Mario Project Review

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# Introduction

This report will contain a summary of the work done on the recent GEC assignment. The game created was a Mario style game whereby the player(s) can control either Mario or Luigi. The objective of the game is to collect the coins whilst avoiding or killing the enemies (Koopas) who would move left/right across the screen on different platforms.

# Menu

Once loaded, the Game Screen Manager class loads the Menu screen by default. This Menu screen is used as an indicator of how to play the game by showing the player the character controls along with what they should avoid (Koopas) and what they should collect (Coins). Hitting ‘RETURN’ on the keyboard begins the game as advised and cues the Screen Manager to switch to Level 1.

The ‘Menu’ screen, was created using assets provided by Staffordshire University for use on this project but compiled together by the author using Photoshop.

# Level 1 Screen

After the ‘RETURN’ key has been pressed on the menu screen, the music will start and the game will begin. Level 1 features obstacles in the way of ledges. These ledges have collision via a tile system created in the Level Map class. If a tile is set to ‘0’ then there exists no collision however, if a tile is set to ‘1’ then neither Mario/Luigi can pass through these tiles. As well as the ledges, there are 2 enemies which the player needs to avoid/kill and 6 coins which the player can collect. This level also features four pipes (one in each corner) that the player/enemy can traverse through. If a player enters a pipe, they will be transported to the pipe diagonally opposite.

The ‘Level 1’ screen asset was provided by Staffordshire University for use on this project.

# Mario/Luigi

The game featured a control scheme whereby the Mario player could move Left and Right along the X-Axis by pressing Left Arrow or Right Arrow respectively. The player could also move Up along the Y-Axis by jumping by pressing the Up Arrow. Luigi has the exact same functionality as Mario bar the controls, whereby Left Arrow, Right Arrow and Up Arrow are replaced by ‘A’, ‘D’ and ‘W’.

Animations were added to both characters to ensure that they are always facing the direction in which they are moving. Alongside this, there is a 2-frame animation whilst moving left and right and a 1-frame animation for jumping.

Base sprites for Mario/Luigi were provided by Staffordshire University for use on this project. Additional sprites were created by the author.

# Koopa

The Koopa is programmed to move left and right along the X-Axis. If a Koopa hits a wall, they will swap direction and begin moving in that direction. Koopas will kill Mario/Luigi upon colliding with them except if the value of the Y-Axis of either Mario/Luigi is higher than the Koopas, in which case, they will become injured and flip upside down for a set amount of time. If Mario/Luigi collide with the Koopa again whilst in this state, the Koopa will die.

There is a walking animation for the Koopa when uninjured and the switch to the Koopa’s shell when injured.

Base sprites used for Koopa was provided by Staffordshire University for use on this project. An additional sprite was created by the author.

# Coin

On the Level 1 screen exist 6 coins which either Mario/Luigi can collect. No functionality has been added for these however, the author would have liked to add a scoring system whereby collecting a coin would add to the total score value.

Animations for the coins were implemented so that they rotate on the spot.

The assets used for the Coin was provided by Staffordshire University for use on this project.

# POW Block

There is one POW Block located in Level 1 of the Mario game which is set to ‘2’ on the LevelMap so as to avoid collision not working if set to ‘1’. The POW Block has three charges and if either Mario/Luigi jump into the POW Block from below, the POW Block will lose a charge, the size of the POW Block will shrink by a third, the screen will shake, any uninjured Koopa will be injured and any injured Koopa will have their injured time reset. Once the POW Block has been hit three times, it will disappear and the level map is set to replace the values to ‘0’ to ensure no further collision can be had on these tiles.

The assets for the POW Block were provided by Staffordshire University for use on this project.

# Audio

There is no audio on the Menu screen of the game. It is only when the player hits ‘RETURN’ on the keyboard where the music is initialised. This music loops throughout the level, only stopping once the game has been exited.

The assets for audio were provided by Staffordshire University for use on this project.

# Images of Game

Start Screen:

# 

During Gameplay:

# 

When Paused:

Game Over Screen:

Win Screen:

# Bibliography