Práctica 5

Smail Dahmani

UNIVERSIDAD DE GRANADA

Entornos virtuales

SHADERS IMPLEMENTED
1. monitor_shader.gdshader — res://shaders/monitor_shader.gdshader
  • Purpose: Realistic CRT monitor effect for security camera displays

2. sky_shader.gdshader — res://shaders/sky_shader.gdshader
  • Purpose: Enhanced sky/background for outdoor gym environment

GDSCRIPT CODE SYSTEMS
1. Interactive Door System — res://scripts/interactive_door.gd
  • Features: E-key + mouse interaction, signals for communication, smooth open/close

2. Object Grabbing System — res://scripts/grabbable_object.gd
  • Features: Physics-based grabbing, E-key + mouse grab, smooth follow while carried

3. Room Loading Optimization — res://scripts/room_loader.gd
  • Features: Load/unload rooms dynamically to save memory and improve performance

4. Motion Light System — res://scripts/motion_light.gd
  • Features: Detects proximate player and turns the light on if it's off; integrates with existing lighting/animation systems

VIEWPORT RENDERING SYSTEMS
Security Camera Network
  • Multiple SubViewports rendering different camera angles
  • Real-time output to monitor displays
  • Integrated with custom monitor shader

ANIMATION SYSTEMS
1. Light Motion System
  • Purpose: Animated lighting with continuous, realistic motion

2. Door Animation System
  • Purpose: Smooth open/close transitions with bidirectional playback

ADDITIONAL ENHANCEMENTS
  • Physics integration: CharacterBody3D controller, RigidBody3D grabbables, StaticBody3D collisions

P5.A PROBLEM ANALYSIS:

Object transportation issue:
When implementing room loading/unloading for performance optimization, grabbed physics objects (dumbbells) face a critical problem:
if a player is carrying an object and the room containing that object's origin gets unloaded, the object gets deleted mid-transport.

Proposed solution:
1. Move grabbed objects to a persistent scene that doesn’t get deleted before unloading their origin room
2. Don't unload rooms that contain active objects