Circuit Snake

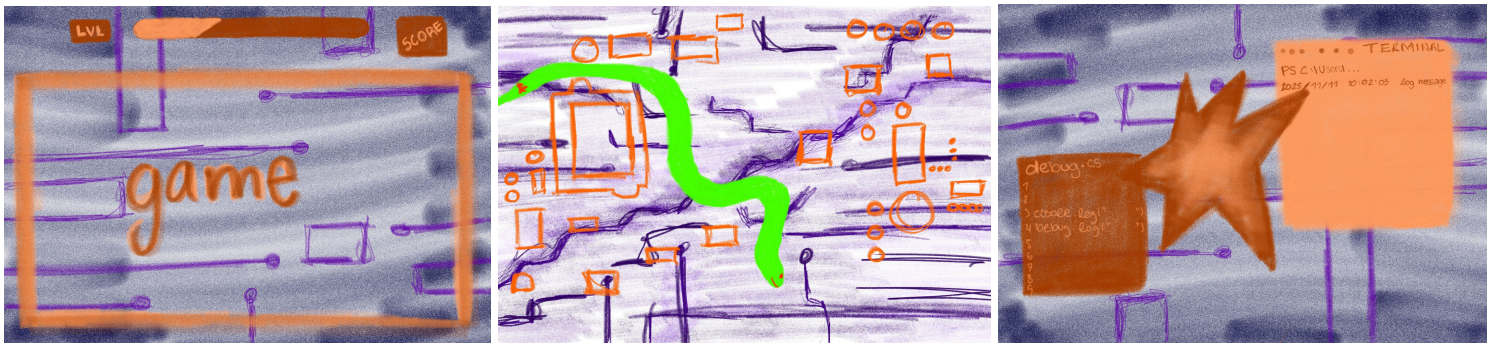
Summary

The player will control a Trojan “snake” virus that infiltrates a computer’s circuit board, collecting data packets and installing backdoors whilst avoiding firewalls and antivirus drones. The player's goal is to stay alive within the infected system and spread the infection (virus).

The circuit grid itself will be neon and cyberpunk-inspired (bright, futuristic) and feature glowing traces, with occasional terminal overlays. The snake itself will be bright neon-green and have a Trojan helmet or a small sticker icon to signify its virus. The interface will have visual “glitch” effects to emphasize the instability of the computer the player is corrupting.

The game will be played using swipe motions (mobile) and the WASD keys (desktop) to move the snake around the grid, avoiding static firewalls and moving antivirus drones. Collecting data packets allows the snake to grow longer (representing the segments of data it’s stealing), and increases score. When a certain number of collected packets is reached, an obstacle will be temporarily disabled or a hidden path will be revealed.

Screen mock-ups:



(From left to right): Terminal UI, Grid with snake, Glitch transitions

Progression

Progression will be shown through the usage of system layers (the deeper the snake goes into the system, the harder the ‘level’ becomes, introducing new mechanics).

- ★ (LVL 1) Layer 1: Static walls and data packets (introduction/tutorial)
- ★ (LVL 2) Layer 2: Moving firewalls/antivirus drones
- ★ (LVL 3) Layer 3: Circuits rearrange, visibility is reduced
- ★ (LVL 4) Layer 4: System becomes unstable, circuits rearrange dynamically
- ★ (LVL 5) Layer 5: ‘Boss-level’
    - The computer is taken to a repair tech, which is detrimental to the player’s goal and threatens its virus. There will be flashing warning icons and fake progress bars simulating an antivirus software scan. The snake must outrun and out-collect the rival ‘clean’ virus, which is controlled by AI. Both snakes will race to collect data packets, with collisions

costing the player to lose a segment of data previously collected. The first to reach a certain target number of packets wins the level: the player's snake either escapes and resumes living in the corrupted computer or is deleted by the anti-virus.
    - If win: A cut scene of the snake living happily, then shut down.
    - If lose: A system shutdown appears to conclude the game.

Assets

- Sprites (Created in Photoshop/Fresco)
    - Trojan snake body and helmet head
    - Cleaner Virus (enemy snake with blue "shield" design)
    - Data packets (glowing cubes)
    - Firewalls and drones
    - Background circuit texture
- Sound Effects (Freesound.org, Pixabay Free Sounds, etc.)
    - Data collection ping
    - Firewall zap
    - Warning sirens and heartbeat pulse during LVL 5 (boss level)
    - End-level "shutdown" sound
- Animations
    - Smooth tail follow
    - Drones patrolling
    - Flickering glitch transition
    - Boss level flashing UI elements (ex, "System Virus Scan: 67%")
- UI
    - Score and system layer indicators
    - Boss-level bar showing Trojan vs. Cleaner Virus progress

Length of Play

Each level/layer is aimed to take between 1-3 minutes, so with it broken down into five system layers, it should last around 10 minutes total. Earlier levels will be easier (1-2 minutes to complete), while later levels will take 2-3 minutes. The last level, the boss fight, is intended to take around 3 minutes to create a climactic challenge and player satisfaction.

Techniques

What techniques are you using, and how? For full credit, you need at least 4 of these.

- Touch/Keyboard Input: Movement control via swipes/WASD keys
- Collision/Physics: Handle tail following, pickups, walls, and enemy detection.
- Procedural Levels: Random circuit layouts and packet placement
- UI: Scores, progress, and boss indicators.
- AI/Navigation: 'Clean' virus opponent logic for the final level ('boss fight').