weight: **30%**

OBJECTIVE

Silent Ward – Infected Zone

Design and develop an immersive Virtual Reality (VR) psychological survival experience application using Unity, where the player explores an abandoned facility affected by a mysterious infection outbreak. The experience must focus on atmosphere, decision-making, environmental interaction, and psychological survival, rather than fast-paced combat. **⚠ This is NOT a combat-focused game.**

ASSIGNMENT STRUCTURE (2 Parts)

- **Part A (60%) – Based on Tutorials + Lab Sheets**

Students can score Part A using concepts and techniques covered in tutorials and lab sessions.

- **Part B (40%) – Self-Learning + Advanced Work (Required for High Grades)**

Part B requires independent research and creativity, focusing on voice-based ritual invocation and a unique sanctuary challenge.

CORE REQUIREMENTS

Part A Requirements (60%)

1. VR Movement & Locomotion

- Use **teleportation** or **joystick-based** movement.
- Allow safe and comfortable navigation across infected environments (rooms, corridors, wards, zones)

2. Infected-Zone Interactables

- Implement at least three (3) of the following:
 - **Doors** (locked / unlocked, slow or heavy opening)
 - **Light switches, breakers, or generators**
 - **Notes, files, or audio recordings**
 - **Key items** (keycards, batteries, fuses, tools)

3. VR UI Elements

- Include a HUD or VR-friendly UI display:
 - Current objective or hint
 - Warning indicators or awareness cues
 - Timers or condition indicators

4. Basic Environmental Feedback

- Ambient **sounds**, **alarms**, or **distant** infected noises
- Environmental responses to player **movement** and **interaction**

Part B Requirements (40%) – Self Learning

5. Psychological Command System (Voice Input Only)

- The player must trigger at least **three (3)** psychological survival actions using voice commands only.

Example Commands (DO NOT USE):

- “Calm” – Reduces panic effects
- “Focus” – Stabilizes vision or audio distortion
- “Hold” – Suppresses stress-based reactions

IMPORTANT NOTE

- The ritual names listed below are **EXAMPLES ONLY**
- Students **MUST** create their **own original** psychological command phrases
- Using the example words exactly as written will result in **0 marks** for this component.

The system must:

- Accurately detect commands using voice input tools (e.g., Windows Speech API (wit.ai)).
- Provide visual/audio feedback upon successful commands recognition.
- Show a response or warning for unrecognized commands.
- When the application is built and executed directly on a VR headset, the Windows Speech API will not function. However, the same voice command system will work correctly when the application is built as a Windows Desktop (.exe) and run on a PC with a connected VR headset.

6. Voice Command Integration

- **Integrate a real-time** speech recognition system.
- Provide **visual** and/or **audio** feedback for:
 - **Correct** psychological commands
 - **Incorrect** or **unrecognized** commands
- Voice recognition must remain responsive during gameplay

7. Dynamic Infected-Zone Reaction System

- Psychological commands and player decisions must trigger clear environmental reactions, such as:
 - **Light flickering or shutdowns**
 - **Sound distortion when infected** are nearby
 - **Doors locking or unlocking**
 - Visual effects (fog, vignette, camera effects)

8. Survival Challenge Area (Mandatory)

- **Include** a dedicated infected-zone challenge where the player must:
 - **Use** voice commands under pressure
 - **Combine** exploration, interaction, and avoidance
 - **Successfully** complete a psychological survival or escape scenario

Part B Creative Challenge Note

Part B includes a creative challenge, and it must be unique (**not copied from other students**) to score marks.

Folder Structure & Code

- Unity project must follow the folder structure.
- Scripts and assets must be well-named and organized.

Game Documentation

- Submit a PDF with:
 - Title, student name, and IT number
 - Game summary and spell list
 - Screenshots of gameplay
 - Control guide (movement, voice usage)
 - Credits for any assets/tools used

Submission Requirements

- **Windows .exe Build**

Include .exe and Data folder, playable with a VR headset.

- **Zipped Unity Project Folder**

Must follow the folder structure.

Upload to a shared Google Drive folder in Courseweb.

- **Gameplay Demo Video**

- 5 minutes showcasing:

- Voice-activated spellcasting
 - Movement
 - Item collection and target interaction
 - Spellbook interaction
 - Challenge zone gameplay

PLAGIARISM / ORIGINALITY VERIFICATION (VIVA)

- A mandatory one-to-one viva will be conducted
 - Students must clearly explain:
 - Voice command logic
 - System interaction behavior
 - Emergency challenge design
- Failure to justify originality may result in mark deductions or zero marks

Assessment Rubric (Part A + Part B)

Part A (60 Marks)

Criteria	Excellent	Good	Satisfactory	Poor	Marks
VR Movement & Locomotion	Smooth, immersive, and comfortable navigation across infected environments	Navigation implemented with minor comfort or control issues	Basic navigation with noticeable limitations	No or broken navigation	12
Infected-Zone Interactables	All required interactables fully implemented with clear visual/audio feedback and logical consequences	Most interactables working with minor issues	Limited or partially functional interactables	No meaningful interactables	12
VR UI Elements	Clear, minimal, VR-friendly UI supporting objectives and survival awareness	UI mostly clear with minor usability issues	Basic UI with limited usefulness	No VR UI elements	10
Folder Structure & Code Quality	Fully structured Unity project with clean, well-named scripts and assets	Mostly structured with few misplacements	Inconsistent structure	Disorganized or missing structure	8
Game Documentation	Complete and clear PDF covering all required sections	Mostly complete with minor missing details	Basic documentation with limited explanation	No documentation submitted	8
Part A Total					60

Part B (40 Marks) – Self Learning

Criteria	Excellent (Full Marks)	Good	Satisfactory	Poor	Marks
Voice-Based Psychological Commands (Voice Only)	Three (3) unique psychological survival commands accurately triggered via voice with clear visual/audio feedback	Two commands working, one partially functional	Only one unstable or partially working command	Commands missing or not voice-controlled	20
Voice Command Integration	Voice system is stable, responsive, and provides clear feedback with captions	Minor delays or recognition issues	Frequently unresponsive or inconsistent	Not implemented or unusable	12
Environmental Reaction + Survival Challenge Area	Strong psychological immersion with dynamic infected-zone reactions and a fully playable survival/escape challenge	Working challenge with minor functional issues	Weak reactions with a basic or low-threat challenge	Poor or missing reactions and challenge	8
Part B Total					40

Plagiarism / Originality Verification (Viva)