CPP Project Report

Group 6: *https://github.com/raddi1972/Who-am-I*

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Game Overview:

The game we have created is called "Who am I?". It is supposed to be a story based 2D Platformer. The plot goes this this: Our character has lost his memory and wakes up in an unfamiliar dungeon. As he crosses various dungeons, he will finds hints about his past and finally realize who he is. We have created the first dungeon till now. We emphasized physics and animation in our basic game. Our Gameplay is inspired by the famous game "Hollow Knight". We have implemented 2 enemies: one that simply crawls on the ground(pretty easy to kill it), another is a Viking that shoots heat-seeking plasma shots, i.e, the shots follow you, wherever you go. We have to kill the viking before the plasma shot hits us. Each time we are hit by the plasma shot, we lose some of our health. On the top of the screen we have our health bars, our character dies when the health bar empties. On the top corner we have also implemented the Score functionality. When we hit any enemy a particular amount of times, the Score gets incremented by 1.

Instructions to play the game:

In order to open the game, simply open the "Who am i.exe" file.

The game has simple controls:

- To move left: press A.
- To move right: press D.
- To jump: press Spacebar.
- To Attack: press E
- Control the character while he is mid air (air strafing) using A and D as required.

Code Overview:

- At first some basic classes have been made, namely Object class (to model any object that can be drawn on the game window), Physics class (which handles all physics related aspects of the objects), a Map class (using which a 2D map is set as the background), and a Spritesheet class (which helps to model our spritesheets efficiently).
- The player character (we call him “HollowKnight”) is implemented using a HollowKnight class which is derived from the Object class.
- A few classes have been made to keep track of the health of the player character and the score gained or lost. All of these are also derived from the object class.
- A general Enemy class has been made to model all the enemies that the player will fight with. Different types of enemies such as enemies which can shoot bullets, enemies which just move around etc have been created based on the Enemy class.
- Also different types of bullets (ion balls, bubble attacks) have been implemented using different classes.

Future Scope

This game can certainly be worked on in order to create a deployable game in the future:

- New dungeons can be designed and implemented through which our character will have to pass.
- We can add abilities such as double jump, slide, etc. We can also implement special abilities.
- Various kinds of enemies can be added in order to provide a challenge.\
- A boss dungeon can be implemented which is a lot more challenging than normal dungeons.

Gameplay:

Contribution:

- Rudransh Dixit: Created the main player character (i.e the HollowKnight class). Also made the base classes like Object class and Enemy class. Also built other classes like crawid enemy class. Participated in building Application.cpp also.
- Riddhi Chatterjee: Created the CannonFire weapon class, and the shooting enemy class. Also made the score/points counters and health indicator. Participated in building Application.cpp also. Added the feature of storing Highest scores in a file.
- Prakhar Rastogi: Created the plot for the game, designed the level and created the map. Also created the Map class. Also participated in searching for spritesheets and edited them when needed.
- Anmol Shetty: Created the Ledge class. Also participated in searching for spritesheets and edited them when needed. Created the Spritesheet class.
- Keshav Goyal: Calculated the positions of the ledges based on the map and created SDL rectangles in those positions. Created the attack, and helper classes.