Report

The game consists of 6 classes. Firstly, the mainWindow class is the where the QGraphicsscene is created, and it handles the showing of graphics on the scene and handles most game logic such as collision and the updating of the UI. Ex: player gained/lost a heart picked up a bullet, lost/won.

The sceneview class is just a child class of QGraphicsView that controls the size of the view. The resize function was overloaded to accurately scale the scene when view size changes.

The player class represents franklin and consists of multiple functions, mainly the move function gets the player’s position in regardS to the map and then check the tile which the player plans to move towards according to his direction if it happens to be tagged as a walkable tile then he will be able to move there otherwise he won't. Using timers there are also functions to give the player idle animation and movement animation to showcase the players actions clearly. Ex: moving, picking up an item.

The enemy class is very similar to the player class having several handlers to make sure the right animations work when moving/colliding with the player

Sound manager class is an accessory class that stores all the possible sound effects or background music the game has. An instance of it is created where needed and functions are called to play the specific sound effects needed. It also has a volume changer function that enables the game to mute the music from a settings screen (Esc key)

Collectibles class represents everything that the player is able to collide with. It has an enum that defines its type. It can either be bullets, power pellets, or the exit. The bullets when picked up-

In the Collectibles header file, we added three different object types, heart, bullet and shield. In the Collectibles’ cpp within the class constructor, we set the ui of each project type, attaching the image we would like to show.

In the enemy header file, we added a loseHealth function, and a getHealth function, In the enemy cpp, the lose health function removes 1 from the health, and for get health it just returns the health variable.

In the mainwindow cpp, within the drawscene function, we added the bullet and shielf collectibles into the ui, we set their position, added them as an item, and used the animhandler function to control their animated up and down movement. In the draw UI function, we added an if condition that applies on enemies when their health turns 0, a timer begins, an animation displaying their death, and they are removed from the scene, if both enemies die, a win function is called, that shows the win screen. We also added in the main window the win function, that sets the entire look of the win screen, with labels, color, font, a restartbutton that resets the game settings and a quit button that closes the game.

**Contributions:**

**Ezz:**