CSCU9N6 Assignment 2022

# The game Idea

My idea for the game was to create a platform game where you are a knight trying to find the hidden treasure in a forest. You can collect coins along the way, and you need to find 3 keys to be able to open the chest.

# Implementation

I started about a week after the assignment was handed out and I felt like everything was going quite well. I added the player sprite and got the tilemap working with custom map images. After adding my desired images, I looked at how to get parallax scrolling working. I found this quite easy to get working and didn’t take me too long to get sorted.

I then looked at basic movements such as moving left and right. I did this by having 2 states, moveRight and moveLeft. These would change based on what key you were pressing down. And on release, the state would return to false. When I got that working, I then implemented the jump feature. At this point, I realised I need to add the collisions.

I then hit a snag in the tile collision code which I probably spent too long on. However, after probably 2 weeks on the collision code, I found a solution. It was basically to check the corners and see if the X or Y is larger compared to the middle of the tile. This determines what corner is colliding which then makes it easier to tell the sprite what to do when it collides with something. It also will keep the sprite on top of a tile if one edge is still touching as with my first attempt, the sprites were falling through the map.

I then looked at moving the tilemap which I was overthinking until I realised how to change the offsets to make it move with the player. This always keeps the player in the middle of the screen unless you are close to the map edges on the X-axis.

When I got that done, I looked at adding enemies and implementing the goal of the game. I started by adding a slime. When I was implementing the slime, I thought of how I could make it easier to add these into the game so at the same time I added the ability to load sprites from the tilemap. Once that was done, I was able to add multiple sprites of different types also to the game instead of manually adding them to the game. I made the enemy’s health 2 meaning you need to attack it twice however this didn’t work as the player could overlap the enemy instead of bouncing off which would be something I would fix if I was to continue making this game.

I added the functionality for the player to attack an enemy however the animation doesn’t work but the functionality works as if you press the A key and run into an enemy on the ground you can kill it however if you don’t press A and run into an enemy you will lose health.

After implementing the enemies and how the player can attack enemies, I then added a way of having health. I thought that this is a fundamental part of most games and made sense to implement this. I thought that having 3 lives is more than enough but also makes the game challenging.

I then implemented the ability to collect coins. If the player collects a coin, they will get 10 points. At the time the score wasn’t being displayed so that was the next bit that I implemented. I used the code which we were given to implement this.

After implementing the coins, I thought about how the player can end the game. I decided that a player can die by getting hit by enemies and by collecting keys to open a chest. To make it more challenging, I thought of having to find 3 keys instead of 1 to make it more engaging to the player. I found this quite easy as a lot of the functionality for this was like what I have already done. However, I was struggling to find a way to generate the next level.

This leads me on to how I implemented generating a new level. I created a variable to keep track of the current level number. I then created a constant variable to store the max number of levels. This makes the game more dynamic as if the game had say 7 pre-made levels, then you just need to change 1 variable instead of adding a lot of extra code for each level.

I then added the sound for the game. Sound is quite important to help immerse the player into the game’s environment. I added 3 main sounds. One was the starting sound, the background sound while playing the game and a sound that tells you that the game is over. I then added sounds for the different entities in the game such as a sound when you collect a coin or key, when you hit an enemy and when you open the chest. I implemented a sound to play when an enemy collides with the player when the player is not attacking however this sound didn’t play and I’m not sure why however I ran out of time to fix this.

I ran out of time to implement a sound filter however If I implemented it, I would try to shorten the sounds slightly to stop the science at times.

I also could have commented more however, the way I named variables, classes and methods I find to be self-explanatory as to what they are about/doing