



PROJECT REPORT

Demonstration of types of viruses and its mechanism

Group 07:

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Object-Oriented Programming

Instructor: Ph.D Nguyễn Thị Thu Trang

1. Assignment of members

Nguyễn Bá Dương - 20214886:

- UML use case diagram and general class diagram.
- Collect viruses' data.
- Virus abstract class and subclasses (VirusWithEnvelope, VirusWithoutEnvelope, and 5 families of virus).
- Virus structure classes (AcidNucleic, Capsid, Envelope, and Glycoprotein).
- VirusManager class.
- Virus mechanism screen (screen, controller, and fxml).
- Refactor code.
- Write report.

Nguyễn Hải Dương - 20214887:

Nguyễn Mạnh Dương - 20210243:

- MainApp class.
- HomeScreen class (screen, controller).
- Main screen (screen, controller, and fxml).
- About screen (screen, controller, and fxml).
- Help screen (screen, controller, and fxml).
- Virus structure screen (screen, controller, and fxml).
- Refactor code.
- UML class diagram.
- Write report.

Trần Hoàng Dương - 20214888:

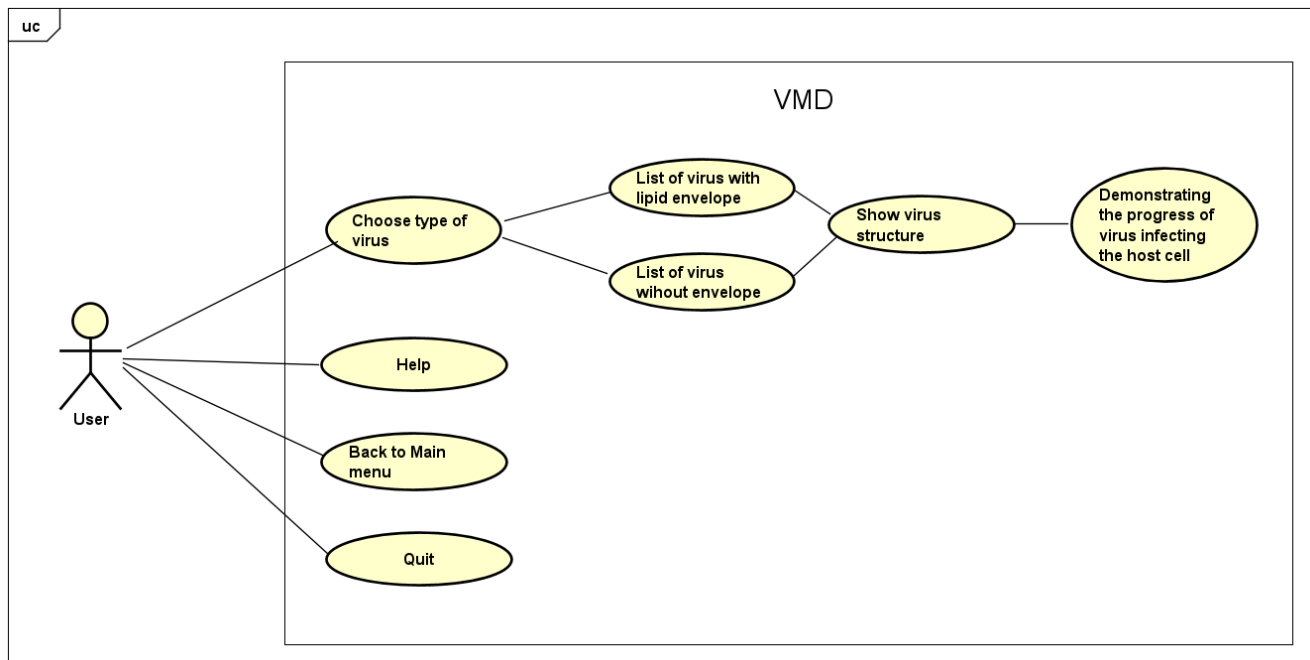
2. Description

2.1. Introduction

In a world where viruses continuously threaten global health, it has become more crucial than ever to comprehend their diverse forms and the methods they employ to infect host cells. With the ongoing spread of COVID-19 serving as a stark reminder of the impact viruses can have on humanity, there is an urgent need for education and awareness.

Welcome to "VirusDemonstration", an interactive and educational application designed to provide users with fundamental knowledge about various viruses and their infection mechanisms. Using an Object-Oriented Programming (OOP) approach, this application offers a seamless and intuitive experience, making it accessible to users of all backgrounds.

2.2. Use case diagram explanation



- The use case diagram shows the interactions between a user and the VirusDemonstration application.
- The user can choose a type of virus, view a list of viruses after choosing the virus type, view the structure of the virus and explanation after choosing the virus, and see a demonstration of the progress of virus infection.
- At every screen, there is a Help button that will show guidelines, a button to go back to the main menu, and users can also see our project information by clicking the About button.

3. Design

3.1. General class diagram

3.2. Detailed class diagram

Package : Virus

Package : screen