Department of Computer Science

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2D Online Game
## where players fight for their lives

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Introduction

3D games are taking over in the gaming industry, especially on PC platforms. Virus Attack was developed to increase the popularity of 2D games. To make the game more appealing, the online multiplayer feature has been integrated. People are able to play with friends or with strangers if they wish to.

What is Virus Attack?

Virus Attack consists of players working as a team, **_fighting for their lives_**. They must eliminate all of the **_viruses_** that are spawning in the map. However, viruses can attack back, slowly reducing the player's health, eventually killing them.
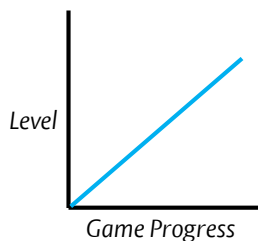
As players progress through the game, they would be able to level up. This means it will get increasingly difficult to defeat viruses.

It will only get harder to win.

Online Multiplayer Feature

This project is primarily focused on the networking aspect. Players are able to:

- **Play with friends.**
- **Join a random team.**
- **Chat with team in game.**

Connection Lost!

If a player has lost connection to the game, the program would be able to handle it without crashing the game.

Users automatically connect to regional servers. This decreases the distance of data travel which in turn reduces lag.
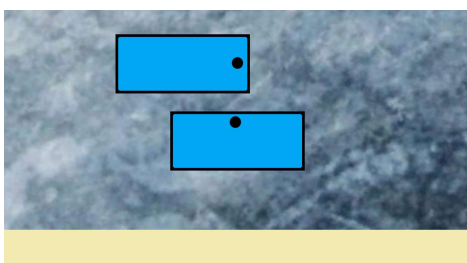
Prototype showing multiple players connected to the game

User Interface

The player must go through a small simple process before starting a game, just like any other online game:

> **Login → Main Menu → Lobby → Room → Game**

- The player must login with their username and password.
- They join a lobby to select a room.
- When all players are ready, they can start the game.

Login Screen Prototype

Software Used

Unity was used to develop the game. This game engine has an inbuilt networking feature, which Photon makes it much easier for programmers to make multiplayer networked programs.

Future Plans

Enhancements of the game would be made in the future:

- A **variety of maps** would be included to make the game more appealing to play.
- The game would be developed on **mobile platforms** so that it would be more readily available.

- A **scoreboard** would be incorporated to make the game more competitive.
- Players would be able to **select characters**.

References

1. Photon, https://www.photonengine.com/pun
2. Unity Learn, https://learn.unity.com/tutorial/video-2d-game-kit-walkthrough

Degree programme

BSc (Hons) Computer Science