

CMPT 276
Group 15 Phase 4 Report
Food Searching for Winter

Overview

Our bunny found the stock-up winter food in the hole had disappeared! Probably, the food was stolen by other jealous bad bunnies. Winter is coming soon, so our bunny needs to search for new food to avoid food shortage, but the outside world is dangerous, our bunny should be careful not to collect spoiled food and be caught by any of its predators!

Game designs

Player plays as the main character bunny. Players must help the bunny to get through obstacles, help recognize the spoiled carrots, and most importantly, avoid the wild wolves! Players must help the bunny to collect enough carrots to go home and rest for the winter. There are medical kits dropped randomly to help the bunny health from eating the spoiled carrots so players can collect them as a special reward. Three wolves will start following the bunny in the shortest path possible. Players must carefully bait the wolves and avoid any contacts or else lose the game.

Some deviations from our original design are obvious from comparing our original design mockups to what our final game appearance looks like, such as our main menu design which we decided to modify for visual reasons and ease of use. However, some of our designs did not change at all since their creation, such as the game board sprites and general layout.

In our original plan, we were planning to make different maps and biomes to make the game more challenging and bring different punishment and reward effects to the game. However, our team underestimated the time to develop a basic game, therefore, only one map and one biome is developed. However, we did generate the bonus rewards (eg. medkits) in random positions on the game board successfully.

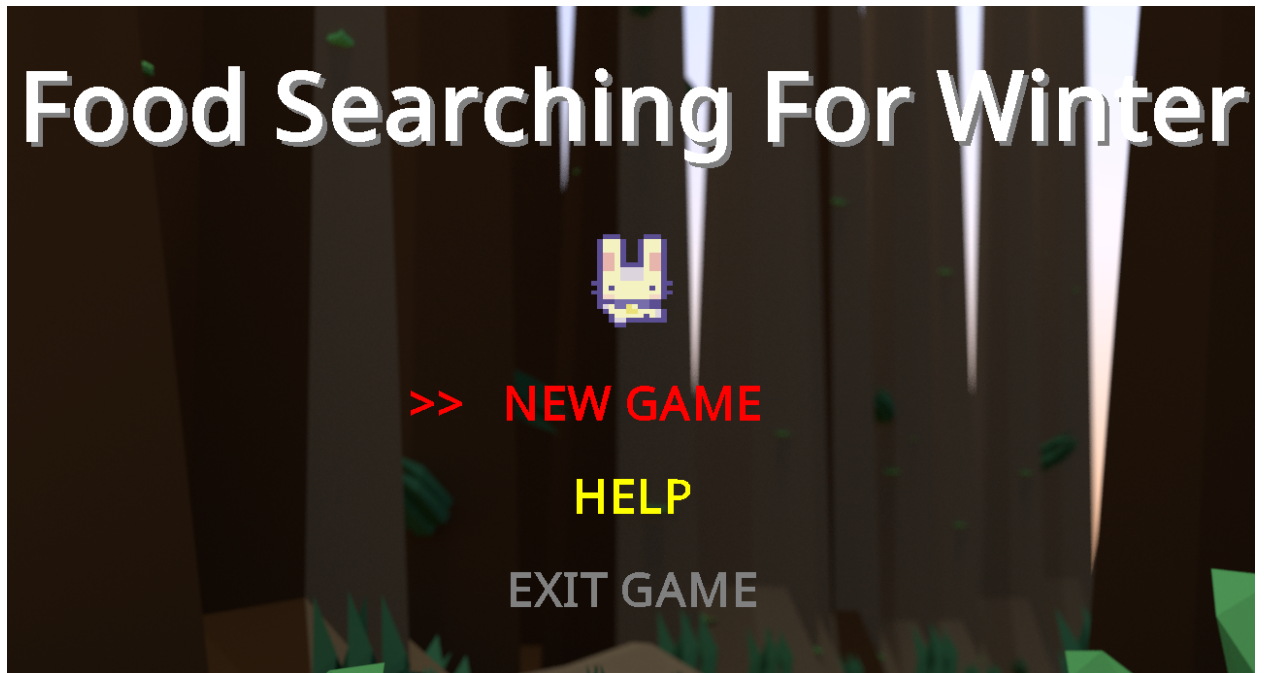
The highlight of the game would be the A* algorithm we implemented on the wolves' movement. The A* algorithm allows the wolves to follow the bunny in the shortest amount of steps and cost. Therefore, to make the game more difficult to win, we can modify the walking speed of the wolves and most players will find it more challenging to win.

Important lessons

1. Coming up with a well-structured software architecture at the beginning is very helpful. Our idea is not bad but we weren't clear about how to structure a game and divide parts into smaller segments.
2. Never underestimate the time to spend on tasks. Make sure to give yourself and your teammate enough time to fully finish and test the codes. It is better for team bonding and project management.
3. Only change one thing at a time and verify that the function you just implemented is working. Snow-balling bugs is not fun. Make sure you troubleshoot the critical functions then move on from it.

Tutorial

1. Menu



Player select "NEW GAME" to start the game and player can check the rules of the game by selecting "HELP"



2. Main character:

The white bunny. Player uses keys "w", "s", "a", "d" to move the bunny to go up, down, left, right, respectively. The bunny can not go over the hills (obstacles).



3. Goal of the game: Collect all the good carrots for the bunny.



Be careful of the spoiled carrots. If the bunny eats any spoiled carrot and it doesn't have a medkit in hand, the bunny will get into big trouble! (player loses the game).



4. Collect medkit in case you accidentally eat a spoiled carrot!



5. Wolves are smart! They will find the shortest path possible to eat you alive! Be sure to avoid them!

6. When you help the bunny to collect enough carrots, the bunny can finally safely get back



to its hole.

Congratulations, you have won the game!