

Intro to Game Design – Final Project using Unity2D

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High Level Concept/Design

Working title:

Super Mario Brothers: A Unity Homage

Concept statement:

Recreate the legendary level 1-1 from the original classic Super Mario Brothers. The game invites players to jump, run, and navigate a challenging level in a nostalgic, side-scrolling adventure.

Player experience and game POV:

The player controls Mario, a pixelated plumber in a vibrant, 2D platformer. The game world is brimming with familiar elements such as blocks, power-ups, enemies, and challenging platforms. The player's goal is to traverse the level, defeat enemies, collect coins and power-ups, and reach the flagpole at the end. The game aims to evoke feelings of excitement, nostalgia, and accomplishment when players successfully navigate through the game.

Genre(s):

2D Platformer

Product Design

Visual/audio Style:

The game's visual style is a pixel art aesthetic, reminiscent of the original Super Mario Brothers. The art and design feature vibrant colors, charming character designs, and iconic level design. The audio style includes catchy, upbeat chiptune music and memorable sound effects that complement the game's visual style and enhance the overall atmosphere.

Platform(s) and primary technology:

The game is targeted for PC and is developed using the Unity 3D engine, which provides simplicity and ease of development.

Schedule and scope

The project took approximately 10 to 30 hours spread across 30 days to complete. The game provides a short, 30-60 second gameplay experience that can be replayed indefinitely, mirroring the endless fun and replay ability of the original game.

Game world fiction:

Super Mario Bros. World 1-1 is set in the Mushroom Kingdom, a vibrant and colorful 2D world with various terrains and environments. The player controls Mario, a plumber on a mission to traverse the level, defeat enemies, and overcome obstacles.

Objectives and Progression

The player's goal in Super Mario Brothers: A Unity Homage is to navigate the level, defeat enemies, collect coins and power-ups, and reach the flagpole at the end of the stage. This aligns with the game's nostalgic, side-scrolling adventure theme.

Interactivity

The player's moment-by-moment actions in the game include running, jumping, crouching, and interacting with objects such as power-ups and enemies. The player moves through the world using directional inputs on a keyboard or controller, with additional buttons for jumping and other context-sensitive actions.

Internal structure

In recreating Super Mario Bros. World 1-1 in Unity 2D, the game objects, attributes, and behaviors can be broken down as follows:

Locations/Levels: World 1-1 is a side-scrolling level with a fixed width and height. The level is designed with a combination of platforms, pipes, and obstacles.

Player Character: The player controls Mario, who has attributes such as position, speed, health, and state (small, big, or invincible). Mario's behaviors include walking, running, jumping, and interacting with objects.

NPCs: The game features enemies like Goombas and Koopas, each with unique attributes and behaviors. For instance, Goombas walk along the platform, while Koopas retreat into their shells upon collision. These enemies can be defeated by the player.

Collectibles: There are various collectibles in the game, such as coins, power-ups (including the Super Mushroom and Starman), and 1UP Mushrooms. These have attributes like position and type, and behaviors like appearing, disappearing upon interaction, and affecting the player's state.

Special Effects: The game includes a variety of visual and audio effects, such as particle systems for jumping, defeating enemies, and collecting power-ups.

Obstacles: There are several obstacles in the game, including pipes, pits, and breakable bricks. Some pipes can be entered, leading the player to a sub-area where they can collect additional coins.

Goal: The player's goal is to reach the flagpole at the end of the level while avoiding or defeating enemies and collecting power-ups and coins.

Core loops

The core gameplay loops in Super Mario Bros. World 1-1 involve the player performing a series of actions repeatedly to progress through the level and reach the end goal. These core loops include:

Navigating the terrain: The player moves Mario left or right while jumping over pits, onto platforms, and avoiding or defeating enemies.


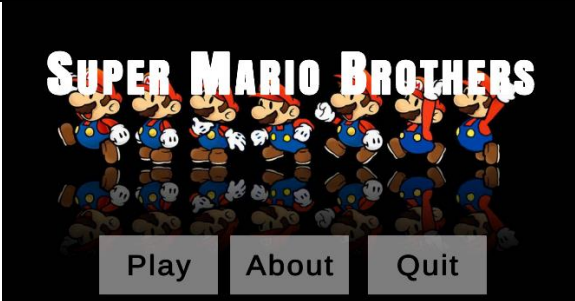
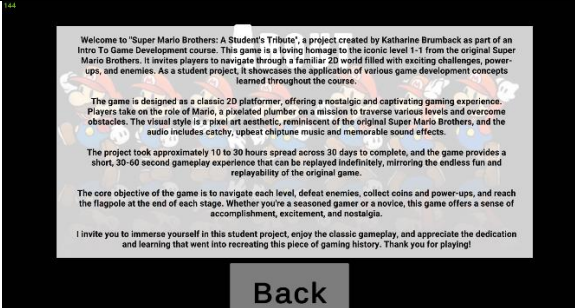


Collecting power-ups: The player interacts with "?" blocks to reveal power-ups like Super Mushrooms or Starman, which grant Mario temporary abilities or health.

Defeating enemies: The player jumps on enemies like Goombas and Koopas to defeat them and prevent them from harming Mario.

Collecting coins: The player jumps to grab coins scattered throughout the level or hidden within blocks, increasing their score.

These core loops are engaging because they provide a satisfying balance between challenge and reward, with intuitive controls and smooth gameplay. The loops support the game's goal of reaching the flagpole at the end of the level while maximizing the player's score and enjoyment. The game's pacing, difficulty curve, and level design encourage players to explore, experiment, and master the game's mechanics.

Reference Documents & Pictures:

Audio:	MarioBrothersAudio
1:1 Grid for recreation of Super Mario Level	
Main Menu	
About; project details	
Pause Menu	
Underground	
End Level	