

# OOP PROJECT - GROUP 14

# VIRUSES

# DEMONSTRATION

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# ASSIGNMENT OF MEMBERS

Task	Member
UseCase Diagram, Class Diagram	Nguyen Viet Minh
General Design, Initial implementation, Model	Nguyen Viet Minh
Image, video, information for input and GUI	All members
GUI Design	Nguyen Tung Luong (70%) Ta Ngoc Minh (30%)
Controller implementation	Nguyen Tung Luong (20%) Ta Ngoc Minh (80%)
Report writing	Nguyen Viet Minh (70%) Nguyen Tung Luong (20%) Ta Ngoc Minh (10%)
Slide outlining and design	Dao Ha Xuan Mai
Demo video recording	Ta Ngoc Minh

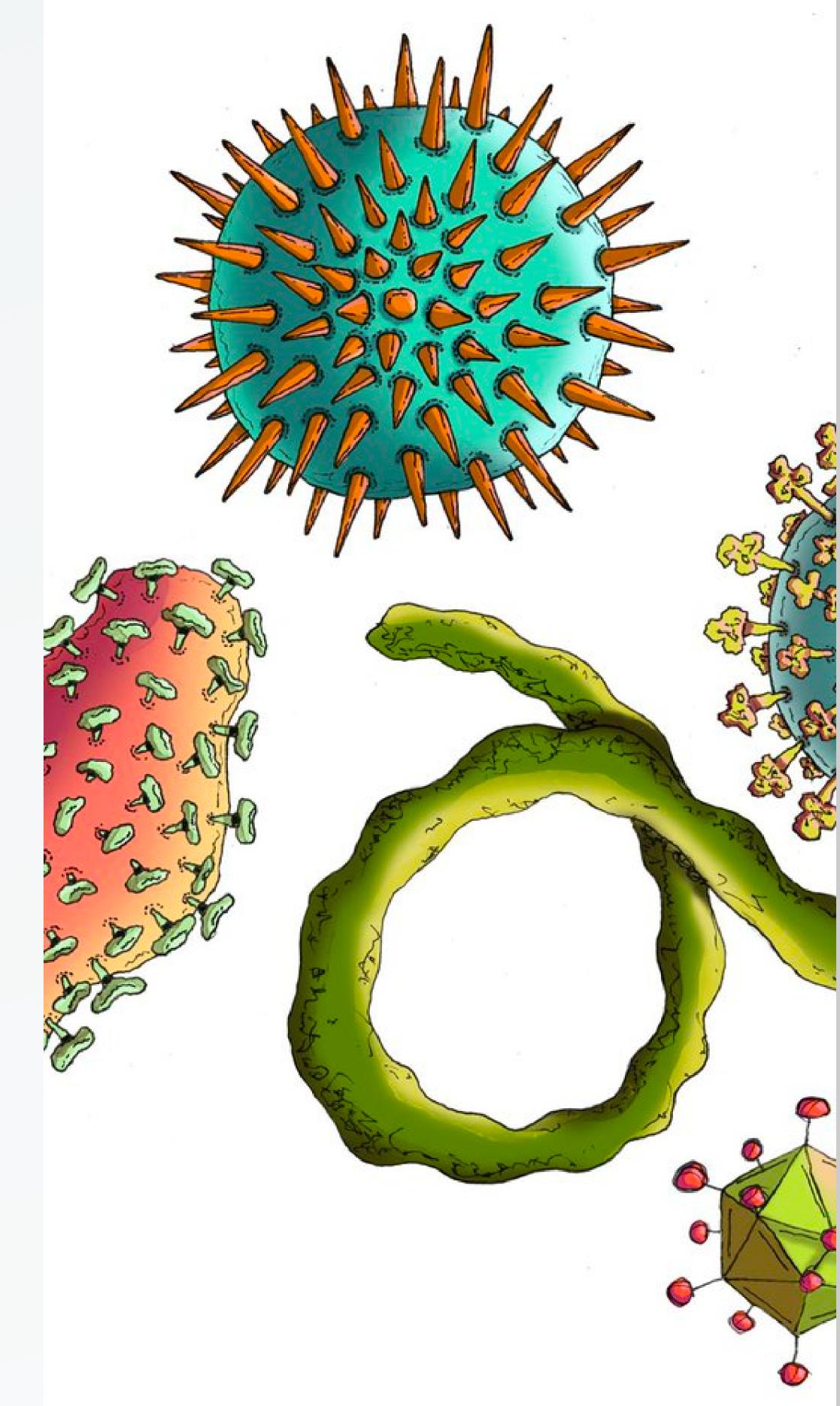
# MINI PROJECT OVERVIEW



Knowledge about different types of viruses and the way they infect

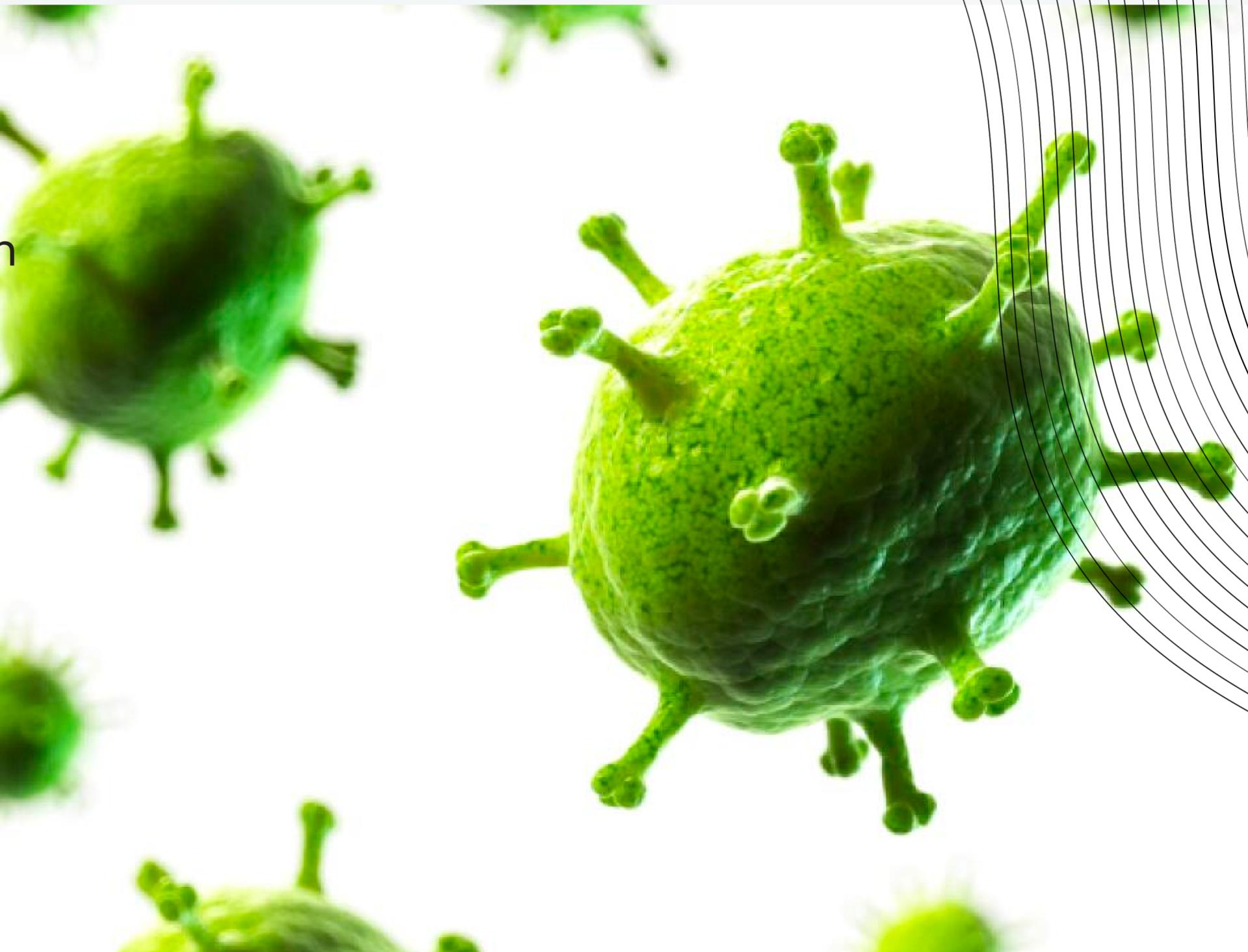


- 2 categories of virus:
- Virus without envelop
  - Virus with envelop

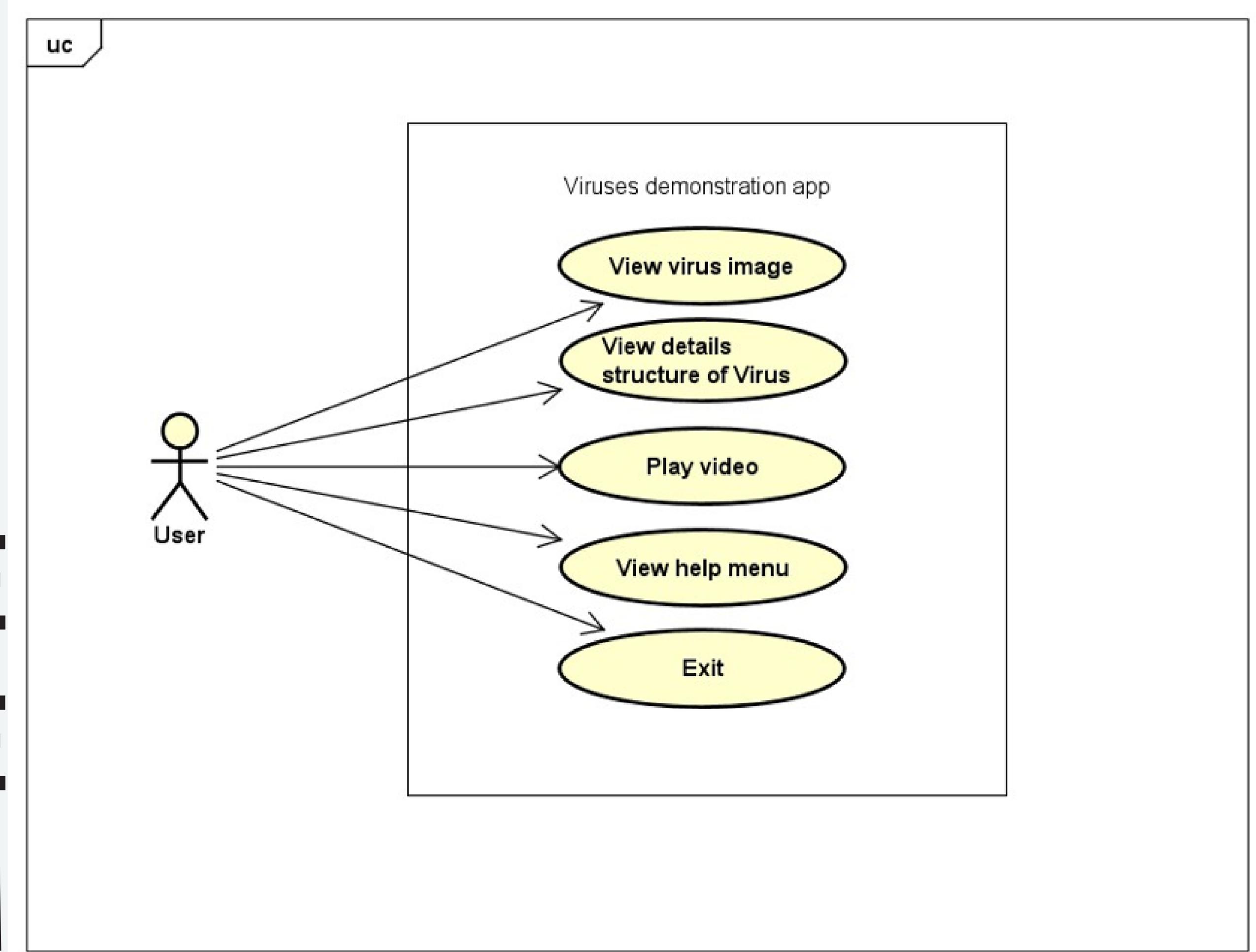


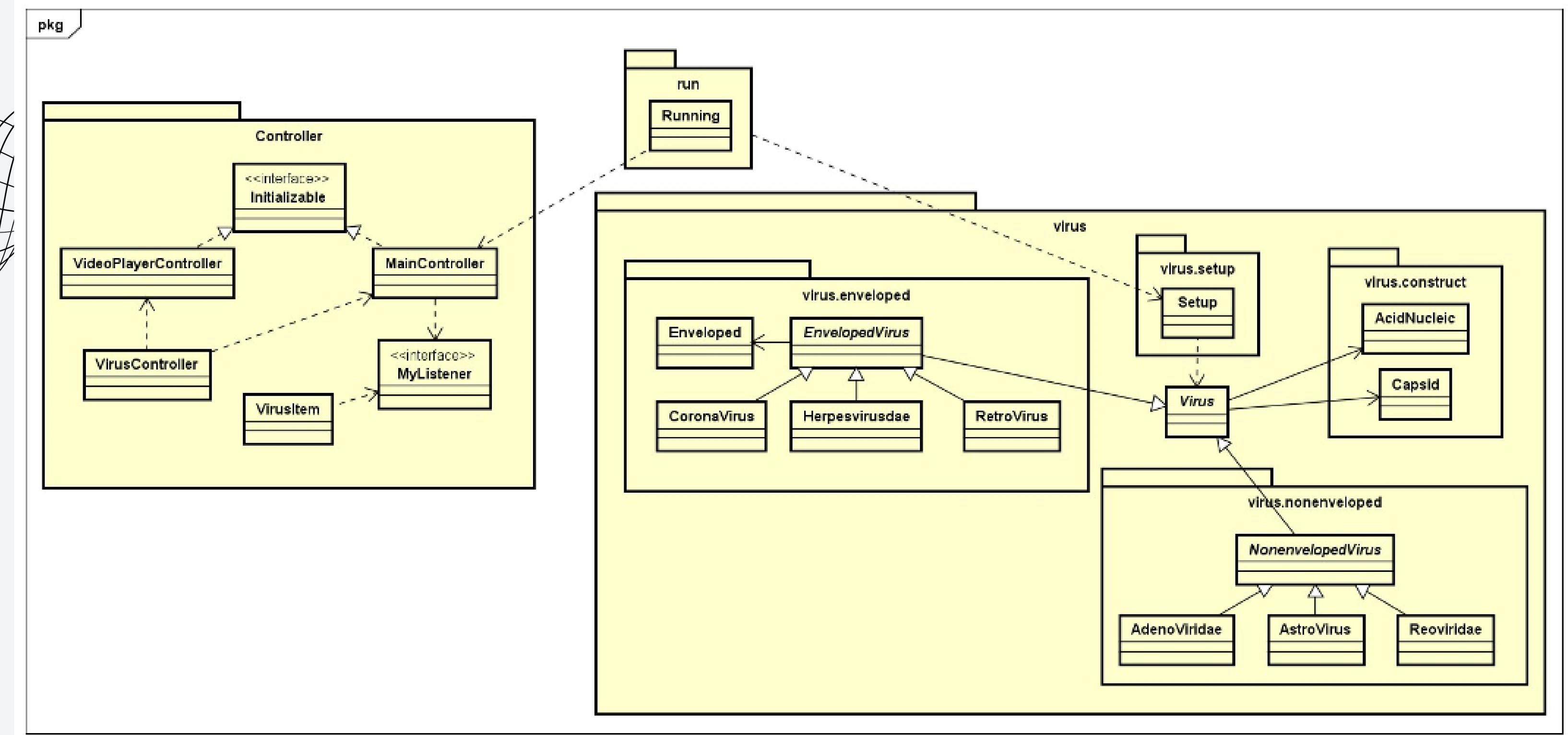
# MINI PROJECT REQUIREMENT

- Goal: Provide a system for users to interact with to get information about different types of viruses provided in the application.



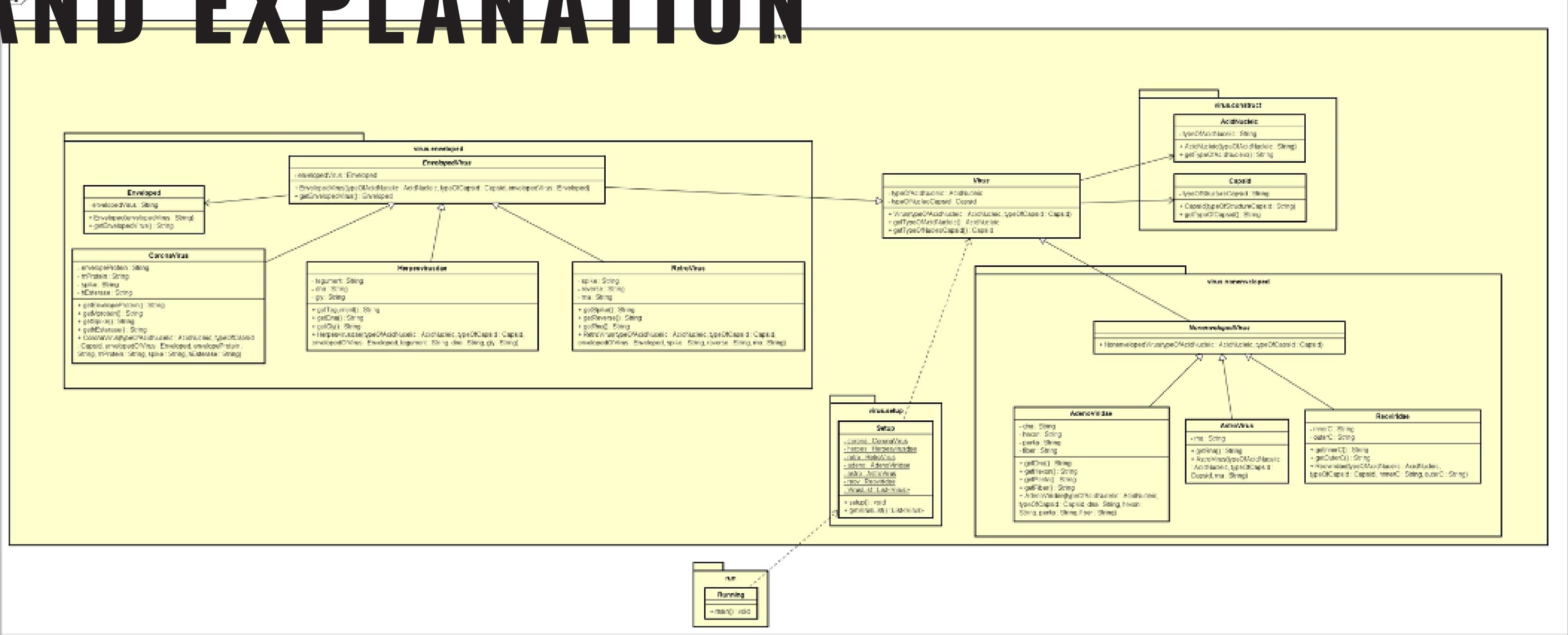
# USE CASE DIAGRAM





# GENERAL CLASS DIAGRAM

# OTHER CLASS DIAGRAM AND EXPLANATION

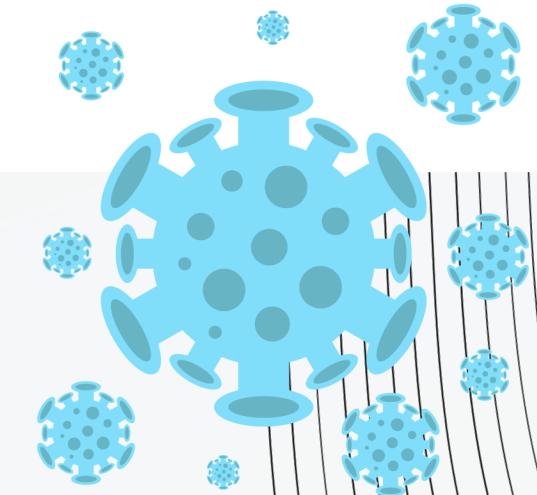


# VIRUS CLASS DIAGRAM

# **ENCAPSULATION**

PROTECT INFORMATION FROM OUR  
ACCESSION AND STORE THE DATA  
MEMBERS AND DATA METHODS OF A  
CLASS TOGETHER.

```
public class CoronaVirus extends EnvelopedVirus {  
    private String envelopeProtein;  
    private String mProtein;  
    private String spike;  
    private String hEsterase;
```



# **ABSTRACTION**

PREVENT CREATING ANY OBJECT  
INSTANCE AND OPTIMIZE METHOD  
STRUCTURE AND REDUCE THE  
OBJECT TO ITS ESSENCE

```
public abstract class Virus {  
    private AcidNucleic typeOfAcidNucleic;  
    private Capsid typeOfNucleoCapsid;
```

# **INHERITANCE**

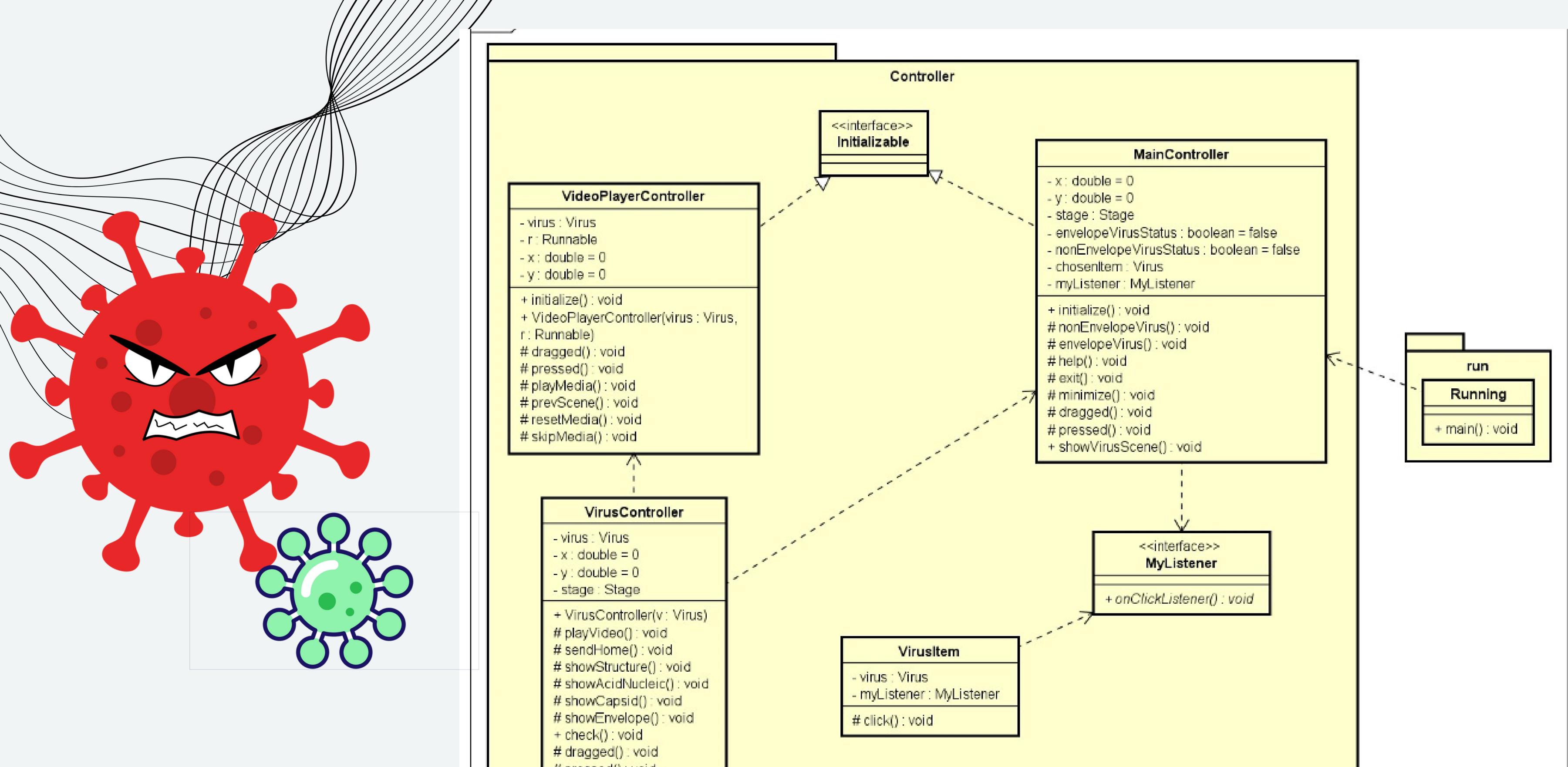
ENABLE ONE CLASS TO ACQUIRE PROPERTIES OF ANOTHER CLASS (CHILD CLASS CAN REUSE ATTRIBUTES OR METHODS OF SUPER CLASS)

```
public abstract class EnvelopedVirus extends Virus{  
    private Enveloped envelopedVirus;
```

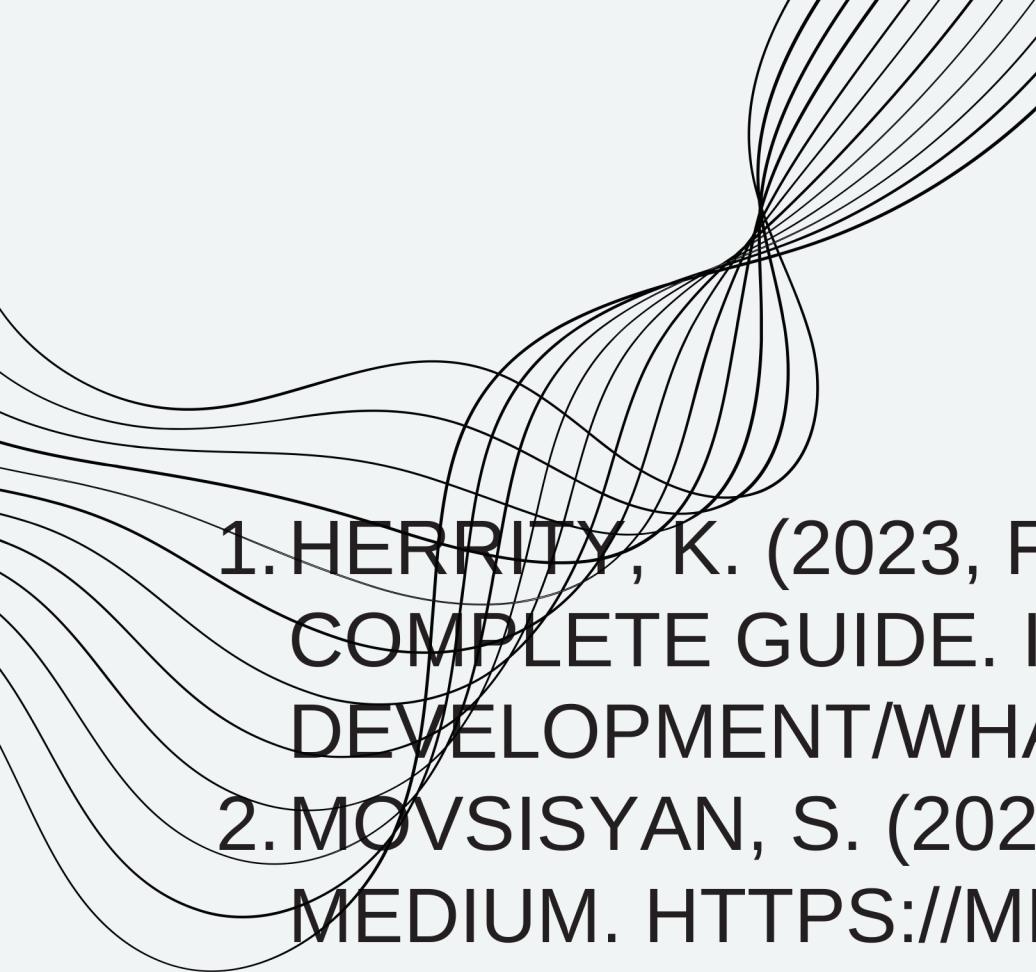
# **POLYMORPHISM**

STATIC: POLYMORPHISM THAT OCCURS IN THE SAME CLASS BY OVERLOADING METHODS

DYNAMIC: POLYMORPHISM THAT OCCURS WHEN CHILD CLASS OVERRIDES METHOD DECLARED IN SUPER OR BASE CLASS



# CONTROLLER CLASS DIAGRAM



# REFERENCES

1. HERRITY, K. (2023, FEBRUARY 4). WHAT IS OBJECT-ORIENTED PROGRAMMING (OOP)? A COMPLETE GUIDE. INDEED.COM. [HTTPS://WWW.INDEED.COM/CAREER-ADVICE/CAREER-DEVELOPMENT/WHAT-IS-OBJECT-ORIENTED-PROGRAMMING](https://www.indeed.com/career-advice/career-development/what-is-object-oriented-programming)
2. MOVSISYAN, S. (2020, APRIL 1). CORONAVIRUS DISEASE AND OOP PARADIGM IN JAVA. MEDIUM. [HTTPS://MEDIUM.COM/JAVAREVISITED/CORONAVIRUS-DISEASE-AND-OOP-PARADIGM-IN-JAVA-AFFAE9BDE0B4](https://medium.com/javarevisited/coronavirus-disease-and-oop-paradigm-in-java-affae9bde0b4)
3. IDEAL OF INITIAL CODE AND OOP CHARACTERISTICS COME FROM HERE.
4. VIRUS - WIKIPEDIA, VIRAL ENVELOPE - WIKIPEDIA,
5. MOST OF THE KNOWLEDGE TAKEN ABOUT VIRUS GO FROM HERE, ALL THE IMAGES TAKEN FROM GOOGLE AND VIDEO TAKEN FROM YOUTUBE.
6. JAVAFX TUTORIAL - GEEKSFORGEEKS.
7. STACK OVERFLOW - WHERE DEVELOPERS LEARN, SHARE, & BUILD CAREERS.
8. JAVAFX DOCUMENTATION, [HTTPS://OPENJFX.IO/JAVADOC/20/](https://openjfx.io/javadoc/20/).
9. CSS GUI FXML FORMATTING AND DESIGN: [HTTPS://GITHUB.COM/K33PTOO/JAVAFX-SAMPLE-DASHBOARD/BLOB/MASTER/SRC/CSS/FULLPACKSTYLING.CSS](https://github.com/k33ptoo/javafx-sample-dashboard/blob/master/src/css/fullpackstyling.css)