Group #13 - Phase 4 Report

Xuyun Ding, Denzel Tjokroardi, Kyle Tsia, Yihao Wang

The Game

Our game is our take on the basic "maze chase" game. Our hero, controlled by the user, runs around this maze, avoiding traps and ghosts in order to collect all the rewards to move to the next round and achieve their highest score.

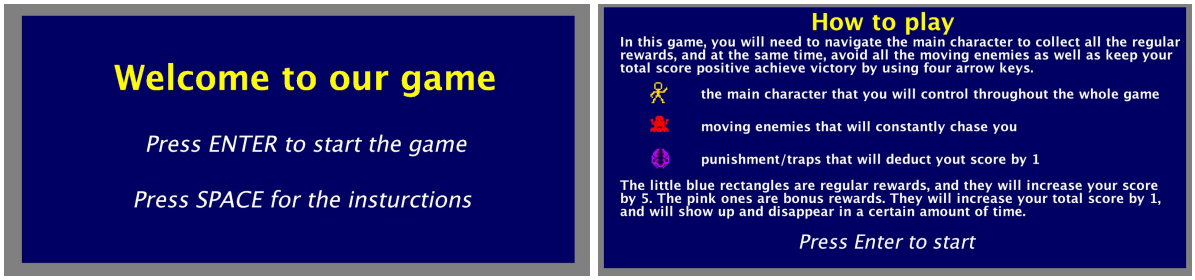
The main changes we implemented in our final product that were not in our original plan were all implemented to enhance gameplay and decrease complexity. One change would be the gameboard itself. In the original plan, we wanted to make the game board a matrix of *Tile* objects, where each unit on the gameboard is its own object. However this proved to cause a lot of errors and increased the risk of failure in game, thus we chose to use a premade maze image as the gameboard, that allowed us to easily determine where the user can move to, where objects can spawn, and it made collision between all objects simple. Another change would be the win-condition and win-event. Originally we planned on making the game finish after a set number of rounds, and the player would have to "enter" the new round by going through a special tile after collecting all rewards. However while developing the game we realized that ending the game after a set number of rounds made the experience less appealing as it felt like there was a set score that is always the highest and thus decreased the game's replayability. Additionally by making the player go into an exit tile in order to start the new round made the game feel disjointed. So in the final product we decided to have theoretically unlimited rounds, as long as the user can survive, and an automatic spawn of the new round after the user collects all rewards of the current round. The last notable change would be the aesthetic. Originally we wanted to make the background, enemies, and player to represent a theme of "University/School". On top of time constraint and lack of design experience in the group, we realized that by implementing irregular shapes as entities it made collision detection much more complex, as the objects now collided on each edge of the irregular shape. Additionally, it made the game much more distracting to have a detailed background.

We believe that the most important lesson that we took away from this project was how important the design phase is. It is so important to build a strong fundamental idea that is not too complex but covers all possible issues on a basic level. This allows for a basic implementation of the game that can then be further extended to become more complex. A weak original design causes fundamental bugs and problems in the game that can become exponentially more difficult to fix in later stages of implementation. Additionally, another lesson is how useful clear communication is. This doesn't just mean clear verbal communication within a team, but also clear documentation within the code itself is so useful for team based projects, especially in the midst of a pandemic where regular meetings are not possible.

Tutorial

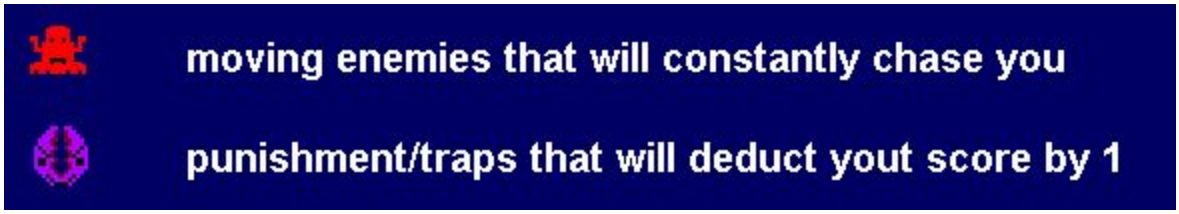
After successfully building and running the game, you are brought to the welcome screen. At the welcome screen you can either hit *ENTER* to immediately start the game or hit *SPACE* to go into a condensed version of the tutorial.

Figure 1&2: Main screen and instruction screen



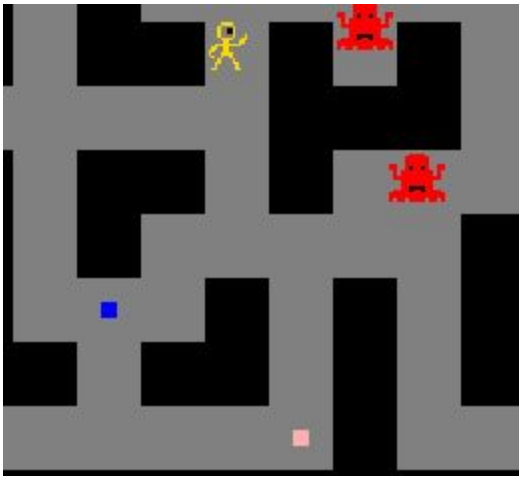
Within the game, your main objective is to collect all the blue rewards every round without being caught by the enemies. Some enemies chase you and end your game, others just wait for you to run into them and they deduct your score.

Figure 3: Difference of punishment of in-game enemies



In addition to the blue rewards, you can also increase your score by collecting the pink bonus rewards. However they are trickier to catch as unlike the mandatory rewards they disappear and reappear in new locations every second.

Figure 4: In-game snapshot;
Blue mandatory rewards, pink bonus rewards, red moving ghosts, and the player itself.



Your score and current round count is displayed to the right side of the game, this can be used to compare highscores and compete with others!

Figure 5: Current score and round count

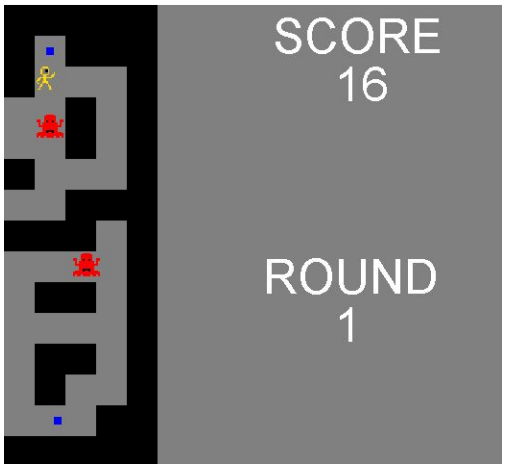


Figure 6: Game over/restart screen

If you get caught by one of the moving red ghosts, your game ends there and you are brought to the game over screen where you could hit *ENTER* button to restart the game and play again from the start.

The artifacts

The JAR file of our game is located in the document folder named group13-project-1.0-SNAPSHOT.jar; and the documentation(javadoc) files are located in the doc folder at the $basedir as the src folder.