

CGRA151 Project Report

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Name of game/artwork: Return of Bubble Bobble

Vision

The aim of the game was to recreate the 1988 classic retro game “Bubble Bobble”. The game is a platformer. 1 or 2 people go through each level with the ability to shoot bubbles to trap enemies. Trapped enemies die if the player pops the bubble or if the bubble reaches the top. Once all enemies in the level are killed the players move to the next area. Each player has a set number of lives, lives aren’t gained from levels and once all lives are gone that player is out for the round. If both players die during the level, then the game is ended.

Achievement

I was able to recreate all the basic functions from the original retro game apart from the variety of enemies. All the players functionalities, physics and interactions between entities are working as I wanted them to. The game is also stylized with self-made sprites and entities. The game has 3 different pages (main menu, controls & end screen). The only things I didn’t achieve from my plan were making numerous enemies and page transitions.

Technical Challenges

The main technical challenge I faced was the optimization of code, due to the amount of iterations (for loops for: bubbles, players, tiles, enemies, items etc) the program ran considerably slow as though it was a slideshow. In order to overcome this, I nested multiple functions in the same loops and created if statements to check if certain calculations needed to be made (i.e. making a move / moveMonsta function to not calculate distances each iteration for monsta’s).

The map creation was also troublesome, as randomly generated tiles would create unappealing maps and hand-coding each tile would be tedious and slow. I ended up creating a load level function which allowed a text file to be loaded as the map, with customizable patterns. By using the modulus operator of the level, the game can repeat tile-maps, meaning no shortage of gameplay after a cycle has completed.

Reflection

I felt as though the assignment went alright. The creation of the visuals was definitely the easiest part whilst the platform physics the hardest. My plan nearly matched reality, with only a few things not implemented which was mentioned above. Overall, I think I bit more than I could chew. I reckon if I were to redo this assignment, I would choose a plan that didn’t involve taxing algorithms such as A* (which vastly decrease performance). I feel it would be more fun to instead do a platformer with an explorable world (like Mario) and create a ton of visuals.