MIND PALACE

A sound-centered virtual reality narrative about maladaptive daydreaming, capitalist alienation — and what happens when escape becomes another closed loop.

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Meta Quest 3S — standalone Android build · **Unity 6** (6000.2.10f1) · URP · **OpenXR** + XR Interaction Toolkit · **Hand tracking** & controllers · **4 scenes** · 69 C# scripts · ~16k lines · Generative, **DSP-clock-synced** scores

01 THE PROJECT

Mind Palace follows a worker who escapes the monotony of the assembly line into a daydream — only to watch the dream slowly rebuild the very structures it promised to dissolve. Across four scenes the same basic gestures — grabbing, throwing, sorting, placing — are recontextualized: from **labor** to **play** to **compulsory work** to **creative performance**. The experience treats escape as necessary and imaginative, while asking what happens when the fantasy starts reproducing quotas, commutes, and clocks of its own.

Sound is not an added layer; it carries the narrative. Every scene runs a generative, sample-accurate score in the spirit of Brian Eno's tape-loop systems — incommensurate loop periods, pentatonic constraints, and one shared DSP grid per scene — and every player action lands on that grid as a quantized musical event. In the finale, the loop the player builds reveals itself as the factory clock striking 9:00, and the experience returns to the beginning for a subtly faster, detuned second shift.

ONE GESTURE, FOUR MEANINGS

SCENE 1 · FACTORY **Sort cubes under a quota**	Labor, conformity, measured output
SCENE 2 · PLAYGROUND **Throw cubes to paint & sound the room**	Release, play, creative agency
SCENE 3 · METRO **Clean trash while commuters loop**	Work returning inside the fantasy
SCENE 4 · CONCERT **Build a loop that becomes a clock**	Creativity captured by repetition

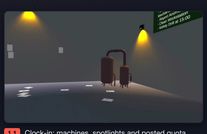
30	76→82	20	58	20	12	9:00
quota cubes before the anomaly appears	BPM — the factory grid, faster on the second shift	wall hits to collapse the playground	BPM — the metro ensemble in A-minor pentatonic	trash items collected for the cleanup cart	radial sequencer slots — the player's own loop	the loop reveals itself as the factory clock

02 STORYBOARD — A CIRCULAR JOURNEY

FACTORY → PLAYGROUND → STREET → METRO → CONCERT → CLOCK ↺ SECOND SHIFT — BACK TO THE FACTORY

1 THE SHIFT — THE FACTORY · WHERE THE ROUTINE LIVES

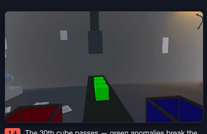
The player works a conveyor line, sorting thirty red and blue cubes into color-matched bins under factory spotlights. After the final quota cube, impossible **green anomaly cubes** invade the line — touching one tears the player out of the routine and into the daydream.



1.1 Clock-in: machines, spotlights and posted quota notices

1.2 Red and blue cubes ride the conveyor toward the player

1.3 Sorting into color-matched bins — every sort sounds a note



1.4 The 30th cube passes — green anomalies break the system

♪ **Generative machine score.** A mechanical ostinato and incommensurate tape loops are sliced at runtime from real machine recordings: steam breaths and the player's sorting notes share one sample-accurate DSP grid, so labor itself becomes a quantized pentatonic melody.

2 THE COLORFUL PLAYGROUND — THE DAYDREAM OPENS

Twenty glowing colored cubes replace the factory's restricted red/blue system, each carrying its own synth voice. Thrown cubes repaint reactive walls with their color; after twenty hits the saturated room **collapses** — revealing a whole city outside.

2.1 Twenty colored cubes wait in the dark — the restriction is lifted

2.2 Throwing paints: a violet cube hurled at the glowing wall

2.3 The room saturates — cyan, magenta, yellow walls of sound

2.4 Hit twenty: the walls fall away into an open city street

♪ **Color becomes timbre.** Each cube color triggers its own synth tone on impact, so physical play becomes performance; on collapse, the ambience director cross-fades the enclosed room into procedural city rumble and repaired street sources.

INTERLUDE — THE STREET

Between dream-rooms the player walks a free, open-air city: storefronts, strangers, a busker playing in the evening light. Freedom feels real — until the street quietly funnels everyone toward a subway entrance.

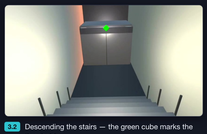
— The procedural city — its ambience assembled at runtime

— A street musician plays as commuters drift toward the metro

3 THE PLATFORM — THE METRO · WORK RETURNS INSIDE THE DREAM

Down in the metro the fantasy starts reproducing work. A train arrives, exchanges passengers and departs in an endless commuter cycle — NPCs wander on NavMesh, then board and exit through authored waypoint chains and reappear at their original positions. The player, recast as **cleaner**, must collect twenty pieces of trash with a following cleanup cart.

3.1 The street narrows into the SUBWAY entrance



3.2 Descending the stairs — the green cube marks the threshold

3.3 The platform: train, sliding doors and looping commuters

3.4 Cleaner duty — twenty pieces of trash for the cart

♪ **A station that composes itself.** Bench tape-loop pads, fluorescent-hum drones, trash-can tick patterns, rail ostinatos and NPC voices lock to one DSP grid in A-minor pentatonic; PA speakers play TTS announcements hooked to live train events, and every collected item adds a quantized melody note.

4 THE CONCERT / THE LOOP — THE DREAM'S REWARD — AND ITS TRAP

An outdoor concert between mountains and sea: a performing band, stage trusses, and a fourteen-person responsive audience. The player takes over by placing sound orbs into a **twelve-slot radial sequencer** — and as their loop grows, the band falls silent and the crowd turns to face the player. When the loop completes, the sequencer slows into a clock face at 9:00.

4.1 The band performs on the festival stage

4.2 A responsive crowd between the mountains and the sea

4.3 The radial sequencer — twelve slots, the player's own loop

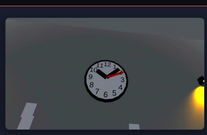
4.4 The loop completes — and slows into a clock face at 9:00

♪ **Hybrid stem playback.** 2D stereo stems and 3D spatial stems emitted from stage objects stay sample-locked on one DSP clock; the player's sequencer loop gradually replaces the concert until only their pattern — then only ticking — remains.

EPILOGUE — THE LOOP CLOSES

The clock strikes 9:00 and the dream dissolves through a wireframe void back onto the factory wall. The player wakes at the conveyor for a second shift — subtly faster, slightly detuned. Escape has become the loop.

E.1 The dream dissolves — the sequencer collapses into pure time



E.2 The same clock — now hanging on the factory wall

E.3 Second shift: the conveyor restarts, the cycle begins again

03 IMPORTANT HIGHLIGHTS

Generative, Eno-inspired scores

The factory and metro scores are **assembled at runtime** from machine recordings and procedural synthesis: incommensurate tape-loop periods, pentatonic pitch constraints and sample-accurate DSP scheduling. There is no fixed soundtrack — the music never repeats exactly.

Sound as narrative structure

Every player action is a musical event: sorts, throws, trash deposits and orb placements all land as **quantized notes on the scene's shared grid**. The story of labor, play and capture is told by what the player hears themselves do.

Hybrid spatial audio

Scene 4 mixes 2D stereo stems with **3D spatial stems emitted from stage objects**, all DSP-clock synced; the metro PA plays TTS announcements triggered by live train arrivals and departures.

Full XR interaction on Quest 3S

Hand tracking and controllers through OpenXR / XR Interaction Toolkit: physics-based grab, throw, sorting, cleanup and placement — tuned for standalone VR with anti-jitter grab configs and continuous-collision card deposits.

Procedural world-building

69 runtime scripts and editor generators (~16k lines of C#) construct the scenes: self-bootstrapping music and ambience directors, automatic colliders with NavMesh carving, blob shadows and light-probe tooling for performant Quest rendering.

A living NPC ecosystem

Commuters wander on NavMesh, then board and exit trains through **authored waypoint chains** in a perfectly cyclic loop; the fourteen-person concert crowd reacts as the player's loop takes over the show.

Deliverables: **Quest APK build** · **90-second teaser** (full audio) · **Original headset recording** — 12 min, all four scenes · **MUS 442 Final Report** · **Musical System Map** · **This presentation board**

semihapaksoy.com
Portfolio, project page, teaser & full documentation

All storyboard frames captured from the original Meta Quest 3S headset recording · github.com/smhpk-1/mixedreality-graduation-project