



# CS 319 - Object-Oriented Software Engineering Design Report

Virus Attack  
Section 2 - Group F

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# 1. Implementation Flow

The implementation stage of the *Virus Attack* project was decided to be divided into three parts, two of those parts have been done simultaneously by splitting into two groups. Basically one group have done the view package which constructed the GUI system and the other group have done the model classes and the controller classes which are based on the mechanism of the manager classes except the Game Engine class. And eventually in the last part every group member came together and worked on Game Engine and put all parts of the code together and make it working efficiently.

Deeply analyzing the implementation process, it would be fair to mention that what has been promised in the Design Report have been done accordingly. Therefore, there are no major changes during the implementation stages different compared to the reports. The differences mainly occurred when adding new methods to make the objects such as defenders and bonuses to work properly. Other than that, nothing that is mentioned in the report has been missed or replaced. Object Oriented Design that our game promised remains and holds its qualifications.

As mentioned above, there are new methods, which were not considered during the design process, added to make the objects work properly. The methods are added while aiming to accomplish what is aimed for quantities of the game. For instance, there is `updateDefenderPosition()` method now, that updates the defender's position. For instance the game has a part when the defender and the virus collides it just decreases the Hp status. Before `updateDefenderPosition()` method was added, when collided virus and defender was stuck, therefore Hp status was decreasing continuously till it becomes 0. After we added

updateDefenderPosition(), we made defender and virus go into different ways when collided, therefore their positions is being updated and there is no problem of having them stuck.

## 2. User Guide

Virus Attack is a single player game in which the player acts as the virus. Virus comes up against the immune system cell/cells, a host body protected by its own defense mechanisms, according to the upcoming levels. There are some certain options of modes to start such as easy, medium and hard. And each mode has their own levels.

### 2.1 Main Menu

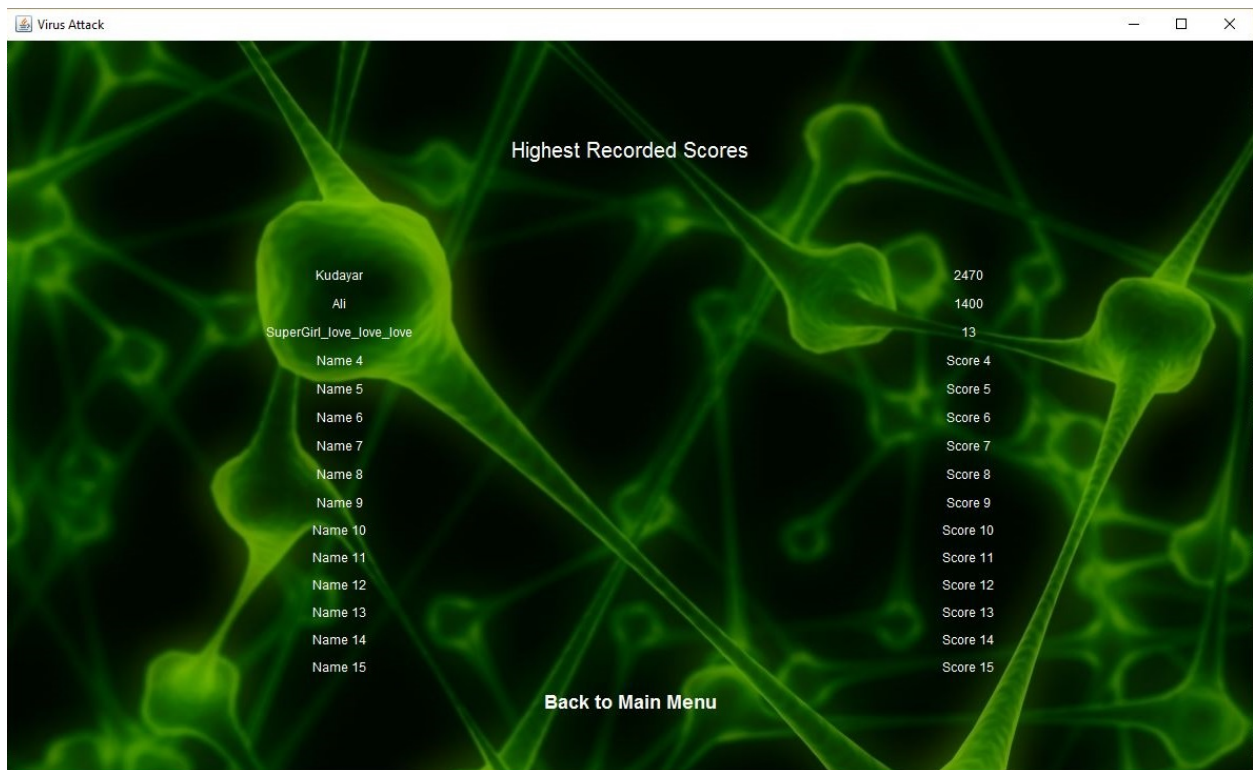




In Main Menu, there are 5 options which a player is free to select.

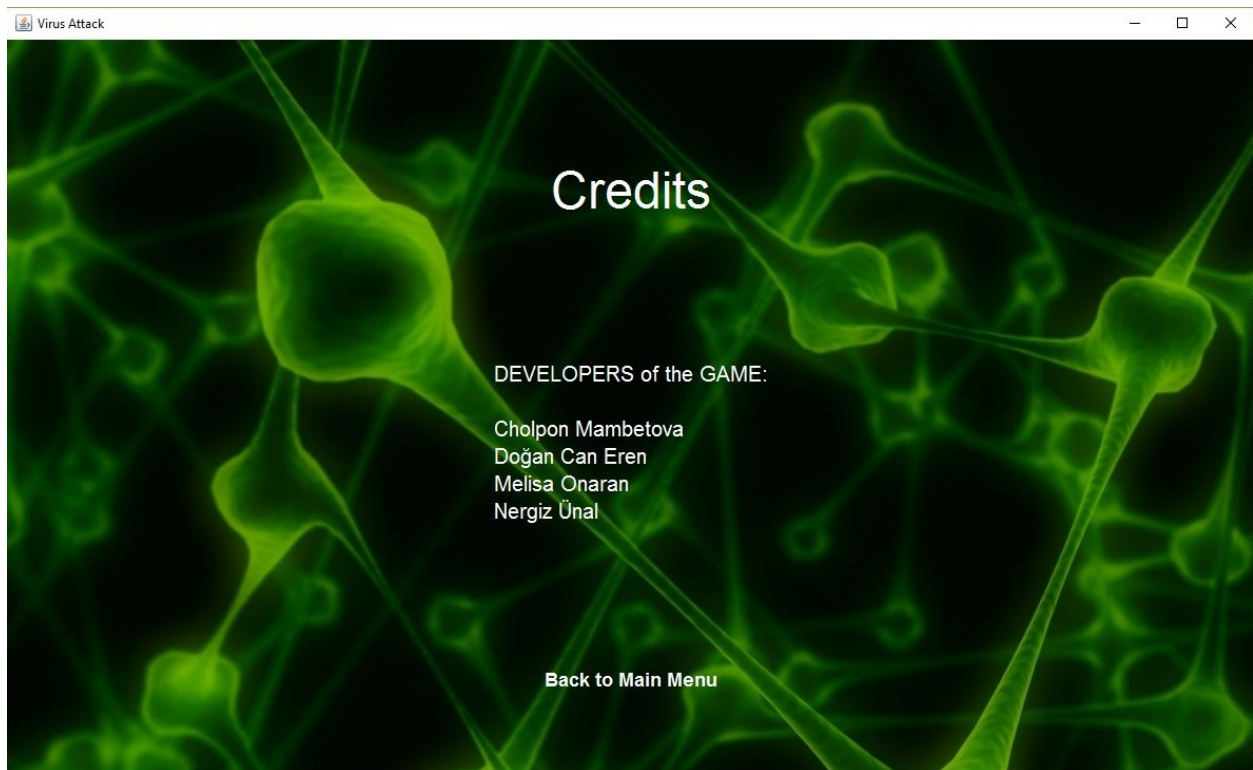
- New Game: Runs the game engine and starts a new game to play.
- High Scores: Shows the top 10 high scores if there is any.
- Credits: Gives general out-game information such as developers' name.
- Help: Gives general information about the game.
- Quit: Closes the system and exits the game.

## 2.2 High Scores



In High Scores, there will be top 10 high scores that recorded in any session of the game. When the “Back” button is pressed, it returns to the main menu.

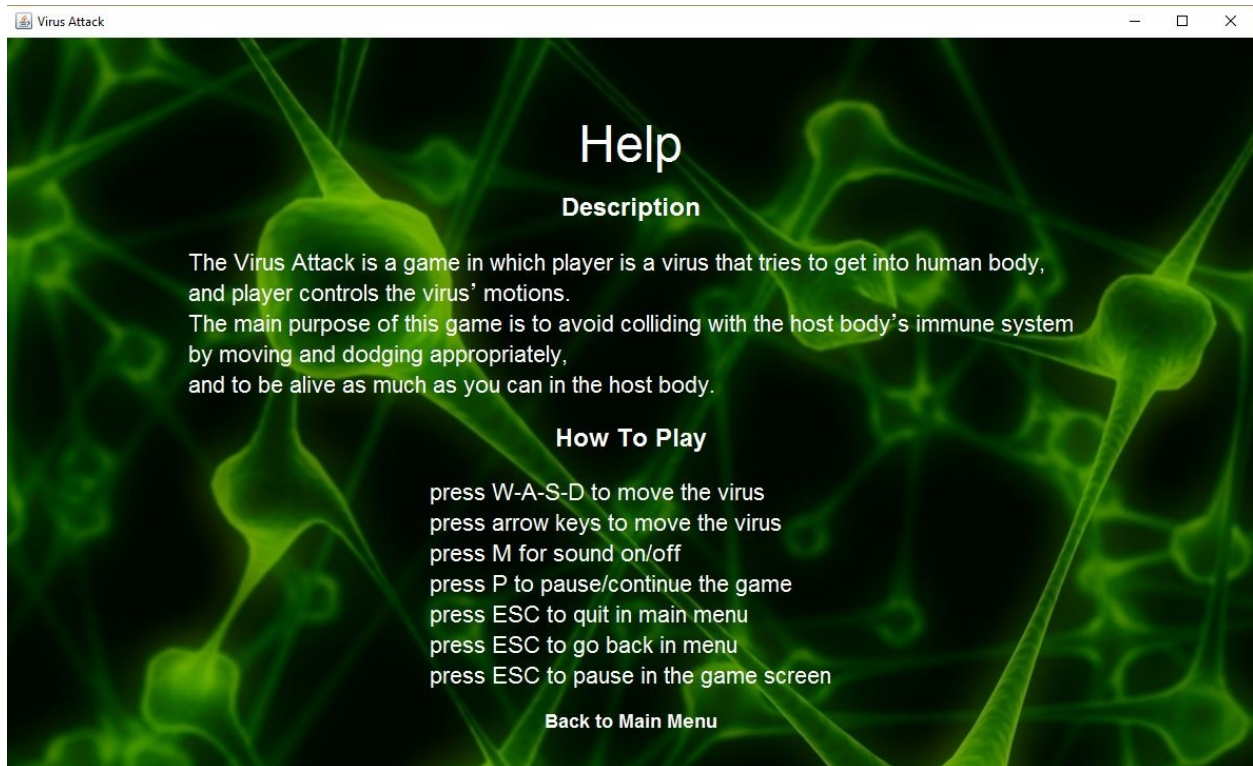
## 2.4 Credits



The overall out-game information is given in this part. The name of the developers is written. When the “Back” button is pressed, it will return to the main menu.



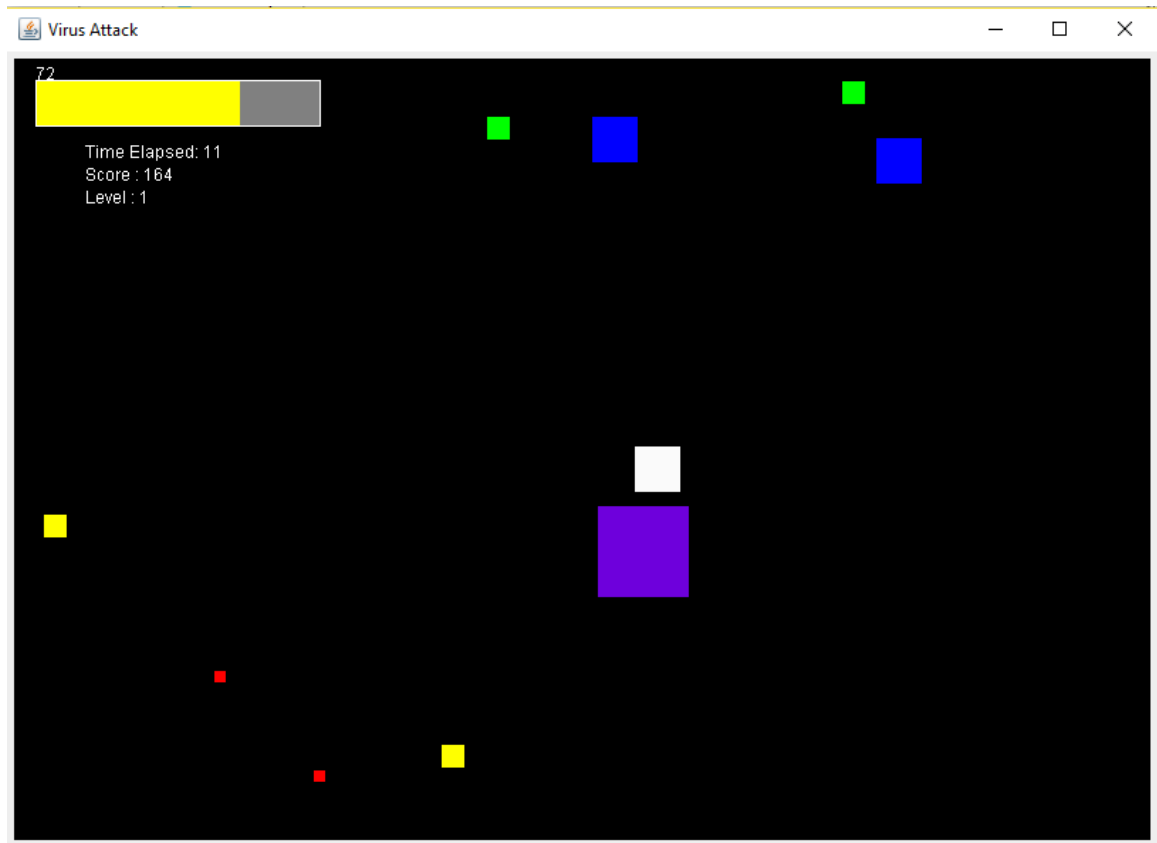
## 2.4 Help



The general game information and the hotkeys for controlling the character is given in Help. When the “Back” button is pressed, it will return to the main menu.



## **2.5 In- Game Menu**



This is the first window the player encounters when playing the game.

### 3. Status of Implementation

As a conclusion, it is mainly important to emphasize that almost all functional requirements are working properly as promised. If to give a brief information about how the game handles its functions, it mainly starts with the main menu with options for player. Player can choose to play, see the credits, get help, view high scores or basically quit. When the New

Game button is clicked the game starts with a full HP Bar and if the player, virus, collides with defender its HP Bar status decreases. If HP Bar status would be 0 before the designed time challenge, game ends. Otherwise game updates its level. Hopefully, if the virus collides with one of the three optional bonus objects, according to the players luck, virus can freeze the defenders till the next collision, have an invincibility or detonate the defenders nearby. If the user successfully completes all the levels, or quits the game in the middle or unsuccessfully dies, he would be able to see the high scores table.