
The Game Description

Unit Testing is a simple 2D action maze chase game. In the game, you play as TV Guy who is an experimental subject ready for testing. If he passes all his tests, he will evade the erasure of his code and become immortalized in the master branch. To escape, you need to collect all three key cards on each level to be able to access the staircase to the next test set. Stopping his escape will be gaping holes in the floor and savage screwdrivers designed to chase you relentlessly and ensure that you get taken apart, but be warned your batteries aren't meant to last forever, so be sure to pick up some batteries along the way to keep you powered up! You were programmed for this TV guy, it's in your circuits!

Our game, we believe, has changed significantly from our original design for the better. We based our changes to improve from our feedback on Phase 1, and we believe that they were necessary to get to the state the game is in currently. Regarding how faithful we have been to our original plan, we kept components such as the `MainCharacterTV` class and the `Game` class (which was renamed to `GamePanel`) because we knew that these were mandatory elements. Some changes that we applied to our game included major redesigning of how the movement of the moving objects would move and how they would collide. This occurred because we couldn't find a concrete and clean way to integrate our original design, so we decided to implement it another way.

In terms of the cosmetic game design, the final product is pretty consistent with the original plan. In the first meeting, we decided to go with a stylized TV character with some puddle traps (later changed to holes) and screwdrivers as enemies in a mysterious laboratory setting. However, in terms of the implementation design, we had quite a bit of changes. For example, we decided to make a `UI` class instead of a `Menu` class for dealing with on-screen elements such as the health bar, and drawing menu screens for the main menu, the instructions screen, the win screen and the lose screen. Moreover, we decided to change the `Map` class to a wall and tile manager. These would be drawn separately, giving a 3D effect. We discovered that we could load the map with a text file, so we integrated that into our system, where different integers (0 or 1) would represent a wall or a tile. With this project, we learned a lot about 2D game development in Java. That includes things like what frameworks we can use to develop a game, what kind of project structure we need to develop a game efficiently, what kind of components/classes we need to achieve what we want. Moreover, we learned not only concepts around game development, but also a lot about Java itself. We have had many opportunities to discover how multiple different classes can interact with each other, some useful APIs in Java language as well as some important design patterns used to create a scalable, maintainable and debuggable program in Java. Another huge factor that we believe is significant to successful project development is communication and the team dynamic. These two stood out

to us, as, we found that excellent communication between teammates and cooperativeness were what made developing this game very enjoyable and straightforward.

Modifications we did during this time included fixing a level issue where you could not continue to the third level after completing the second level.

TUTORIALS

Video Tutorial

We have a really nice tutorial trailer, so please check this out.

The link to the video trailer: [link](#)

Tutorial Documentation

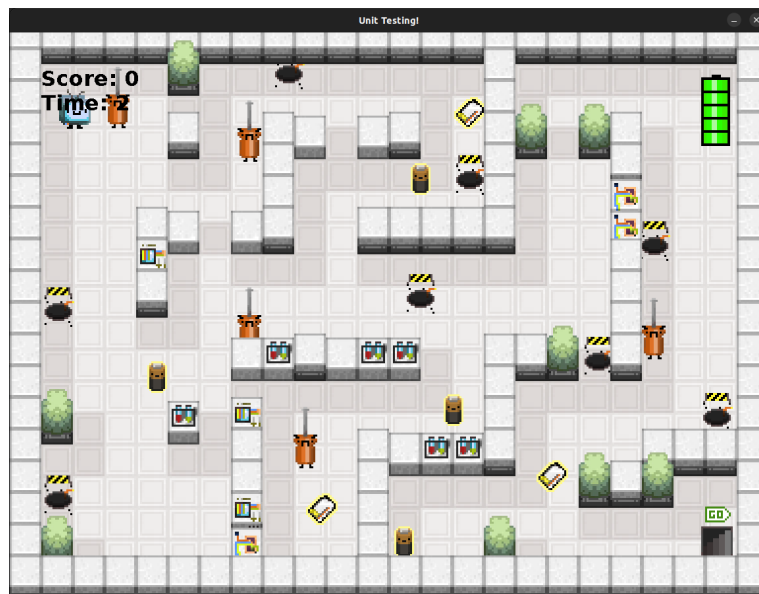
Starting The Game:

When the game is started, you are greeted with the main menu showing the options and some instructions when in game. To choose between the options, use the W and S key to switch between them, and then press Enter when you are ready with your selection.



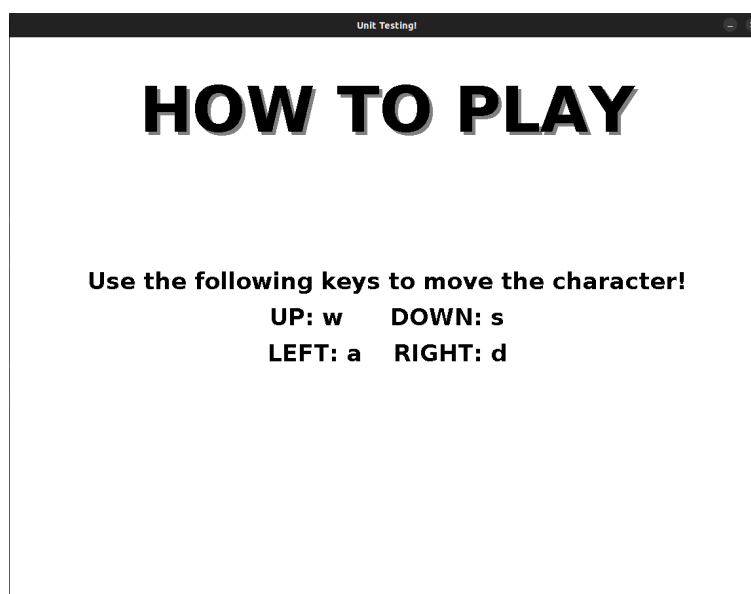
Getting To Know The Game:

Once Play Game is selected from the main menu, the game starts, and you are shown the main map with your moveable character spawning in the top left of your screen as seen in the picture below. In the main game screen, you are shown your current score, the time you have spent playing the current level and your current health in the form of a battery in the top right of your screen. Notice that your health will decay as the game goes on, and the health bar will reflect that, but you also have 5 retries before you are prompted to the main menu. Your objective is to collect all three key cards, avoid enemies and traps, and get to the door before your health fully depletes.



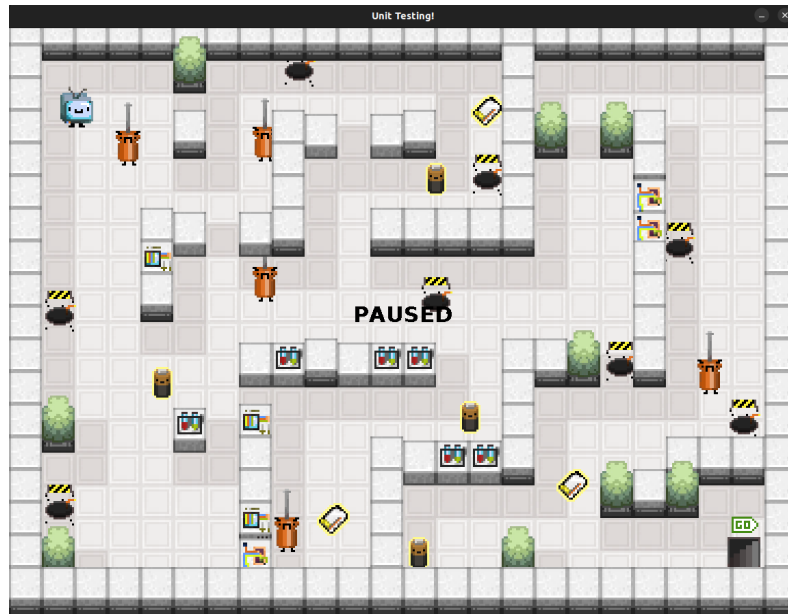
Instructions For The Game:

To find out how to move your character, simply press I(i) on your keyboard to have the instructions show up on your screen. When pressed, the game will automatically pause and the instructions will display as seen in the picture below. Once you are done with the instructions, press I(i) to return to the game.



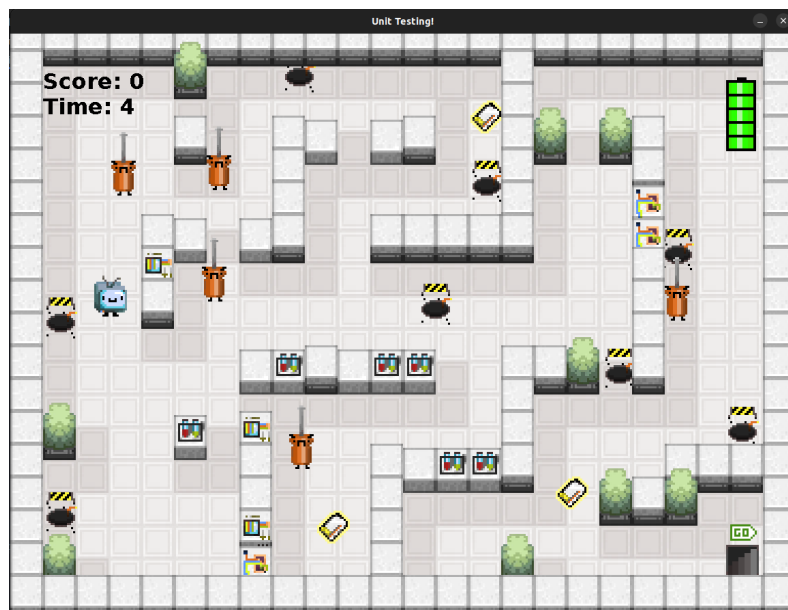
Pausing The Game:

While you are playing the game, you may find the need to pause the game, and this can be done by pressing P when in the main game. Once P is pressed, the game is paused with “PAUSED” displayed in the middle of your screen as seen in the picture below. Once you are ready to resume, press P and the game will resume.



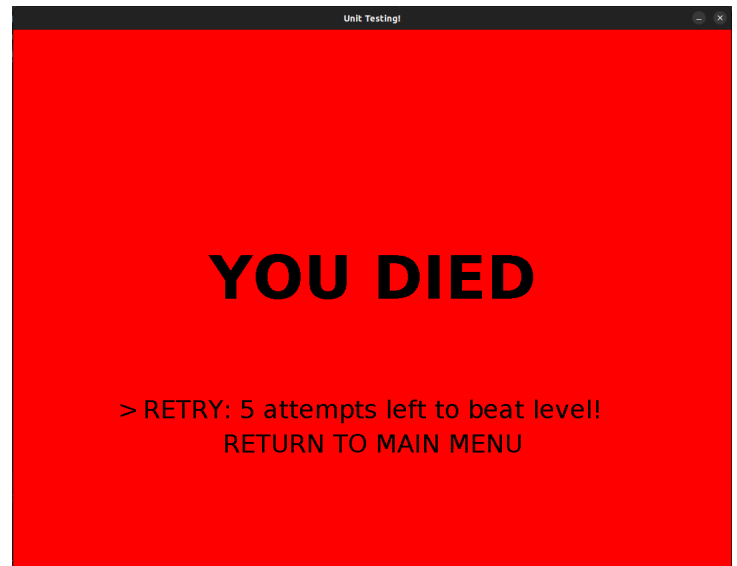
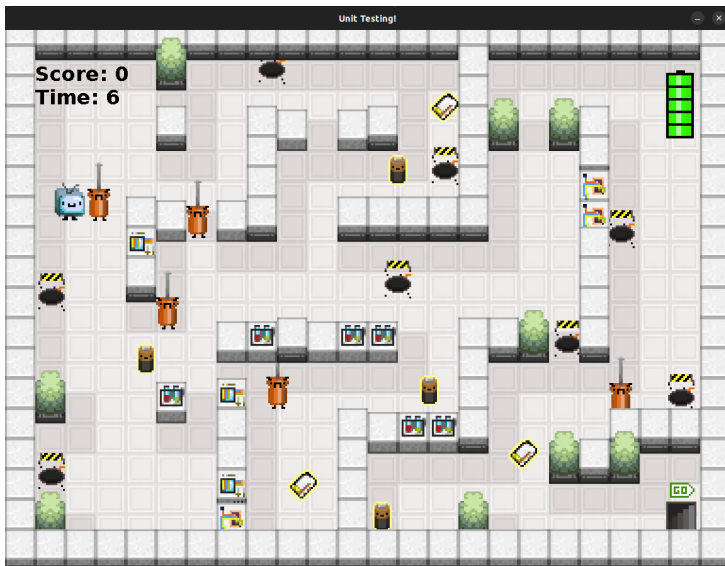
Movement:

To move your character, simply press W, A, S or D to move up, left, down or up respectively. In the picture below, the player was moved towards the bottom of the map.



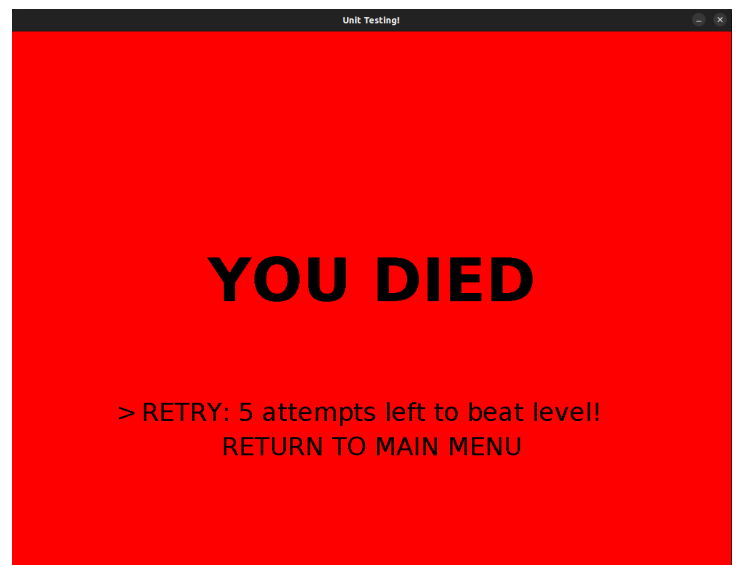
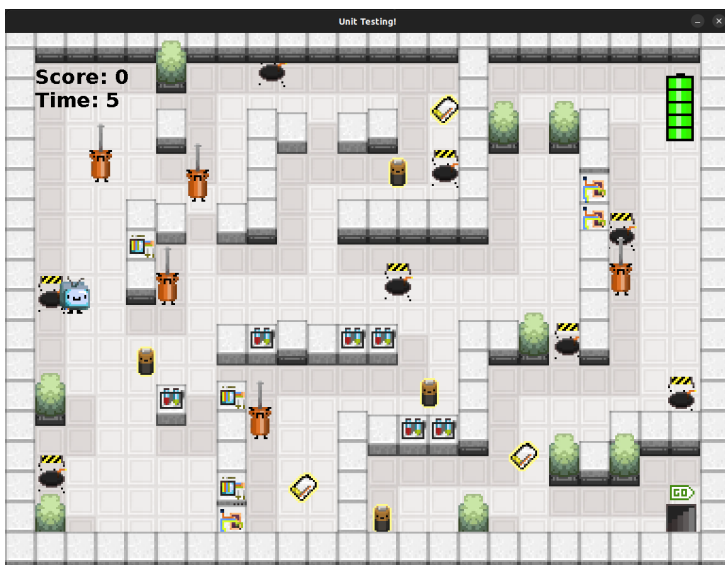
Enemies:

While playing the game, you may run into one of the screwdrivers that are chasing you and once that happens your health will become 0 and the game will bring you to a lose screen. From the lose screen, you can either retry the level and respond or return to the main menu. These options are selected the same way as the main menu options are, with W and S and then Enter to select the option.



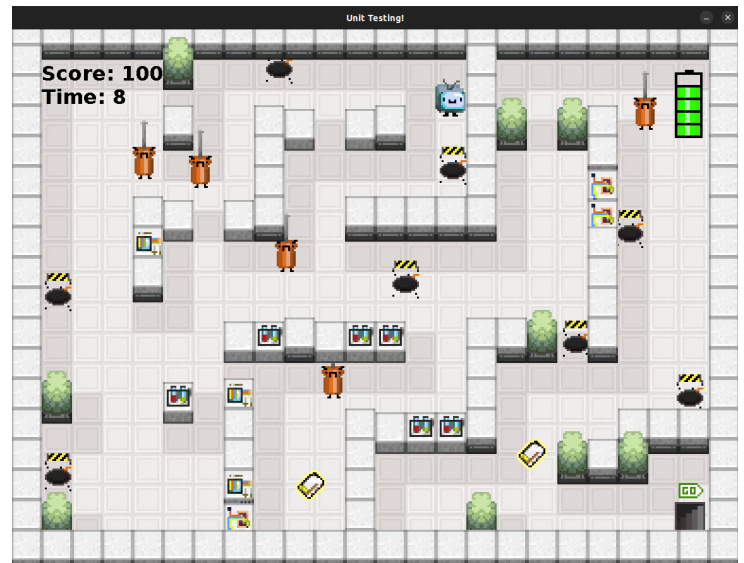
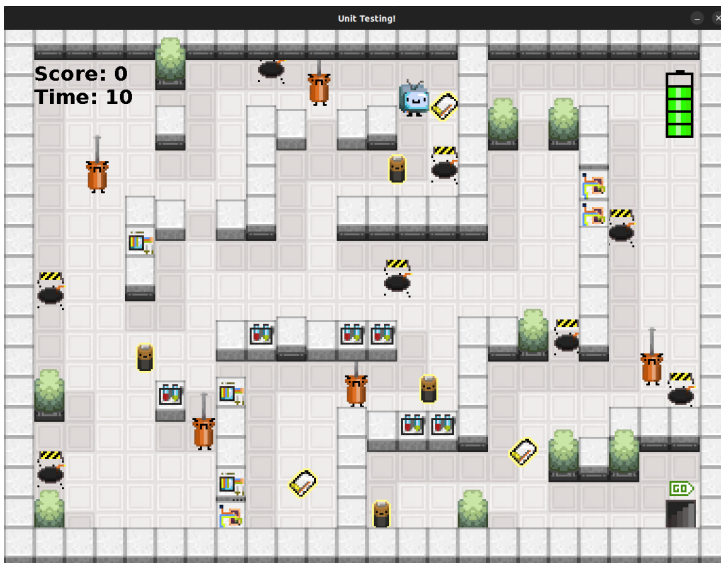
Traps:

While playing the game, you may run into one of the gaping holes throughout the map and similarly to the enemies, once that happens, your health will become 0 and the game will bring you to a lose screen. Again, from the lose screen, you can either retry the level and respond or return to the main menu. These options are selected the same way as the main menu options are, with W and S and then Enter to select the option.



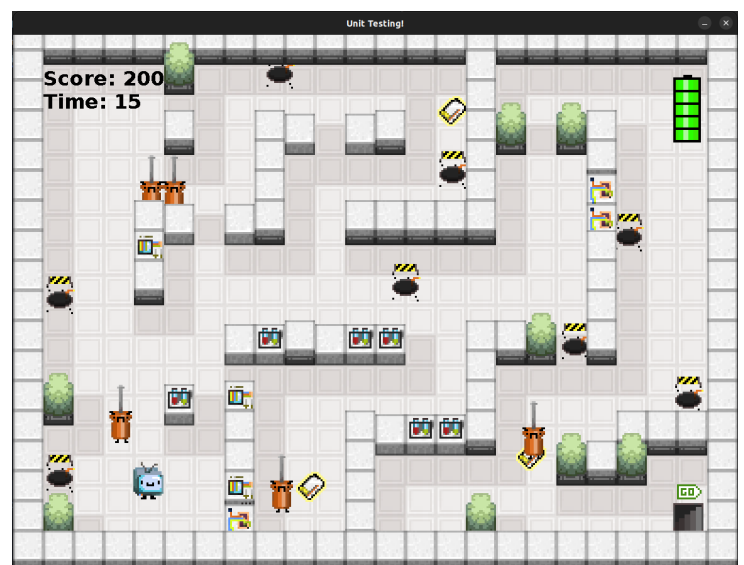
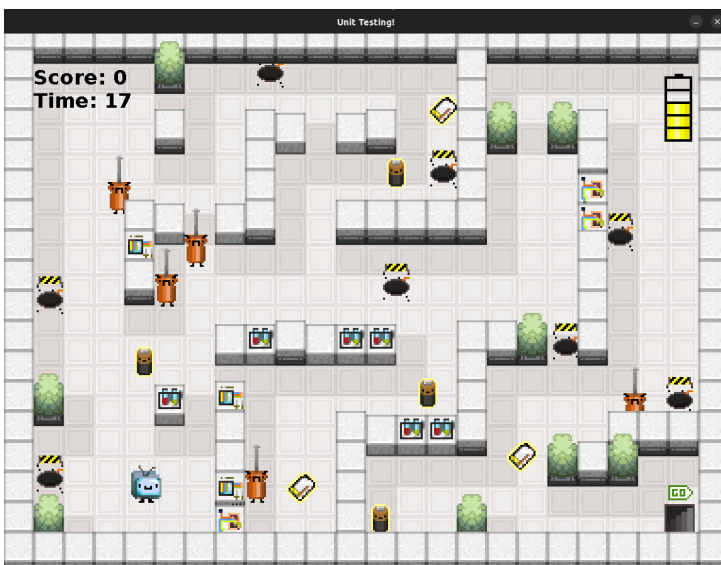
Collecting Key Cards:

Throughout the map, there are key cards that are needed for you to continue to the next level. Each level will have 3 key cards that will be guarded by screwdrivers. Each time a key card is picked up, your score will increase by 100 as seen in the pictures below.



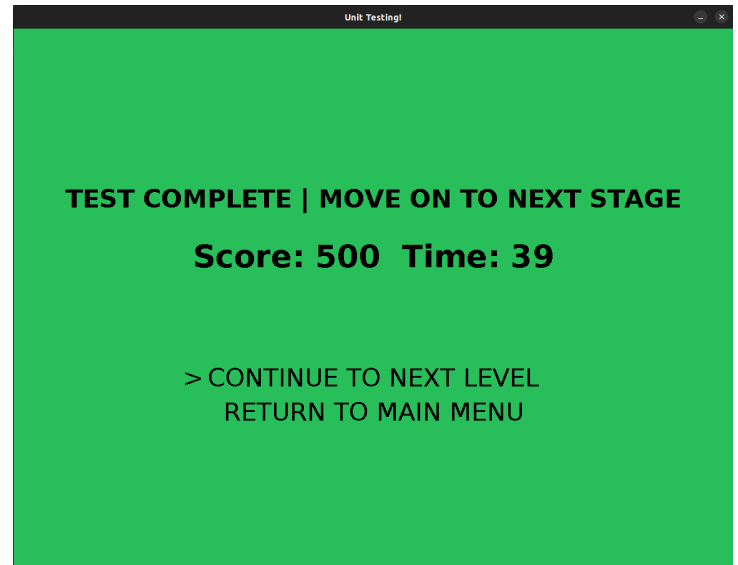
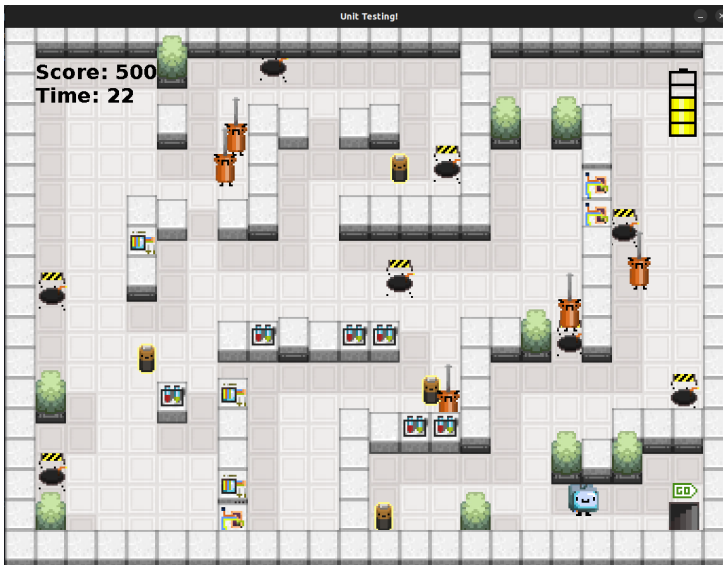
Collecting Battery Power Ups:

Throughout the map, there are battery power-ups. These power-ups will help you escape the lab. Each time that you pick up a power-up, your score will increase by 200 and your health will increase as seen in the pictures below. Notice that the power-ups will disappear and reappear every so often, so watch your health!



The Next Level/Exit Door:

Once you have collected all three key cards in the level, you may proceed to the door at the bottom right of the map. Once you enter the door, you are greeted with a win screen, displaying your score and time it took to complete the level as seen in the pictures below.



Winning The Game:

After completing all three levels, you are rewarded with the final win screen, as seen in the picture below. From here, you can go back to the main menu and play again!

