

I3E-ASG1

Git repository for I3E assignment 1

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Overview

This is a Unity 3D game featuring a player navigating through hazards, collecting coins and treasure chests, and opening and unlocking doors. The player has health and can take damage and die from environmental hazards.

How to Run the Game

Platforms/Hardware:

- Compatible with Windows PC
- Game tested with keyboard and mouse controls.

Installation:

- Clone or download the project repository.
 - Open in Unity Editor.
 - Build and run for target platform or run from the Editor play mode.
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Controls

Action	Key
Move forward/back	W / S
Move left/right	A / D
Interact (Collect coins, key, open locked door and collect treasure chests)	E
Jump	Spacebar
Sprint	W/A/S/D + hold shift

Game Mechanics & Features

- **Health System:** Player starts with 100 health points. Health decreases upon contact with hazards (e.g., spikes, lava, poison).
- **Damage Sources:**

- Lava pool and spikes cause instant death.
 - Lava bricks deals 15 damage per second.
 - Poison area deals 10 damage per second.
 - **Normal Doors:** Doors that are not locked require the player to step on a pressure plate in front of the door. Stepping on the pressure plate will trigger the door to open.
 - **Locked Door:** Requires a key to unlock. Players need to find the key to unlock the door.
 - **Coins:** Collect coins scattered throughout the level to increase player score. Each coin increases the player score by 10.
 - **Key:** When the player fulfils the requirement, the key will automatically spawn and the player can collect it.
 - **Treasure Chest:** Collect a special treasure chest to gain bonus points and trigger game completion message.
 - **UI Prompts:** Messages appear when interacting with objects (E.g "This door is locked..." message appears when trying to open the locked door without the key).
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Game Hacks / Cheats (If Any)

- None implemented.
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Known Limitations / Bugs

- Player health does not regenerate.
 - No pause or save functionality currently implemented.
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Assets and Credits

Audio/Sound effects

- [Coin collection sound](#).
- [Take damage sound](#).
- [Open locked door sound](#).
- [Open door sound](#).
- [Victory sound](#).
- [Background music](#)
- The rest of the audio were taken from [Mixkit.co](#).

Models and textures

- The pillars, torches, goblet and treasure chest models were done by me from my previous assignments.
- Pillar texture was taken from [Polyhaven](#).
- Torch textures were taken from [3D Substance Share](#).
- Treasure chest and goblet textures were done in Adobe Substance Painter using the built-in textures.
- The rest of the models were built using Unity ProBuilder.

Code References

- The open door animation and code in the DoorController script was taken from a YouTube channel called [SpeedTutor](#).
 - The coin collection code in the CoinCollection script was taken from a YouTube channel called [Rigor Mortis Tortoise](#) with a little modification done by myself.
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Puzzle Solutions / Answers

- **Locked Door:** The key to unlock the door only spawns when the player score reaches 50. Therefore the player must collect all 5 coins in order for the key to spawn.
 - **Glass Bridge:** Step only on safe tiles to avoid falling into lava.
 - **First row:** 1st, 3rd and 5th tile are safe.
 - **Second row:** Only 3rd tile is safe.
 - **Third row:** Only 2nd and 3rd tile are safe.
 - **Fourth row:** Only 2nd and 4th tile are safe.
 - **Fifth row:** Only second tile is safe.
 - **Ideal route:** 3, 3, 3, 2, 2
 - **Treasure Chest:** Collect all coins first to spawn the key, then unlock the door to access the chest.
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