

# **Phase 4 Report**

CMPT 276

Group 23

Nov. 26, 2022

## **Game Description**

Cat & Mouse Chase is a maze game where the player controls the mouse trying to navigate out of the house. On its journey, the mouse will have to collect all the crumbs in the house and avoid the mouse traps and cats hunting it down. Occasionally, some cheese will appear on the board at a random spot so the player will have to move quickly to get it and obtain some bonus points.

Our game has slightly deviated from the original design by not spawning more cats on the board after a certain amount of time and instead, just having 3 cats present. We made this decision after we saw how difficult the game can be because of our optimization with the cat's movement algorithm. Instead, we opted to place the cats at the start, middle, and end portions of the game to have them more evenly distributed. The rest of the features for our game were implemented according to our original plan.

For this part of the project, we focused our changes on the graphics of the game to move from plain blue menu screens and a black and white board to better reflect the states the game was in. For example, we changed our win and lose screens to have different pictures and the board now resembles a house, with hallways, bedrooms, bathrooms, a living room, and a kitchen. We also increased the difficulty of our game by adding more crumbs and mouse traps. In Phases 2 and 3, we focused on making sure our game worked properly and the tests were covering as many conditions and branches as possible so, in Phase 4, we were able to take a break from that and focus more on the aesthetics to provide a better user experience.

Building this game taught us a lot about the software development life cycle and a procedure on how to make a 2D arcade game in Java. All of us had no previous experience in game development so seeing the process on how to render graphics, getting keyboard input to control the main character, and adjust aspects of the game such as the cats and the number of items on the board to increase or decrease difficulty really put our programming skills to the test. Overall, it was a great experience; everyone enjoyed playing and presenting our final edition.

## Tutorial

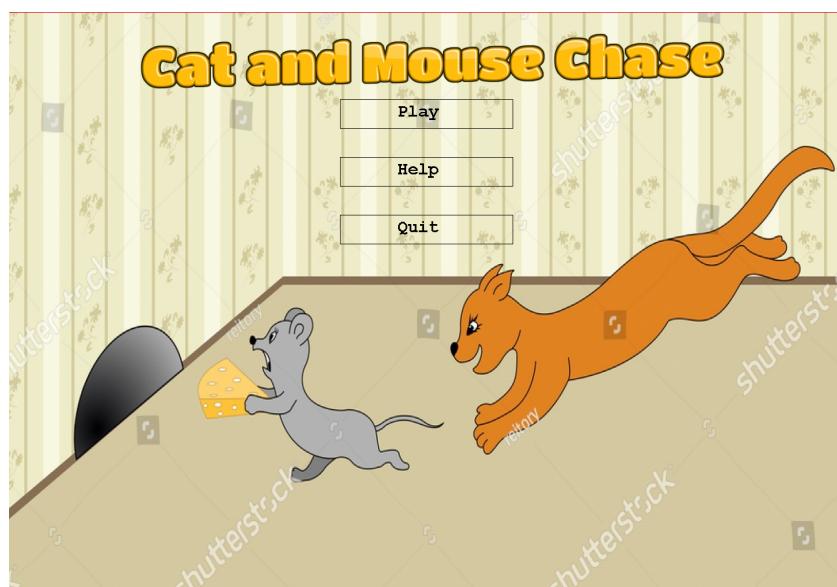
Welcome to Cat & Mouse Chase! Here are a few pointers on how to make the most out of our game

### **Controls**

- Use W, A, S, and D keys to move the mouse around the board. W is to move up, A is to move left, S is to move down, and D is to move right. Use the mouse to select buttons on the menu

### **Menus**

- Start Menu:



- Win Menu:



- Lose Menu:



### ***Playing the Game***

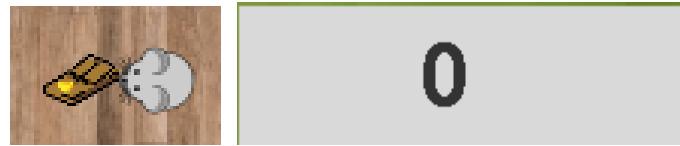
- Player (Mouse) starts in the top left corner of the map, in the kitchen area. The Mouse has to reach the bottom right corner.



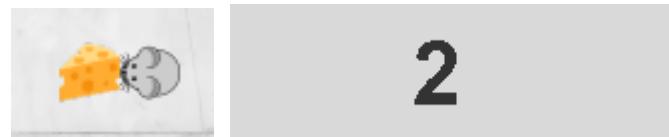
- Collecting crumbs increases the score by 1



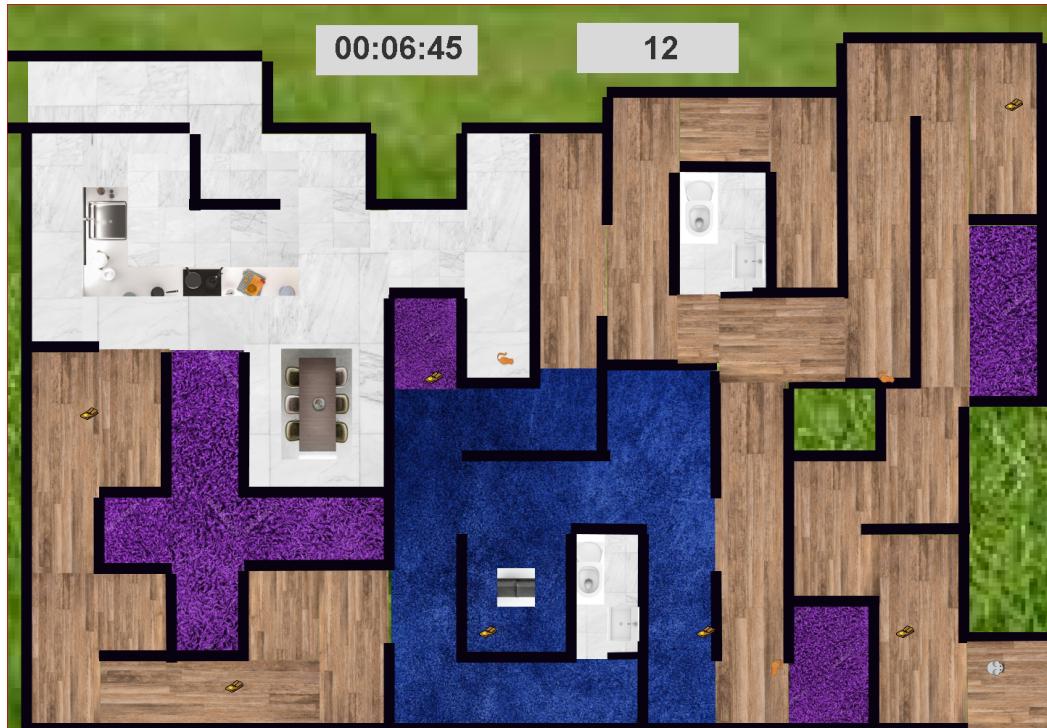
- Going over a mouse trap deducts 1 point



- Collecting a cheese increases the score by 2. Only one cheese is present at a random position on the board at all times and will despawn after a few seconds only to reappear after some time in a different place.



- Collecting all the crumbs on the board and reaching the finish wins the game!



- If the Mouse is caught by a Cat or the score drops below 0, the player loses so be careful!