

# TUTOR'S NEST



## Tutor's Nest

**"A Project on Connecting the Bridge Between Teachers and Students"**

**Course Name : CSE - 2112 (Object Oriented Programming)**

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# Introduction

## [1.1] The Concept

*Tutor's Nest* is a platform for providing a centralized hub where students can easily connect with private tutors who specialize in the subjects they are interested in. This platform will serve as a one-stop-shop for students looking for academic help outside of the traditional classroom setting. It will allow them to easily find, evaluate, and book private tutors who can provide them with the personalized instruction they need to succeed.

## [1.2] Motivation & Intended Users

As students, we always felt the need to have a platform where we could find tutors at will. It has become rather strenuous to find a quality tutor nowadays in a world full of deceivers. Our project will serve as a connecting bridge between teachers and students, reducing the hassles of both teachers and students greatly and allowing tutors, especially university students like us, to have an avenue of decent income.

The intended users of our platform are students of all ages who are seeking academic support, and tutors who are looking to offer their services to students. The platform will be designed to be user-friendly, making it easy for students to find the right tutor for their needs and for tutors to showcase their skills and expertise.

Our project aims to address the persistent challenge faced by students in finding reliable tutors in today's saturated market. We recognize the increasing difficulty of locating trustworthy educators amidst a sea of deceivers. Therefore, we are developing a platform that serves as a seamless connection between teachers and students, alleviating the burdens experienced by both parties. This platform will particularly benefit university students like us, offering them a reliable source of income.

Our platform is designed with students of all ages in mind, catering to their academic support needs. Additionally, it provides tutors with an avenue to showcase their skills and expertise. We prioritize user-friendliness, ensuring that students can effortlessly find the most suitable tutor for their requirements. Likewise, tutors will find it convenient to present their qualifications and experience on the platform.

Through our initiative, we aim to revolutionize the process of finding tutors, simplifying it and promoting transparency. By bridging the gap between students and tutors, we aim to enhance the learning experience for students while providing tutors with a dependable platform to offer their services.

### [1.3] Major Features

Some of the key options and features of our platform may include:

1. **Search functionality:** The platform included a search function where students can search for tutors based on subject matter, location, availability, price, and other relevant criteria. This will help students narrow down their options and find tutors who are a good fit for their needs.
2. **Tutor profiles:** Each tutor has their own profile where they can provide information about their qualifications, experience, teaching style, and availability. This will help students evaluate potential tutors and choose the one that best matches their learning style.
3. **Communication tools:** The platform also includes communication tools such as messaging, which will allow students to communicate with their tutors to get to know each other well and discuss schedules and remuneration.
4. **Portability:** We were able to host a server to store our data, hence, the app can be run from any PC without the need to create MySQL data tables.

Overall, the purpose of our software is to provide a streamlined and efficient way for students to find private tutors who can help them achieve their academic goals. By providing a centralized hub where students can search for and book tutors, and by offering a range of communication tools, our platform can help facilitate the learning process and improve outcomes for students.

## **[1.4] Tools & Technologies**

We intend on providing our customers with the best experience possible, hence we used the best tools and technologies for product development. The main code was based upon the object-oriented features of Java, and JAVAFX was used as the GUI framework for rich graphical user interfaces and other visual applications. The tools and technologies we used are below:

- 1. UI/UX design : Adobe Creative Suite*
- 2. Code IDE : IntelliJ with SceneBuilder*
- 3. Code Base : JAVA*
- 4. Framework : JavaFX*
- 5. Database : MySQL*
- 6. Design Code Base : CSS*
- 7. UX Code Base : FXML*

## **[1.5] Individual Responsibilities**

### **[1.5.1] Ahaj Mahhin Faiak**

- 1. Graphical User Interface and JavaFX FXML Designer*
- 2. Class Designer and Test*
- 3. Logical Hierarchy of Classes*
- 4. Documentation of Code*
- 5. Build System and Version Control*

### **[1.5.2] Fahim Shakil**

- 1. Database Management and Encryption*
- 2. Logical Hierarchy of Classes*
- 3. UI and Class Designer*

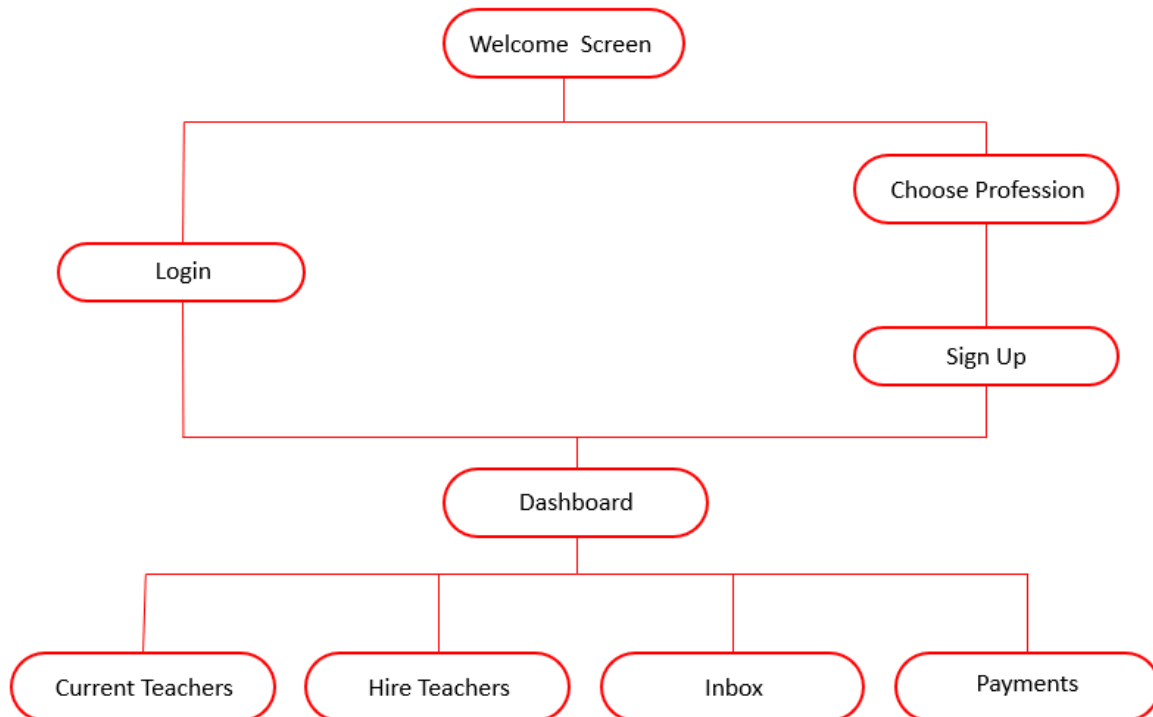
### **[1.5.2] Md. Rokonzaman Rokon**

- 1. Data Communication*
- 2. Code Debug and Test*
- 3. Class designer and Test*
- 4. Documentation of Code*

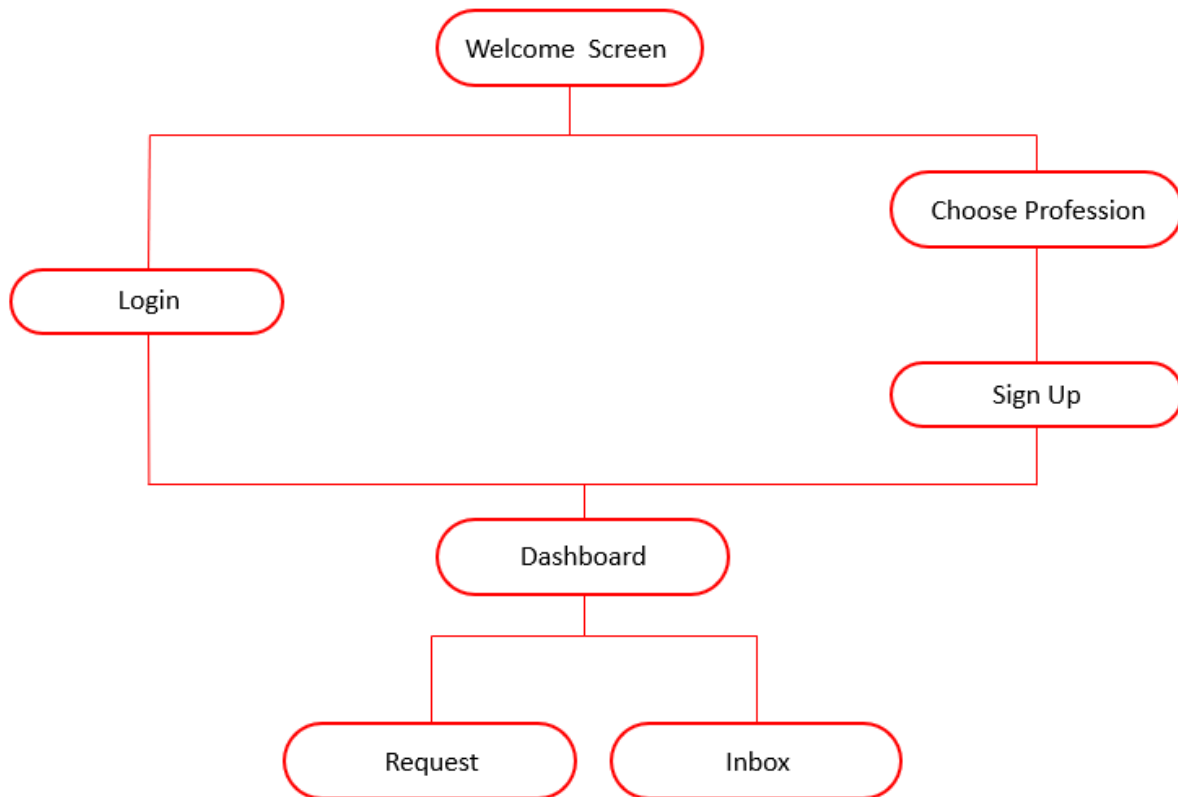
# Design & Implementation

## [2.1] UX Flow

For Students :

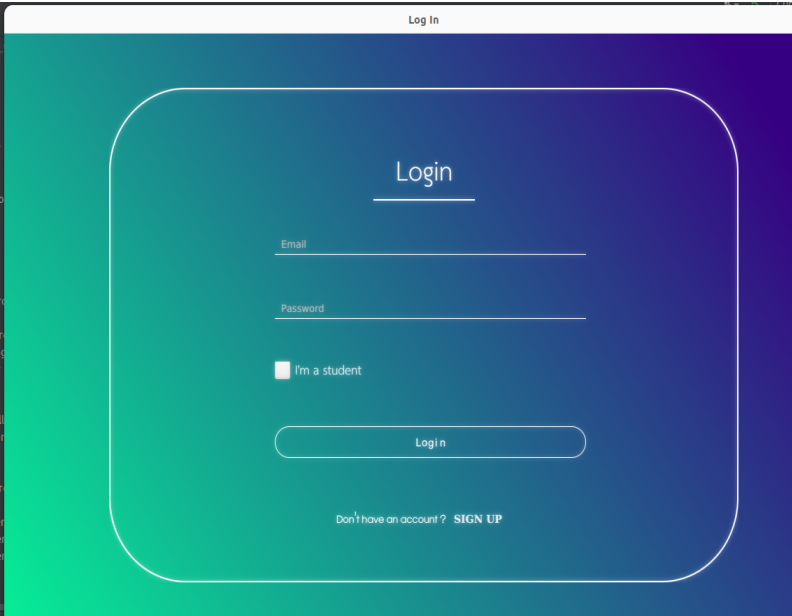
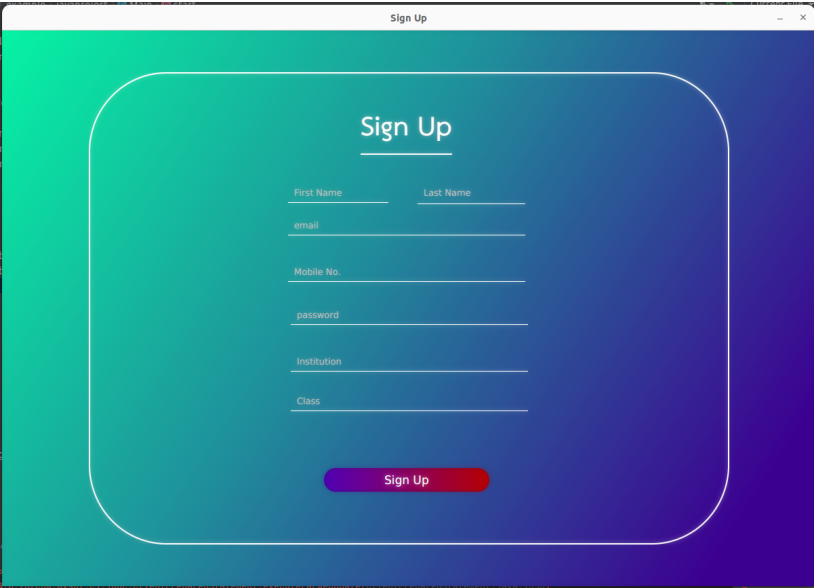
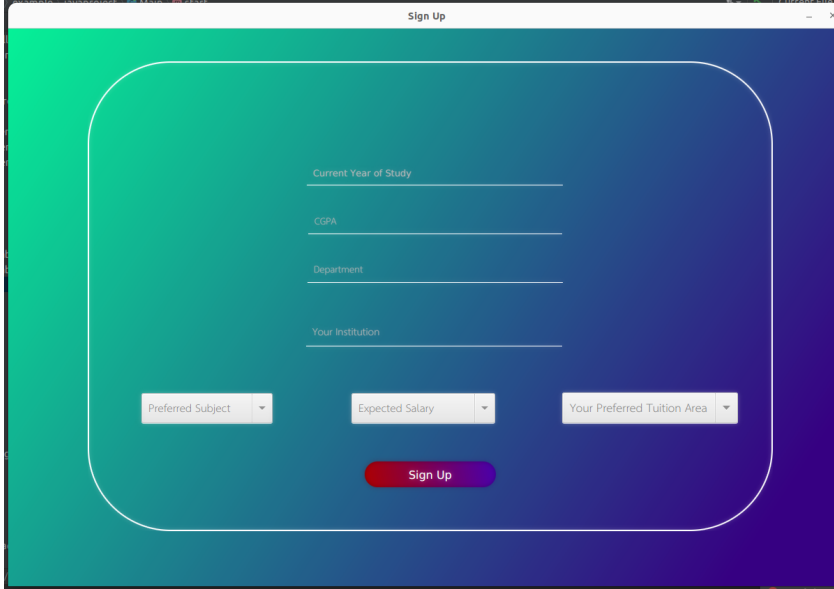
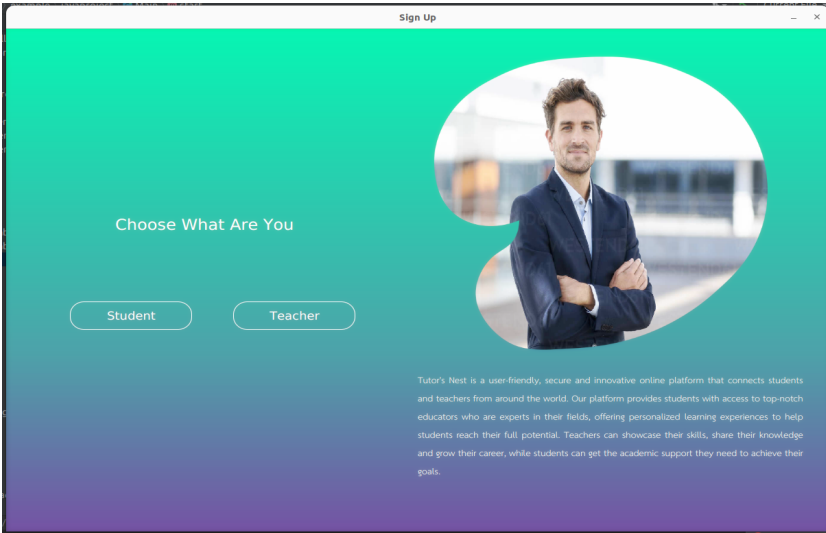
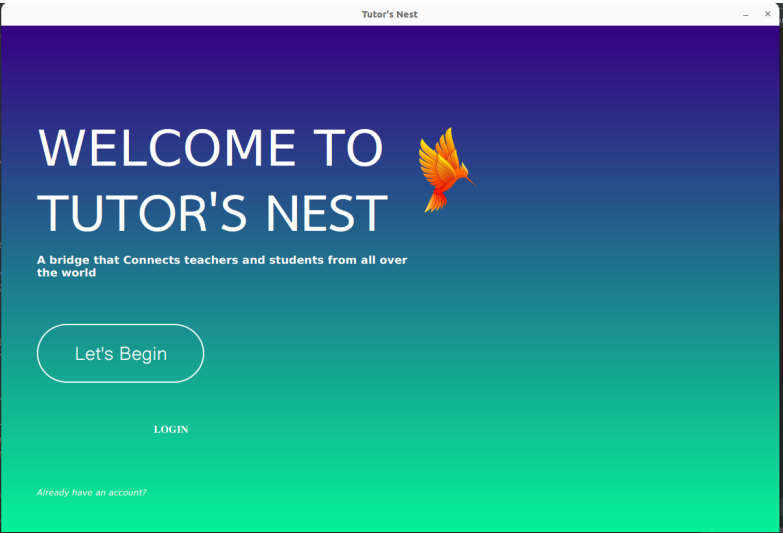


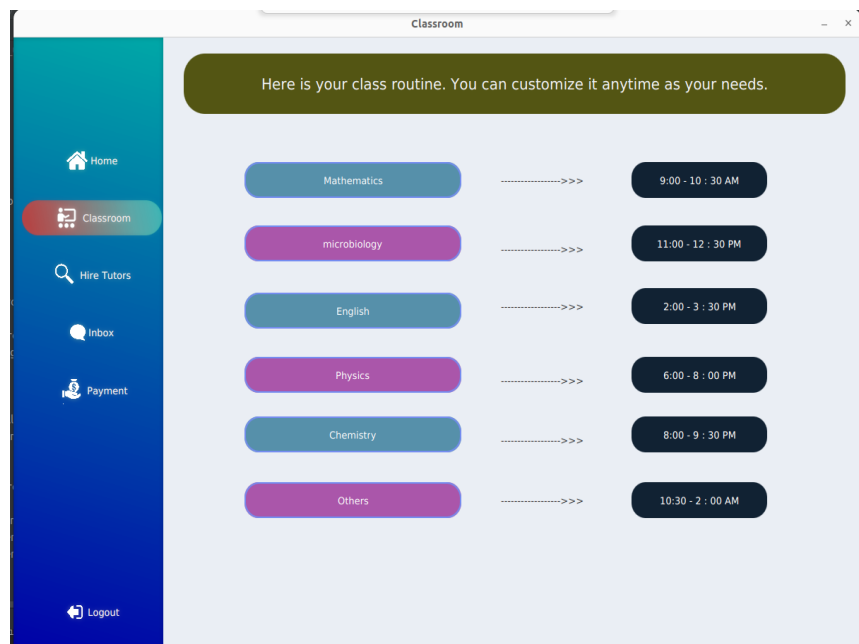
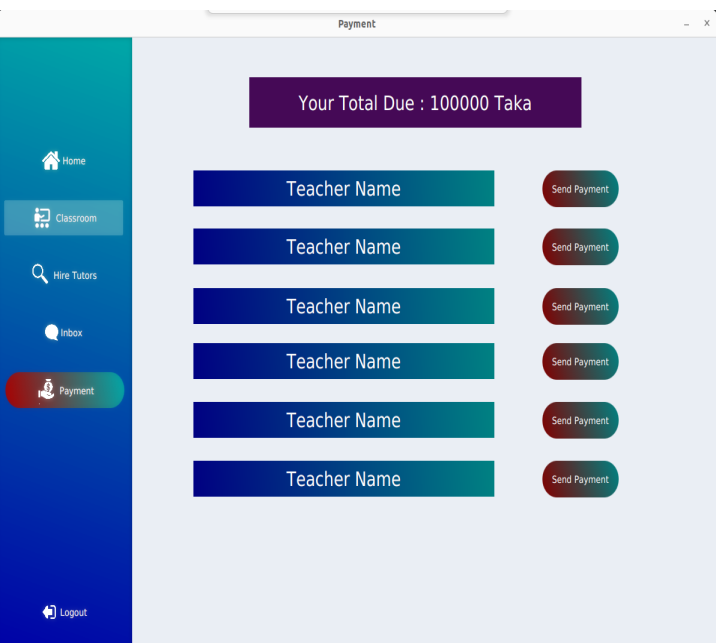
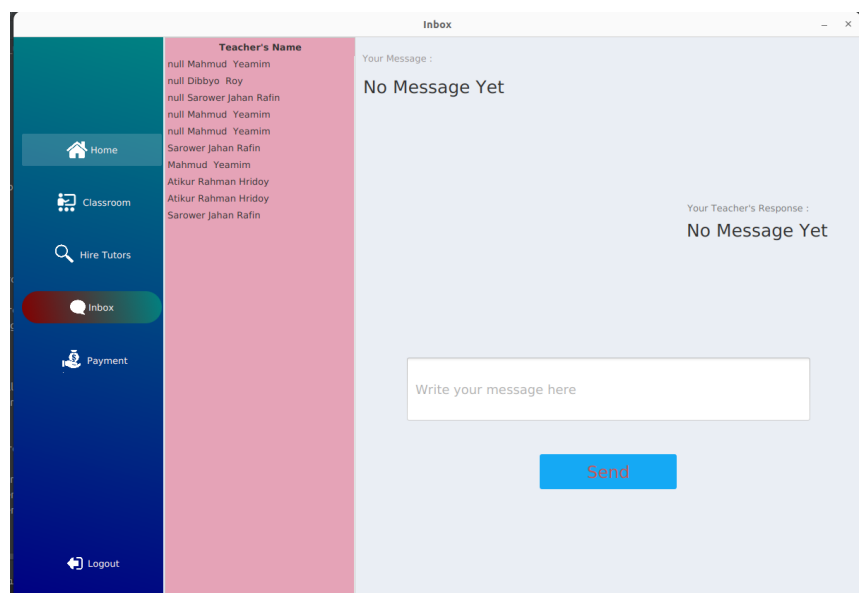
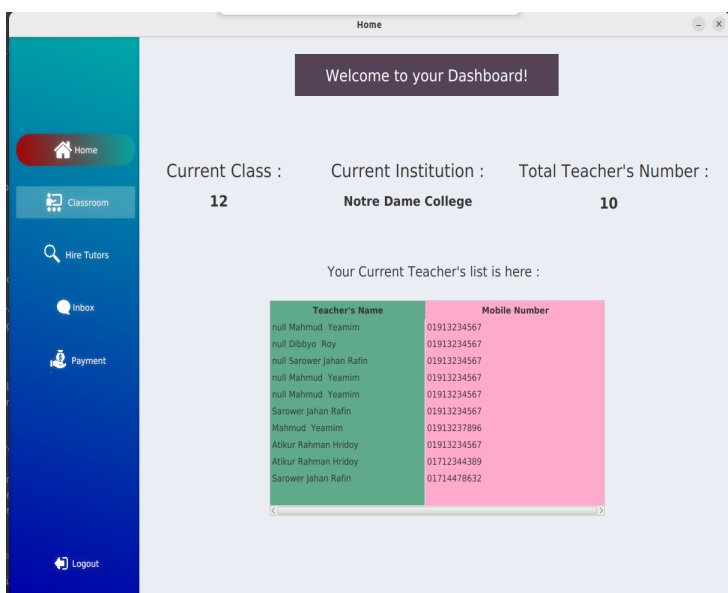
## For Teachers :





[2.2] UI

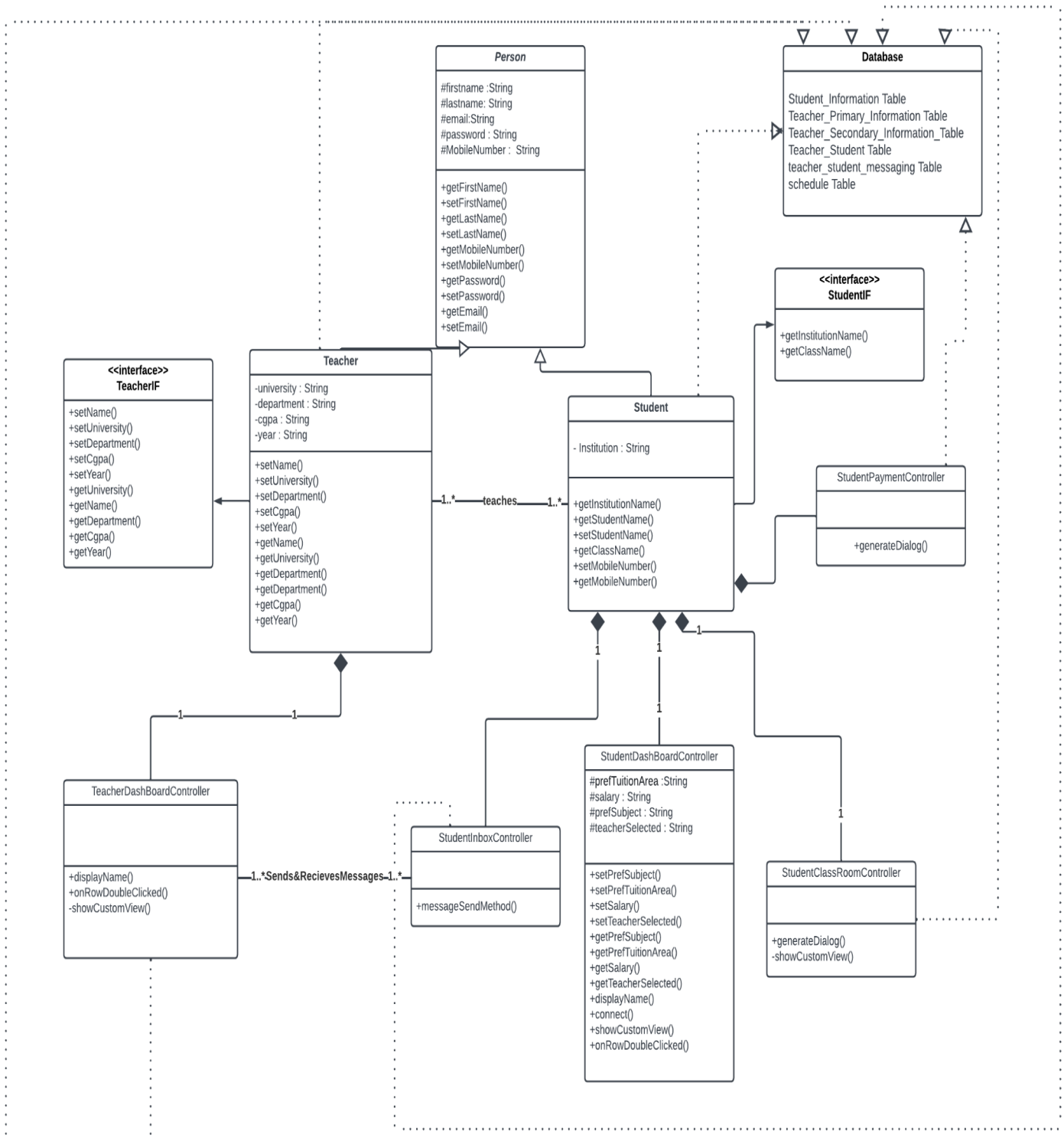






## [2.3] System Design

### UML Diagram



We have divided the whole codebase into two main folders. The java folder for all the Java files and the resources folder for the fxml scenebuilder files and images. The Java folder is divided into two packages. They are described below:

## **Java**

All the classes and interfaces here are made in this package following the provided UML diagram. The extra classes used here outside the UML are driver classes, or classes used for changing scenes or running the application. They are described below:

### ***Main***

Our main driver function is called here, which will launch the program.

### ***TutorsNestUtils***

Changing between scenes and the signup or login function are created here.

### ***DataHub***

A class that contains static variables containing information related to the database server.

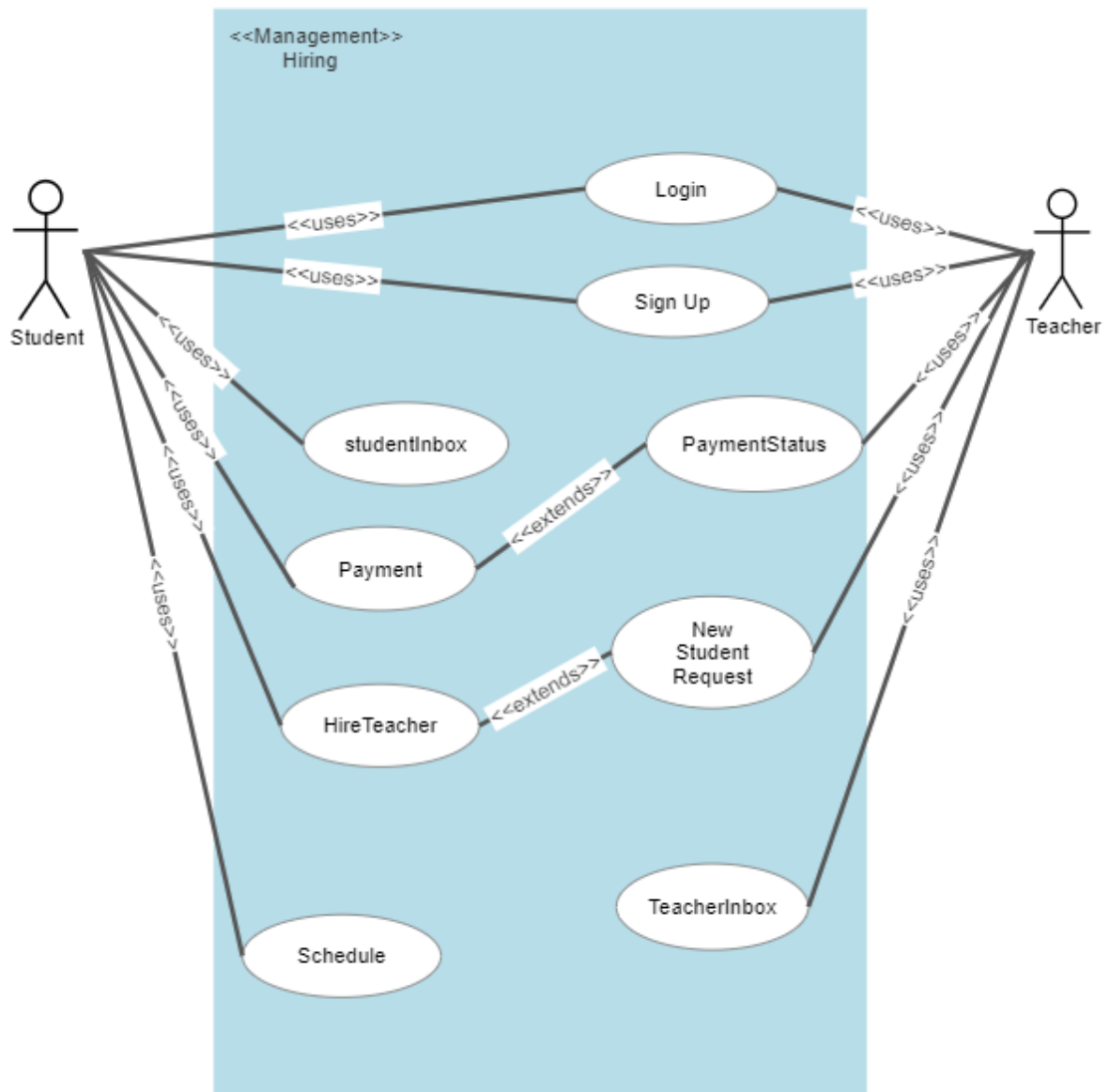
### ***DataHandler***

Contains some methods to send to and retrieve data from the database.

### ***NavigationHandler***

A class to handle all the navigation bar procedures.

## Use Case Diagram



## [2.4] Code Repository:

<https://github.com/fahim33-eng/tutorsNest2>

(We had to change our repository because it was not allowing the branches to merge.... if you are willing to see our progress over time then our initial repository is:

<https://github.com/TerrorBlood47/TutorsNest2> )

# Final Thoughts & Future Work

## [3.1] Limitations :

- Messaging : We use a database server to communicate between tutors and students . But when a student sends a message to the teacher, then previous messaging automatically deletes . that is not user friendly .
- Payment System : We don't show individual tutors due . So students can not see who will get money from them .
- There is no option to remove the teacher . And there is also a problem , when a student adds a teacher , we treat that student selected as tutors . But this thing doesn't match real life .
- The app runs too slow because of slow internet connection.

## **[3.2] Conclusion**

Throughout the development of this desktop application, we have gained a wealth of knowledge and experience in software development. We have learned about various programming languages, libraries, and frameworks, and have developed skills in designing, building, testing, and deploying desktop applications.

One of the major challenges we faced in this project was creating a user-friendly and intuitive interface. Through user testing and feedback, we were able to improve the interface and ensure that it meets the needs of our target users. We also learned about the importance of documentation and version control in software development, and how they can improve the reliability and maintainability of the application.

Overall, this project has been an excellent opportunity for us to apply our software development skills in a real-world context. We are proud of the progress we have made and the knowledge we have gained, and we believe that the application we have developed will be useful to our target audience. We look forward to continuing to refine and improve the application, and to using the skills and expertise we have developed in future software development projects.