COVID SMASH

COP290 Assignment-2

Professor:
Prof. Rijurekha Sen

Aayush Goyal
2019CS10452
cs1190452@iitd.ac.in
Ph: 7508588441

Aniket Gupta
2019CS10327
cs1190327@iitd.ac.in
Ph: 9511099614

Contents

- COVID SMASH
- Items and characters in the game (docmen, monster, bots, pills etc.)
- Maze Creation
- Game menu window
- Single Player Game
- Double Player Game
- Control buttons
- States in the Game

Covid Smash

- The ultimate aim in this game is to get victory over covid.
- In this game, there are two ways to defeat the virus.
  - Either take the vaccines and eradicate the virus.
  - Take a lot of medicines so that virus will not be able to harm you. That is achieve ultimate immunity.
- The hero of our game is DOCMAN.
- Corona Virus is the villain.
- There are different variants of virus in our game and each uses different strategy to attack.

Items and characters in COVID SMASH

BOTS : These character chase the DOCMAN using different strategy

- This variant directly tends to reduce it's distance with the Docman.

- It tries to reach 4 tiles ahead of the Docman. In this way, it can block the Docman from front and the others can attack the Docman.

- The movement of this variant is quite unique. It moves in such a way that it first sees the point 2 ahead of Docman. Then it sees the current location of Boss Virus (in case of single Player, the green virus). Then it rotates the vector joining them by 180 and targets that point. In this unique way it assists the Boss virus by coming from the other side and blocking Docman from both the sides.

Continue...

- The Boss virus in 2-player mode. It has the power to make other dead viruses alive.

- DOCMAN wins the game if it collects all the medicine.

- When the viruses are prone to get killed by the Docman, they turn violet.

- Vaccine gives the power to kill a virus. The effect of vaccine lies only for some time.

- This represent the DOCMAN in our game. The Docman can survive atmost 5 times through treatment. It can kill a virus if it has taken a vaccine.

MAZE CREATION

- For every new game, a new random maze is created.
- The left half of the maze is mirror image of the right half.
- There are no dead ends in the maze i.e. , there is always more than one direction to move in from any empty cell in the maze.
- To create the maze:
    - We have first used Depth First Search to create the left half of the maze.
    - This contains many dead ends.
    - At every dead end, we break a random wall.
    - Now the maze is mirrored to get the right half.
- Creating new maze every times helps the player to not get bored.

Game Menu Window

- The **Menu** window allows the player to select the game mode.
- Clicking on **Single Player** will start a single player game.
- Clicking on **Double Player** will take you to another window asking the player to create the server or the client network.
- The **Rules** option helps the player to understand the rules of the games.
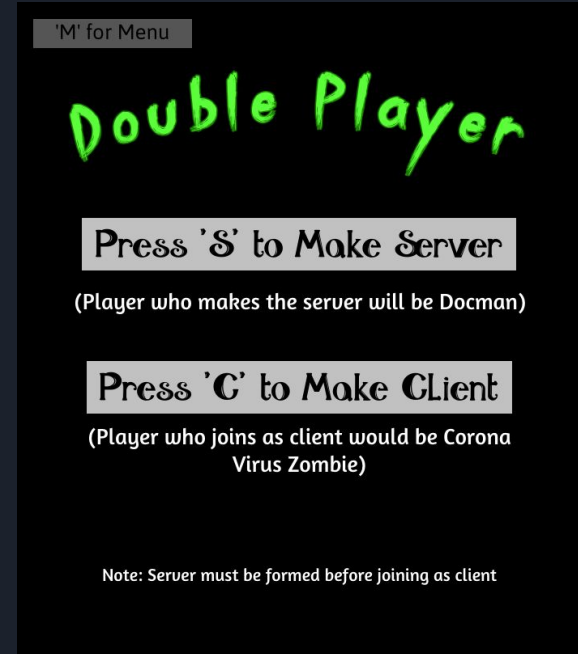
Single Player Game

- In the single player mode, the DOCMAN tries to kill the bot viruses.
- DOCMAN wins the game if it either kill all the bots using vaccine or collects all the medicine.
- It loses the game if the bots are able to infect the Docman 5 times.
- The player has the option to quit the game by pressing 'q' in keyboard.
- If pressed "No" the game will start from where they left. This might as well be used as the pause button.
- If pressed "Yes" they will return to the start menu.

DOUBLE PLAYER GAME

- To start a 2-player game, first click on the "Double Player" option given on the main menu.
- Then the window shown on the right appears.
- Player need to press "s" or "c" on the keyboard to create the server or the client respectively.
- Note, the server needs to be formed first. After the server is formed then only the client should join as the 2nd player. If the client tries to join first, then the game window will crash.

Double Player Game

- In double player mode, the first player acts as DOCMAN whereas the second player acts as the BOSS MONSTER virus.
- The BOSS MONSTER has the power to make the other dead viruses alive.
- The DOCMAN has got 5 lives to defeat the MONSTER.
- If DOCMAN eats all the medicines or kill all the viruses, then DOCMAN wins the game.
- To kill a virus, the DOCMAN needs vaccine.
- Also, in between the game, both the players have the option to quit the game. If one player quits the game, then the second player receives a message stating so and he goes back to the main menu.

CONTROL BUTTONS

For Navigation:

- To start the Single Player game: Press the 'F1' button or click in the Area of button, when on start menu. This will start the Single Player game.
- To Start the Double Player game: Press the 'F2' button or mouse click in the area. This will then ask you to create the server and play as Docman. After creating the server the other person should press 'c'. This will form the client and 2nd player plays as the Boss Virus.
- Press 'c' to go back to see the credits, or click using the mouse.
- Press 'r' to see the rules, or click using the mouse.
- Press 'M' to go back to the start menu if your game has not yet started.
- Once the game starts, press 'q' and then 'yes' to quit the game. If you want to pause the game, then press 'q' and then select 'no'. If the one of the players in the multiplayer game quits, then other player is ofcourse the winner and they return to the start menu.
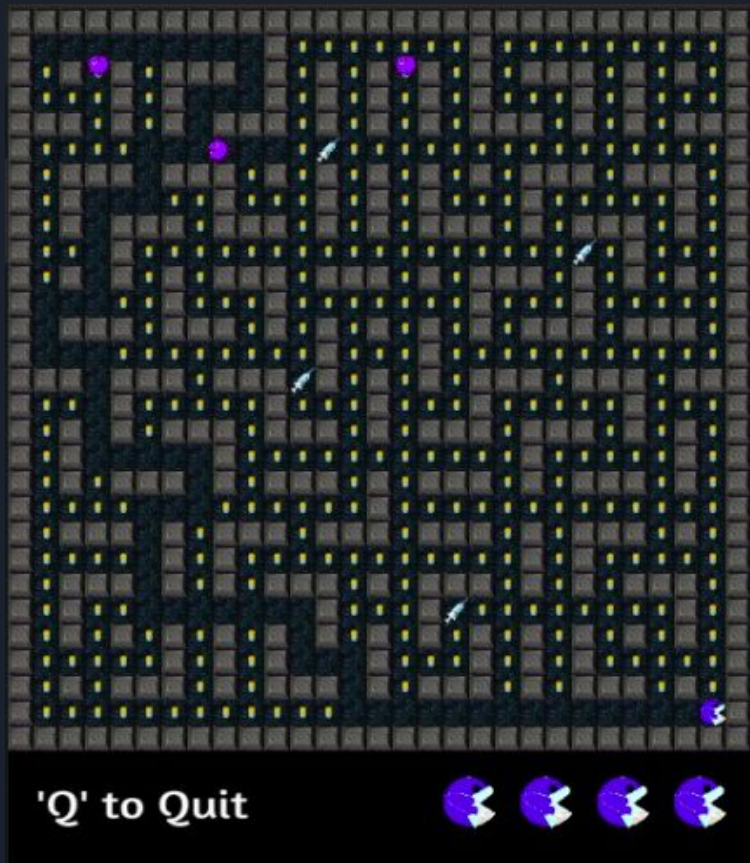
continued …

For controls:

- Up key: To move up in the maze
- Down key: To move down in the maze
- Right key: To move right in the maze
- Left key: To move left in the maze

States in the Game

- Powerful DOCMAN - After taking a vaccine, the DOCMAN gets the power to kill any virus. The effect of the vaccine remains only for some time. The viruses turn violet in color when they are in danger.
- Dead BOT VIRUS - In a double player game, the main villain can make the dead bots alive. To make a dead bot alive, the MONSTER needs to reach the place where the bot died.
- MONSTER dead but bots alive - If the second player dies but the bots are alive, the game is still not over. The DOCMAN still needs to kill the other viruses to end the game. We need to kill all the virus else we never know it may mutate.
- All PILLS taken - If the virus is alive but the DOCMAN takes all the medicines, then the DOCMAN becomes resistant to the virus and is declared winner.

The virus is in the scared mode,
Docman has the power to kill them.

Docman has achieved ultimate immunity.
He won this battle.

Thank you!

We hope you enjoy the game!