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Porao

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This Project report has been submitted in fulfillment of the requirements for the
Degree of Bachelor of Science in Software Engineering.

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APPROVAL

This thesis titled on “**Tutor Management System**”, submitted by **Nabi Noor Hussain (ID: 201-35-563)** to the Department of Software Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Science in Software Engineering and approval as to its style and contents.

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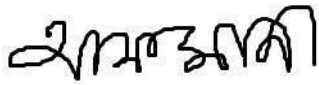
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DECLARATION

I hereby declare that I carried out the work reported in this report in the **Department of Software Engineering, Daffodil International University**, Under the Supervision of **Afsana Begum**. Materials of work found by other researchers are mentioned by reference.

I solemnly declare that to the best of my knowledge; no part of this report has been submitted here or elsewhere in a previous application for degree.

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I am deeply thankful to the Department of Software Engineering, Daffodil International University I would like to express my deepest appreciation to my project supervisor, Afsana Begum assistant professor Department of Software Engineering, Daffodil International University, for his/her endless guidance, valuable advice, continuous encouragement, and constant supervision, which made it possible to complete this project.

I am also very grateful to all my teachers and friends for their valuable suggestions, help, and support during the completion of my project. Lastly, I must acknowledge with due respect the constant support and patience of my parents.

ABSTRACT

“Porao” App is an online learning management system which aims at bringing together tutees on one hand and tutors on the other hand. This application is created with a view of increasing the link between these two categories of people through smooth interface and powerful operations. The platform assists the teachers in making profiles and the listing of services offered and managing the learners appropriately. Students are able to look for a specific teacher with specific filters, arrange and organize lessons, and monitor their performance. There are additional options in the app for such things as managing student attendance, online exam, direct communication for the teachers and students, and giving of reviews and feedbacks. Using up to date technologies like ReactJS, NodeJS and MongoDB, the Porao App has been developed in a way that give teachers and students the best experience and hopefully enhance the quality of education and accessibility to tuition services. The development process also includes considerations of operation, technical, economical, and legal aspect so that easy, effective, and secure platform will be created that users of different range will be able to use. Thus, not only are the current educational requirements met, but further improvements and development are provided for with this project to accommodate the increased need for effective, personalized learning management systems.

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Introduction

1.1 Case Study

Learning management systems (LMS) have transformed the educational landscape by providing platforms where teachers and students can interact outside traditional classrooms. Porao App aims to bridge the gap between teachers seeking students and students seeking tutors by providing a seamless, efficient platform for both parties.

1.2 Finding Gaps

Despite numerous LMS available, there remains a gap in personalized tuition matching. Porao App addresses this by focusing on individual needs of teachers and students, offering features that enhance personalized learning and teaching experiences.

1.3 Motivation

The motivation behind Porao App is to create an accessible, user-friendly platform that benefits both teachers and students by facilitating easy connections and efficient communication, thereby enhancing the overall learning experience.

1.4 About the Project

Porao App is developed as a web-based platform using modern technologies like ReactJS, NodeJS, MongoDB. The app allows teachers to create profiles, list their tuition services, and manage student interactions. Students can search for teachers, schedule lessons, and track their learning progress. Additional features include setting attendance, conducting online exams, providing reviews, and enabling chat functionalities.

1.5 Objective

1. To create a platform that effectively connects teachers and students.
2. To ensure ease of use and accessibility for all users.
3. To provide features that support efficient teaching and learning processes.
4. To enhance communication through chat functionality.
5. To enable teachers to manage student attendance and conduct online exams.
6. To allow students to review teachers and provide feedback

1.6 Stakeholders

1. Teachers: Primary users who offer tuition services.
2. Students: Primary users who seek tuition services.
3. Administrators: Manage the app and ensure smooth operation.

Chapter 2

System Analysis

2.1 Feasibility Study

In evaluating the feasibility of this software project, I will consider various relevant aspects, including economic, technical, and operational viability. This feasibility study will enable me to determine whether our team has the capability to undertake this project. I will assess feasibility by examining the tools and technologies we plan to use, along with the requirements identified for different parts of the project, as outlined below.

2.1.1 Operational Feasibility

The Porao App is designed to enhance the operational efficiency of finding and managing tuition services. It streamlines the process, making it easier for teachers and students to connect and communicate.

2.1.2 Technical Feasibility

The project leverages robust technologies such as Python, Django, and MySQL, which are well-suited for developing a reliable web-based application. The technical team is proficient in these technologies, ensuring the project's successful implementation.

Technologies	Manpower	Mitigation Strategies
Python, Django V-x, MySQL, Vue.Js, Git, TensorFlow	2	Train 1 team member
Base Tech AI, Deep Learning	1	Train 1 team member
Complex Algorithms and APIs	2	No training required

2.1.3 Economic Feasibility

The development and operational costs of the Porao App are within acceptable limits. The potential for widespread adoption justifies the investment, as the app addresses a significant market need.

2.1.4 Legal Feasibility

The application adheres to all applicable laws and regulations, including those related to data protection and privacy, guaranteeing that it is legally compliant and secure for users.

2.1.5 Scheduling Feasibility

The project is scheduled to be completed within a 6-month timeframe, with detailed planning to ensure timely delivery of all phases from development to deployment.

2.2 Time Estimation

Activity	Duration
Requirement Collection	5
Feasibility Study	7
Design	10
Development	40
Testing	5

2.3 Cost Estimation

Items	Hours	Cost	Subtotal
Project Management	1000	\$50	\$5000
Development	2000	\$40	\$80000
Testing	500	\$30	\$15000
Hardware & Software			
Total			\$155000

Chapter 3

Software Requirement Specification

3.1 Functional Requirements

3.1.1 FR for Users

- **Registration:** Users can create new profiles.
- **Login/Logout:** Users can log in and out securely.
- **Search Teachers:** Users can search for teachers based on subjects and availability.
- **Schedule Lessons:** Users can schedule and manage lessons with teachers.
- **Profile Management:** Users can update their profiles and track their learning progress.
- **Chat with Teachers:** Users can communicate directly with teachers through the app.
- **Review Teachers:** Users can provide feedback and reviews for teachers.

3.1.2 FR for Teachers

- **Registration:** Teachers can create new profiles.
- **Login/Logout:** Teachers can log in and out securely.
- **List Services:** Teachers can list their tuition services.
- **Manage Students:** Teachers can manage student interactions and schedules.
- **Profile Management:** Teachers can update their profiles and track their teaching progress.
- **Set Attendance:** Teachers can mark attendance for their students.
- **Conduct Online Exams:** Teachers can create and administer online exams.
- **Chat with Students:** Teachers can communicate directly with students through the app.

3.1.3 FR for Administrators

- **User Management:** Administrators can add, remove, and manage user accounts, including both students and teachers.

- **Content Moderation:** Administrators can review and manage content posted on the platform, such as teacher profiles and student reviews.
- **Report Generation:** Administrators can generate reports on various aspects of the app usage, including user activity, attendance records, and exam results.
- **System Monitoring:** Administrators can monitor the system's performance and manage resources to ensure optimal operation.
- **Security Management:** Administrators can manage security settings, monitor for suspicious activities, and enforce data protection policies.
- **Support Management:** Administrators can provide support to users, including handling user inquiries and troubleshooting issues.
- **Notification Management:** Administrators can manage system notifications, alerts, and updates to users.
- **Feature Management:** Administrators can enable or disable specific features within the app based on policy or user feedback.
- **Payment Management:** Administrators can manage payment transactions and subscriptions if the app includes any premium features or services.
- **Data Backup and Recovery:** Administrators can perform data backup and ensure recovery protocols are in place to protect user data.

3.1 Non-Functional Requirements

Non-functional requirements are crucial for ensuring the Porao App meets performance, safety, fault tolerance, maintenance, and security standards. Below are the detailed non-functional requirements for the Porao App

3.1.1 Performance

NFR-01	The landing page will respond within one second.
Description	Response to view information shall take no longer than 5 seconds to appear on the screen.
Stakeholders	Developer

NFR-02	Online Exam Submission
Description	Submission of online exams by students should be processed within 2 seconds.
Stakeholders	Teacher, Students

NFR-03	Search Functionality
Description	The search function should display results within 3 seconds.
Stakeholders	Developer

3.1.2 Maintenance

NFR-05	The system allows updating information at any time.
Description	The admin can modify or update any information as needed.
Stakeholders	Admin

3.1.3 Security

NFR-05	Ensure high-level security for every action in this module.
Description	Registration with secure measures, including multi-layer validation with OTP, to maintain user and administration level security.
Stakeholders	Admin

Chapter 4

System Analysis & Design

4.1 Use Case Diagram

Our use case diagram involves four actors, detailing the refinement of my project in depth.

4.1.1 Use Case Diagram and Description: User (Students)

4.1.1.1 Use Case Diagram

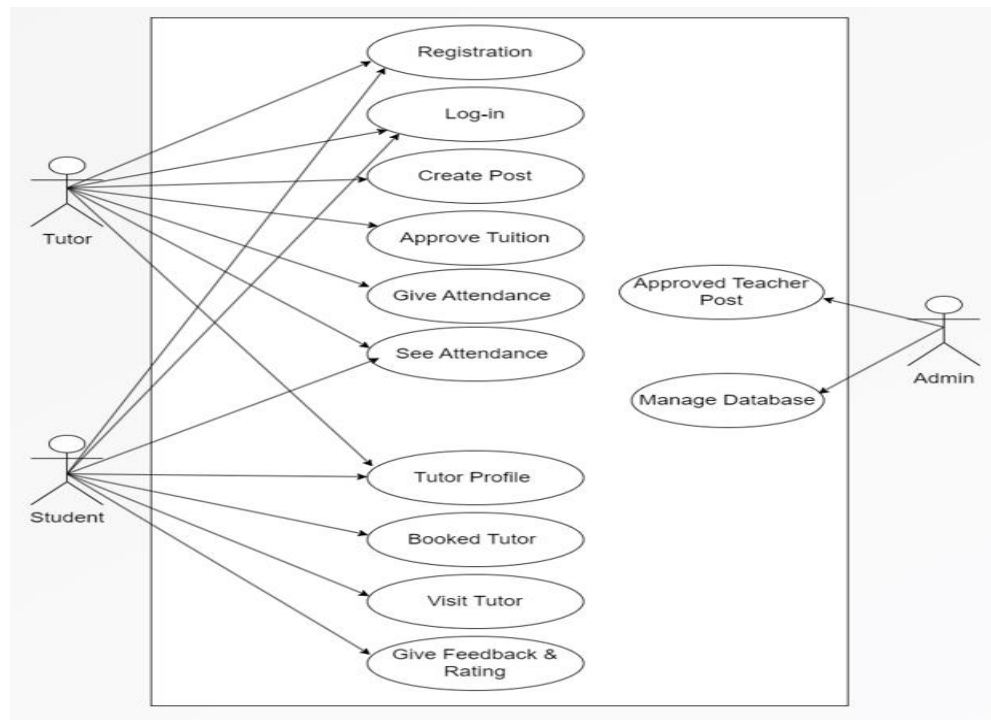


Fig: 4.1.1 User Use Case Diagram

4.1.1.2 Use Case Diagram Description

Use Case Name	Registration
Actor	Students
Description	Students can independently create a new profile for registration.
Precondition	Students must be on the registration page.
Trigger	Clicking the "Registration" button.
Flow of Events	-Students will click Register button
Post Condition	A new student profile is added to the system.

Use Case Name	Login
Actor	Students
Description	Students log into the system using their credentials.
Precondition	Students must be on the login page.
Trigger	Clicking the "Login" button.
Flow of Events	- Two text boxes for entering phone number and password appear. - Students enter their credentials. - Information is submitted.
Post Condition	Students successfully log into the system.

Use Case Name	Request for book tuition
Actor	Students
Description	Students can book tuition of their selected teacher
Precondition	Students must be on home page.
Trigger	By clicking book tuition button teacher can be book
Flow of Events	-Students give basics information
Post Condition	Students successfully book a teacher in the system.

Use Case Name	Request for Chat
Actor	Students
Description	Students can do conversations
Precondition	Students must be in message page
Trigger	By clicking message link, they navigate message page

Use Case Name	Attendance
Actor	Students
Description	Students see their attendance reports of every month
Precondition	Students must be on home page

Trigger	By clicking see attendance they navigate attendance page and see report
----------------	---

Use Case Name	Online Exam
Actor	Students
Description	Students can attend online exams
Precondition	Students must be on home page
Trigger	By clicking start exams teacher navigate exam page and give exams

Use Case Name	Logout
Actor	User (teacher and students)
Description	Users can log out from their accounts.
Precondition	User must be logged in
Trigger	Clicking the “Logout” button
Flow of Events	- User is logged into the system. - User clicks the logout button.
Post Condition	User is logged out from the system and redirected to the login page.

4.1.2 Use Case Diagram and Description: Teacher

4.1.2.1 Use Case Diagram

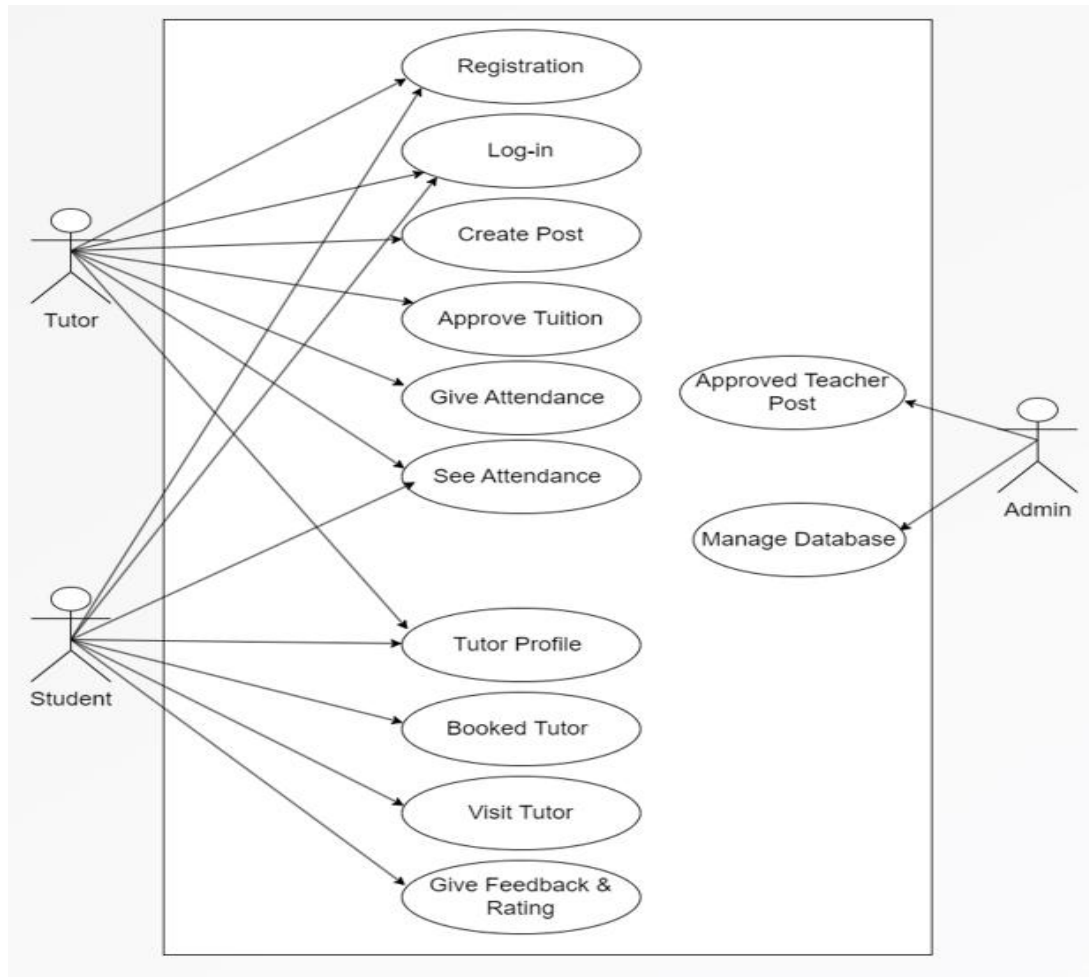


Fig: 4.1.2 Teacher Use Case Diagram

4.1.2.2 Use Case Diagram Description

Use Case Name	Registration
Actor	Teachers
Description	Teachers can independently create a new profile for registration.
Precondition	Teachers must be on the registration page.
Trigger	Clicking the "Registration" button.
Flow of Events	- Teachers will click Register button
Post Condition	A new Teacher profile is added to the system.

Use Case Name	Login
Actor	Teachers
Description	Teachers log into the system using their credentials.
Precondition	Teachers must be on the login page
Trigger	Clicking the "Login" button.
Flow of Events	- Two text boxes for entering phone number and password appear. --Teachers enter their credentials. -Information is submitted.
Post Condition	Teachers successfully log into the system.

Use Case Name	Accept Request for book tuition
Actor	Teachers
Description	Teachers accept tuition request students
Precondition	Teachers must be on home page.
Trigger	By clicking accept tuition request button teacher can accept
Post Condition	Booking information can be successfully added to this system.

Use Case Name	Request for Chat
Actor	Teacher
Description	teacher can do conversations with students
Precondition	teacher must be in message page
Trigger	By clicking message link, they navigate message page

Use Case Name	Attendance
Actor	Teacher
Description	Teacher can give attendance and take online exams
Precondition	Teacher must be on home page
Trigger	By clicking attendance teacher navigate attendance page and take attendance

Use Case Name	Online Exam
Actor	Teacher
Description	Teacher takes online exams
Precondition	Teacher must be on home page
Trigger	By clicking take exams teacher navigate exam page and take exams

Use Case Name	Logout
Actor	User (teacher and students)
Description	Users have the capability to reset their own account passwords
Precondition	The user must already be logged into the system
Trigger	Initiated by clicking the logout button.
Flow of Events	1. The user is currently logged into the system. 2. The user clicks on the logout button.
Post Condition	The user is logged out of the system and redirected to the login page.

4.1.3 Use Case Diagram and Description: Admin

4.1.3.1 Use Case Diagram

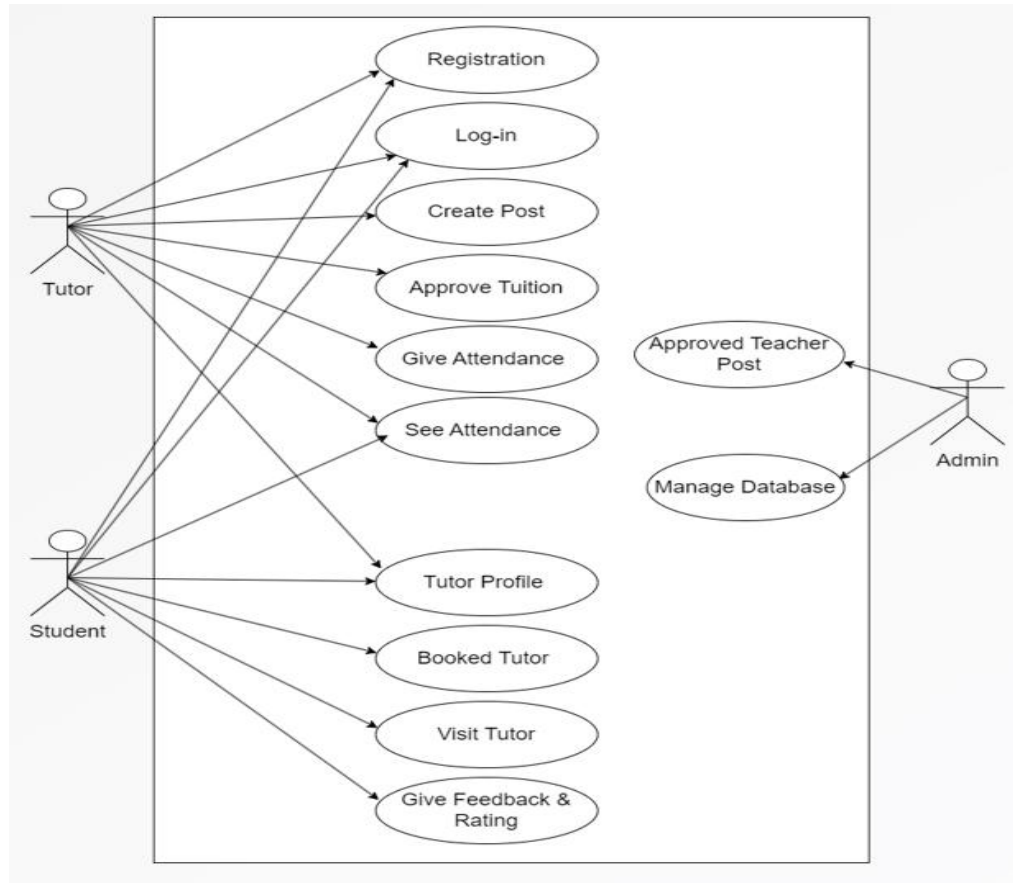


Fig: 4.1.3 Admin Use Case Diagram

4.1.3.2 Use Case Diagram Description

Use Case Name	Admin
Actor	Admin
Description	Admin maintain all database services
Precondition	Admin must be on admin page
Trigger	By clicking dashboard admin navigate dashboard page and maintain everything also approved teacher post

Chapter 5

Activity Diagram

In this context, we will provide an overview of how the system operates across different modules. To achieve this, we will break down all activities into smaller components and incorporate them into activity diagrams. The purpose of these activity diagrams is:

- ✓ To illustrate the activity flow of our solution.
- ✓ To describe the sequence of transitions from one activity to another

5.1 Activity diagram for Registration

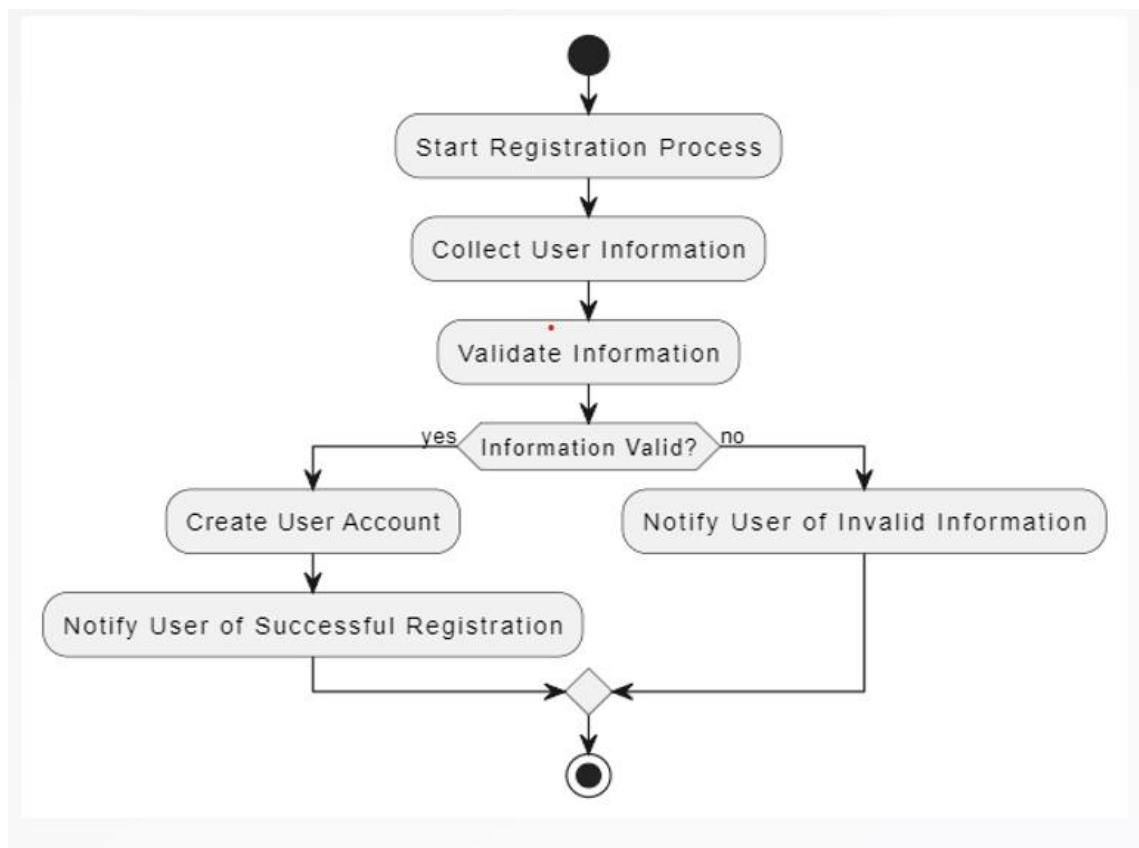


Fig: 5.1 Registration Activity Diagram

5.2 Activity diagram for login

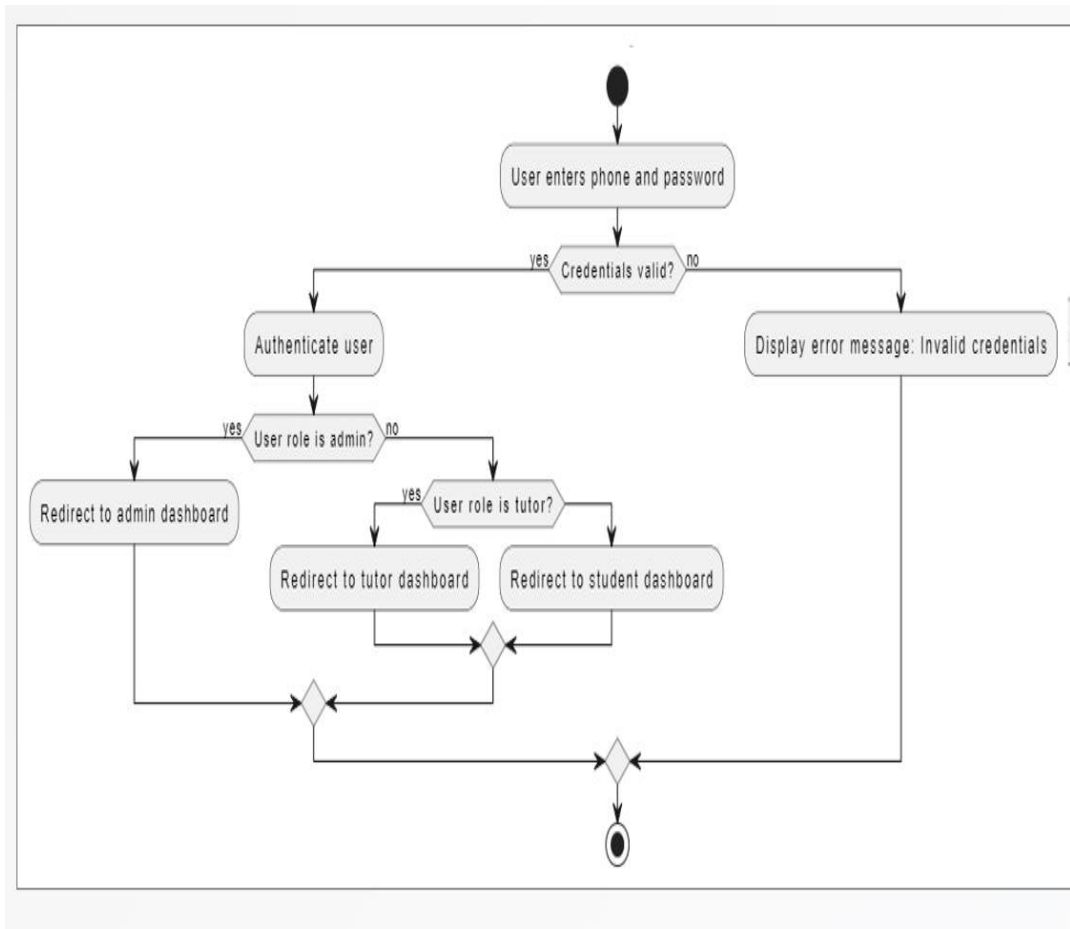


Fig: 5.2 Login Activity Diagram

5.3 Activity diagram for User

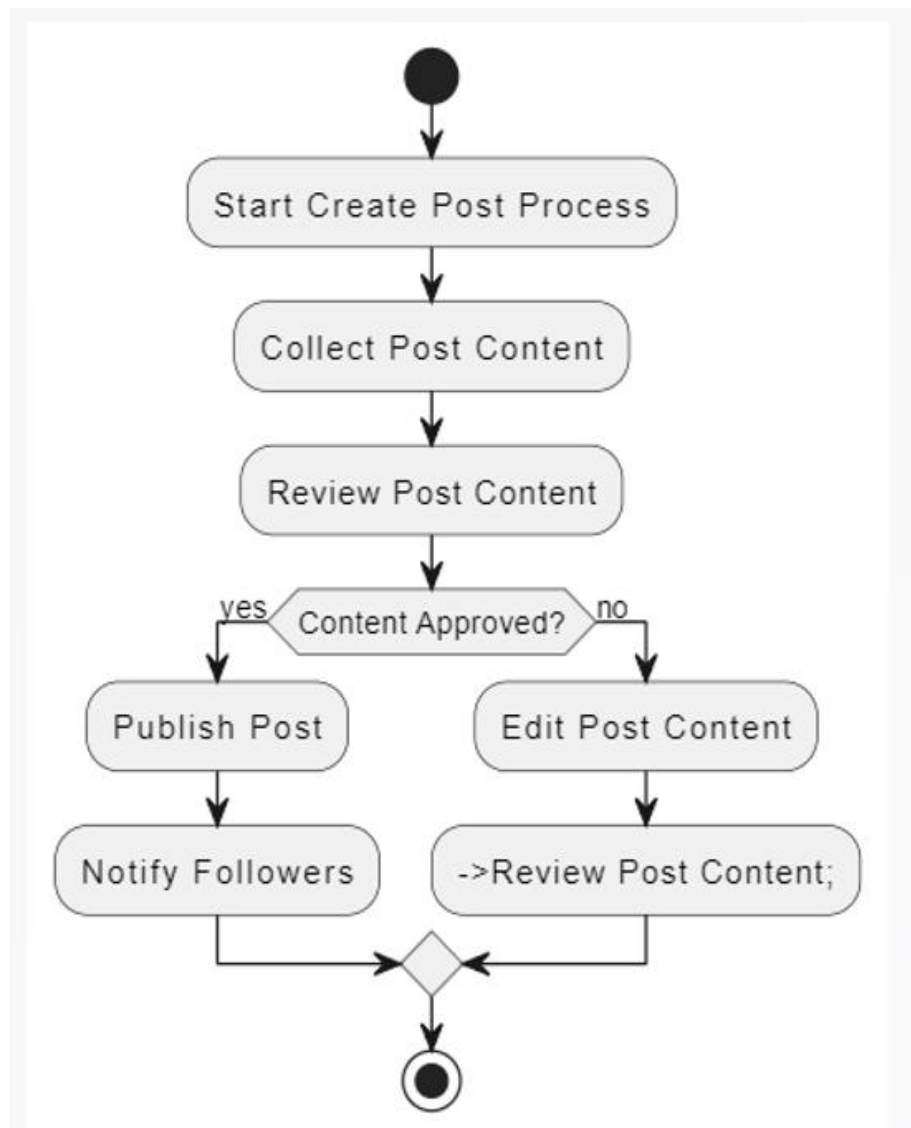


Fig: 5.3 Teacher create Tuition post Activity Diagram

5.3.1 Activity diagram for Approved Students in Tuition Batch

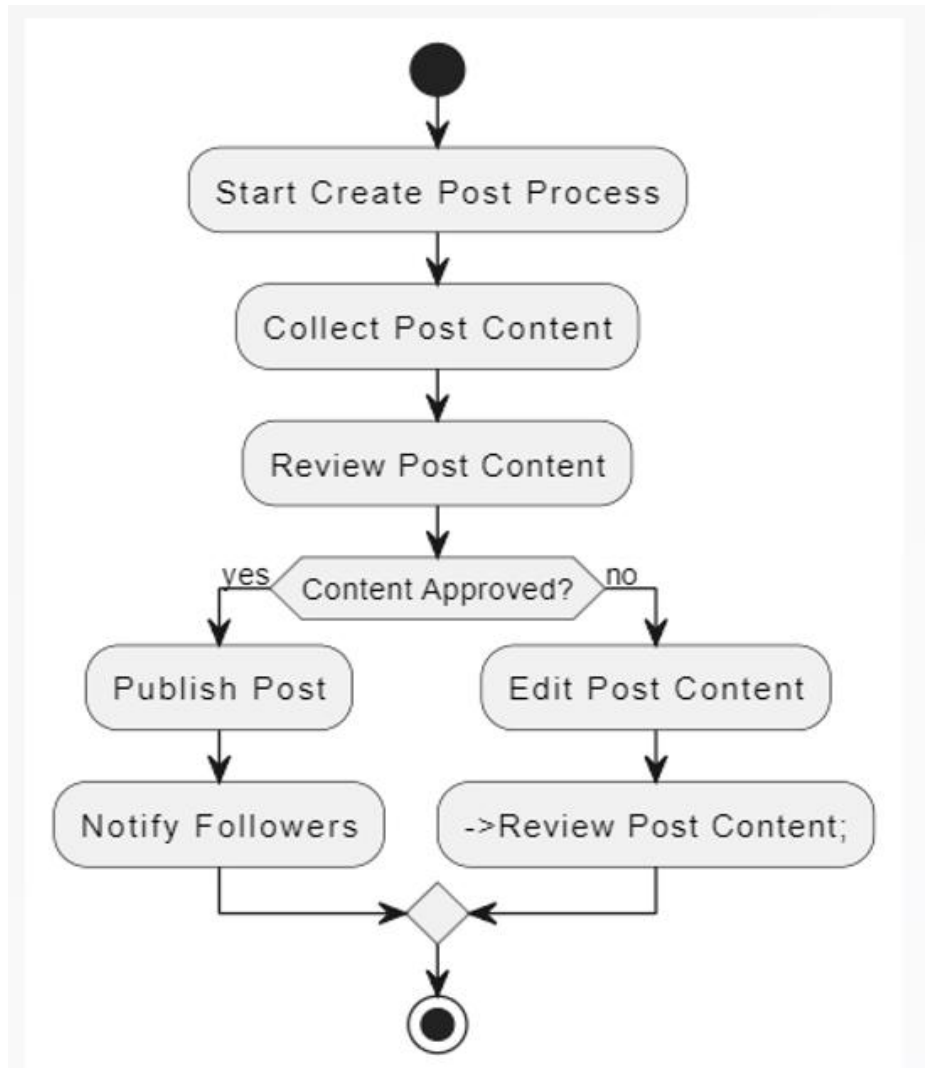


Fig: 5.3.1 User Create Emoji Activity Diagram

5.4 Activity diagram for attendance

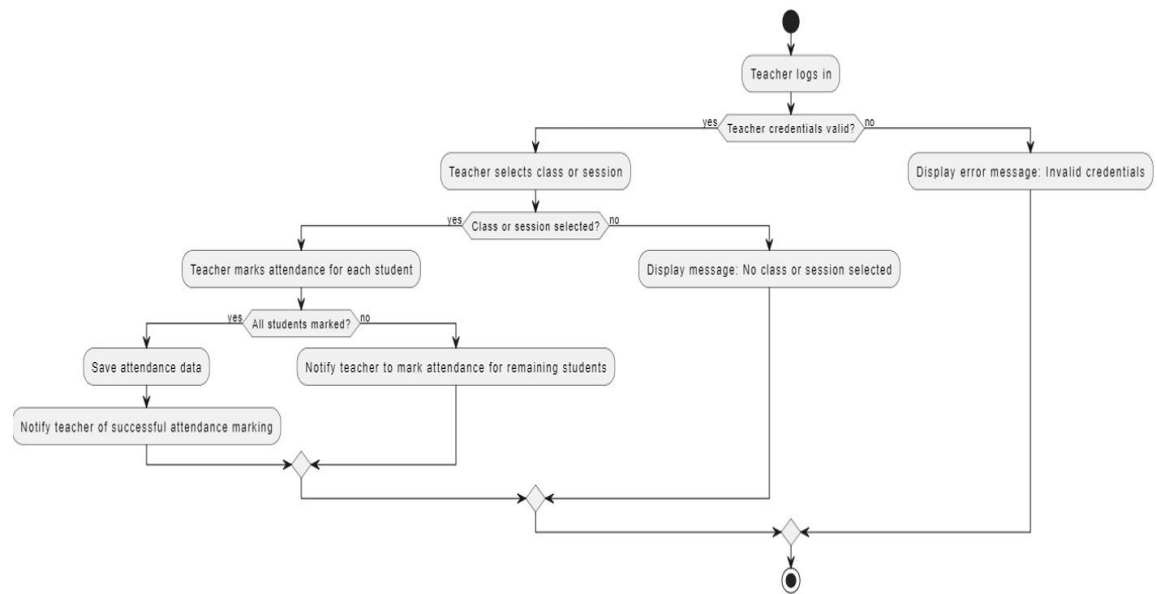


Fig: 5.4 Attendance Activity Diagram

5.5 Activity diagram for Students See Attendance

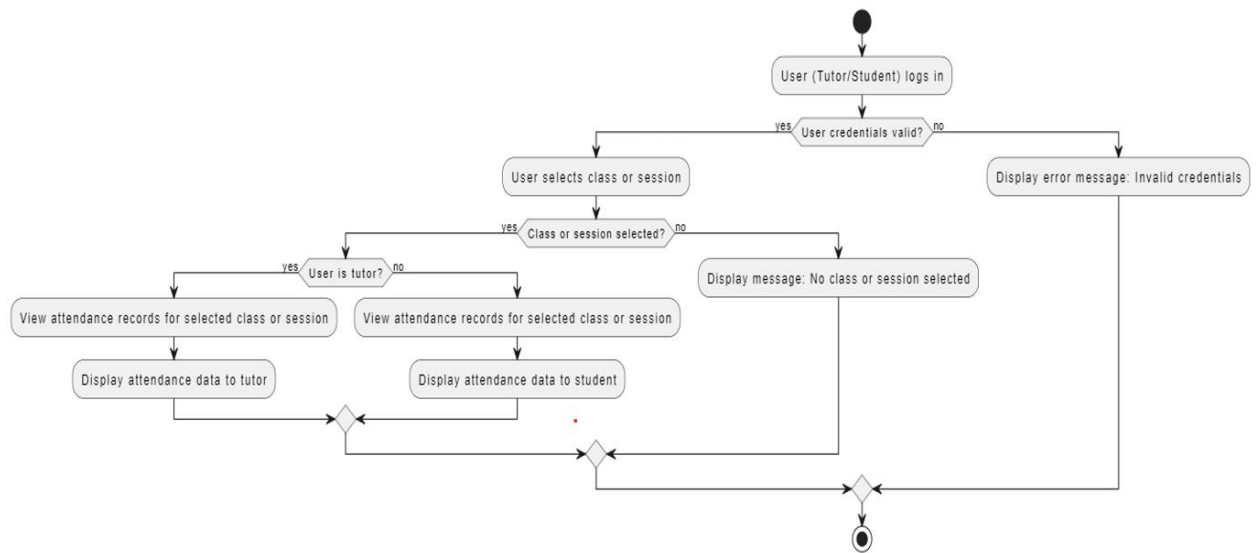


Fig: 5.5 Students See Attendance Activity Diagram

5.6 Activity diagram for Teacher Profile

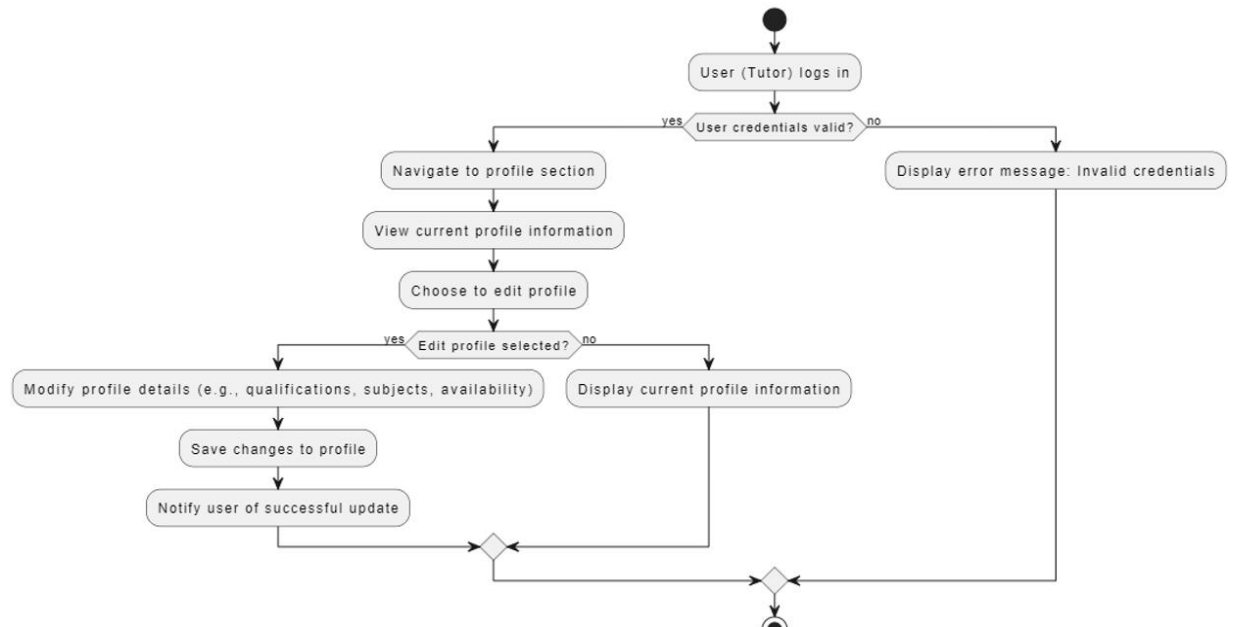


Fig: 5.6 Teacher Profile Activity Diagram

5.7 Activity diagram for Enroll (Booking) Teacher Tuition

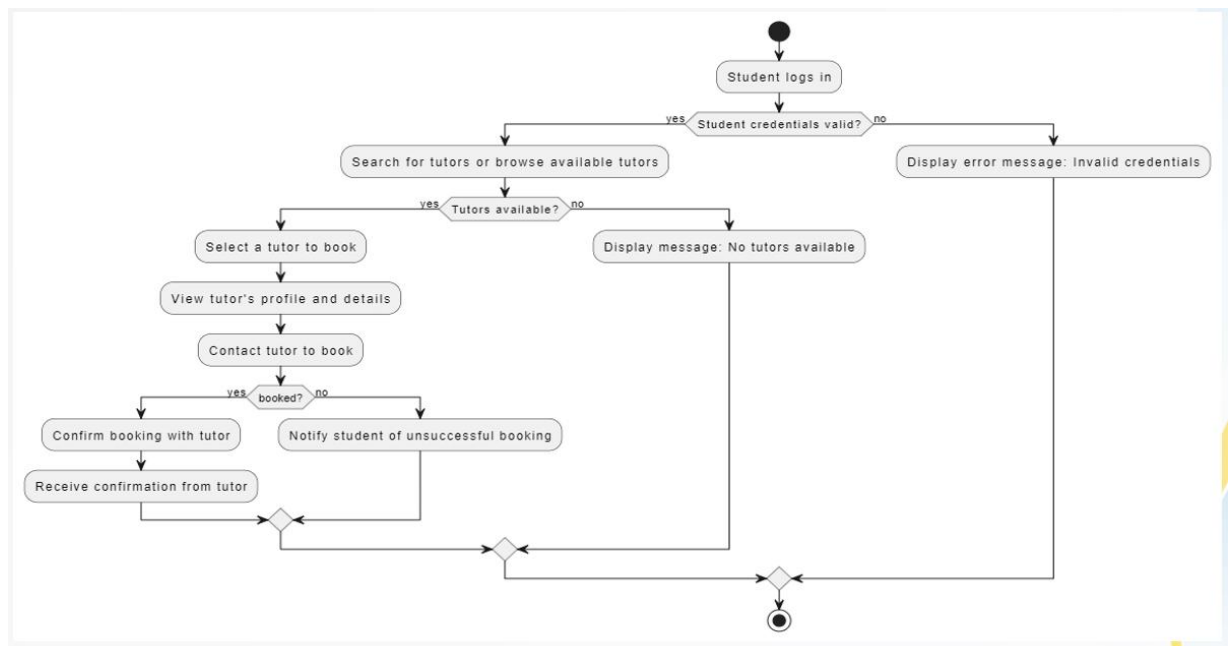
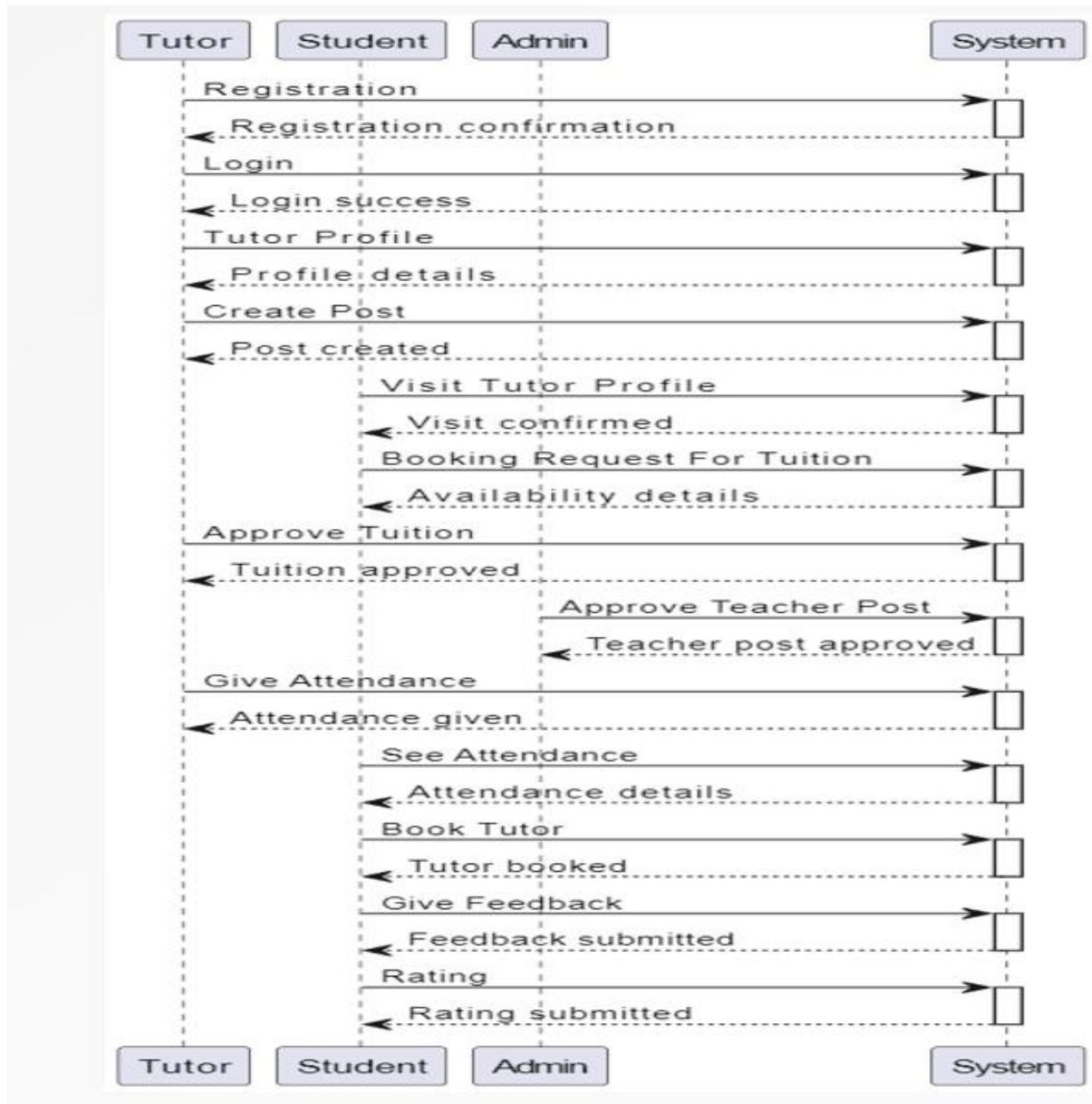


Fig: 5.7 Booking Tutor Activity Diagram

Chapter 6

Sequence Diagram



Chapter 7

ER Diagram

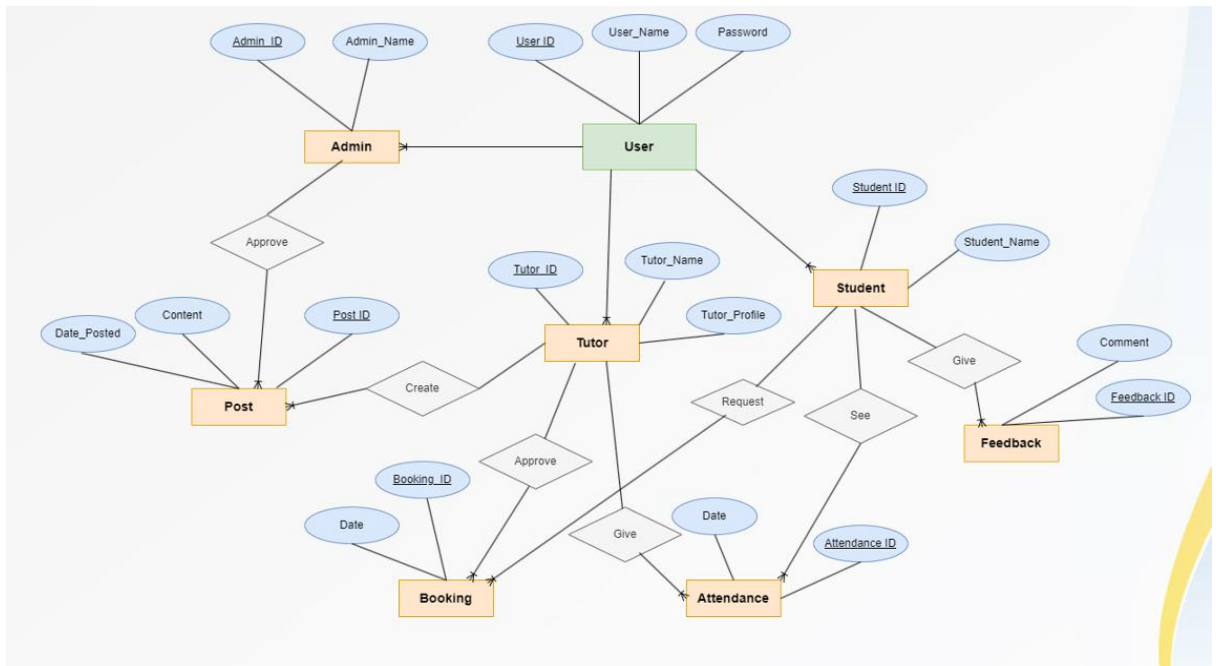
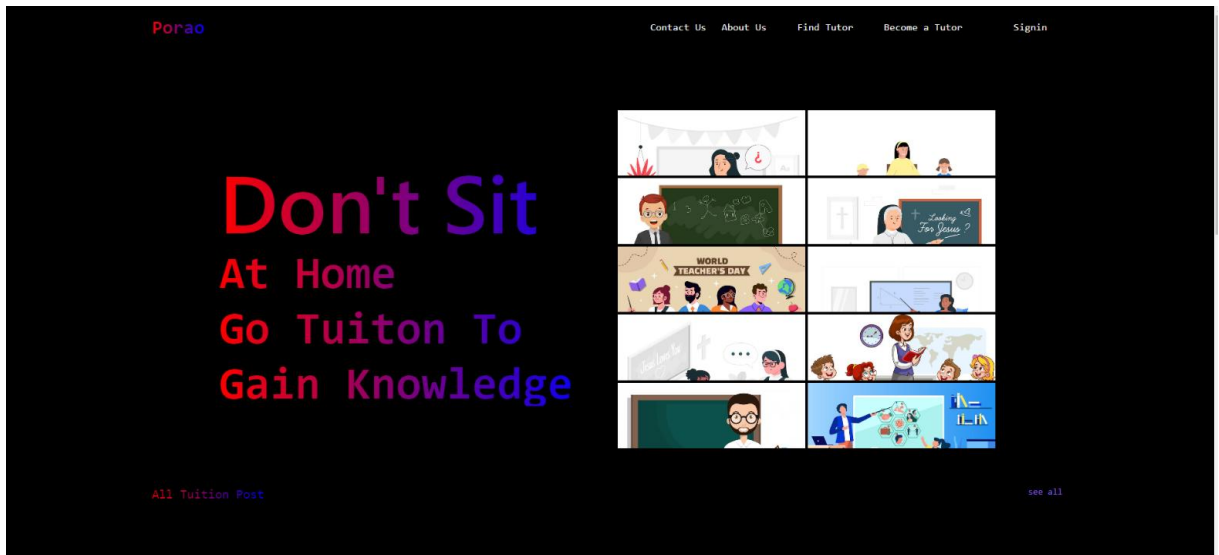


Fig: 8.0 ER Diagram

Chapter 8

User manual



Login or create account

First Name Last Name

Email

 Invalid Phone
+880

Password

Register

Already have an account? [Login](#)

Login or create account

Invalid Phone

+880

Password

Forget Password?

Sign In

Don't have an account? [Create](#)

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Password

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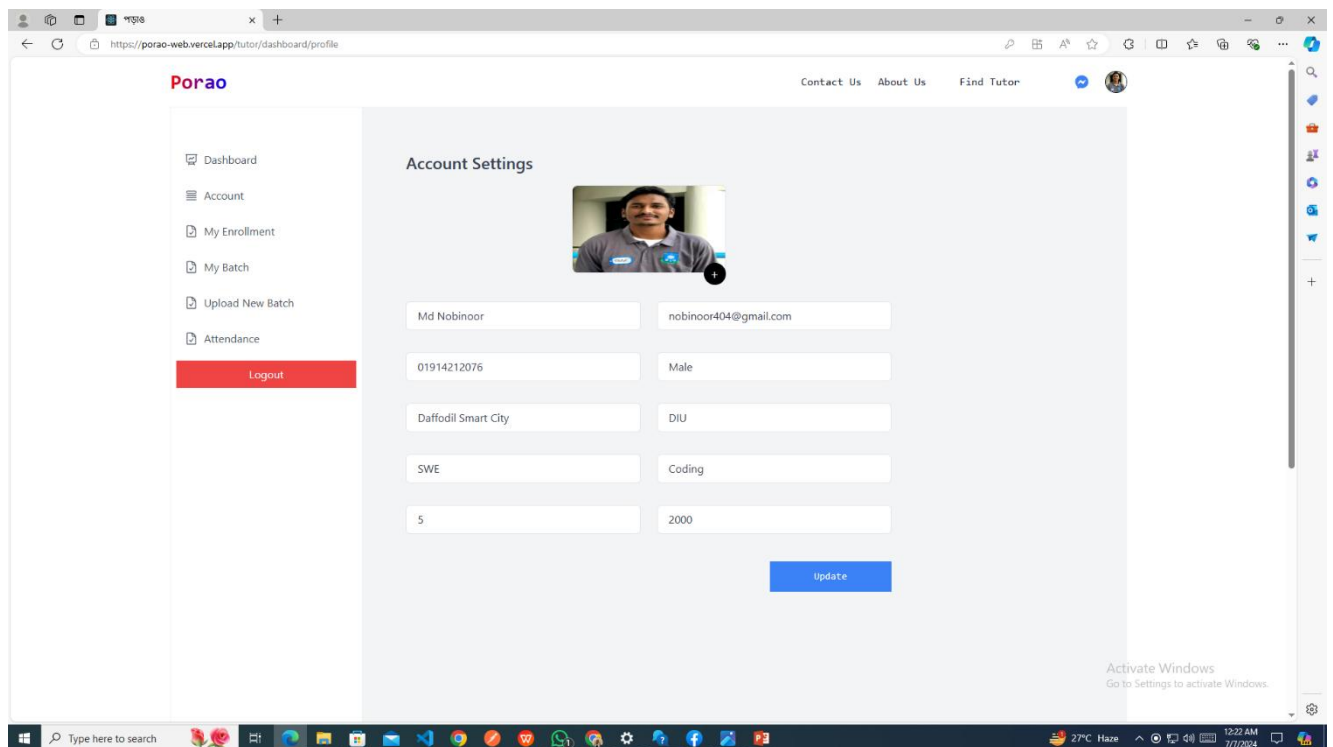
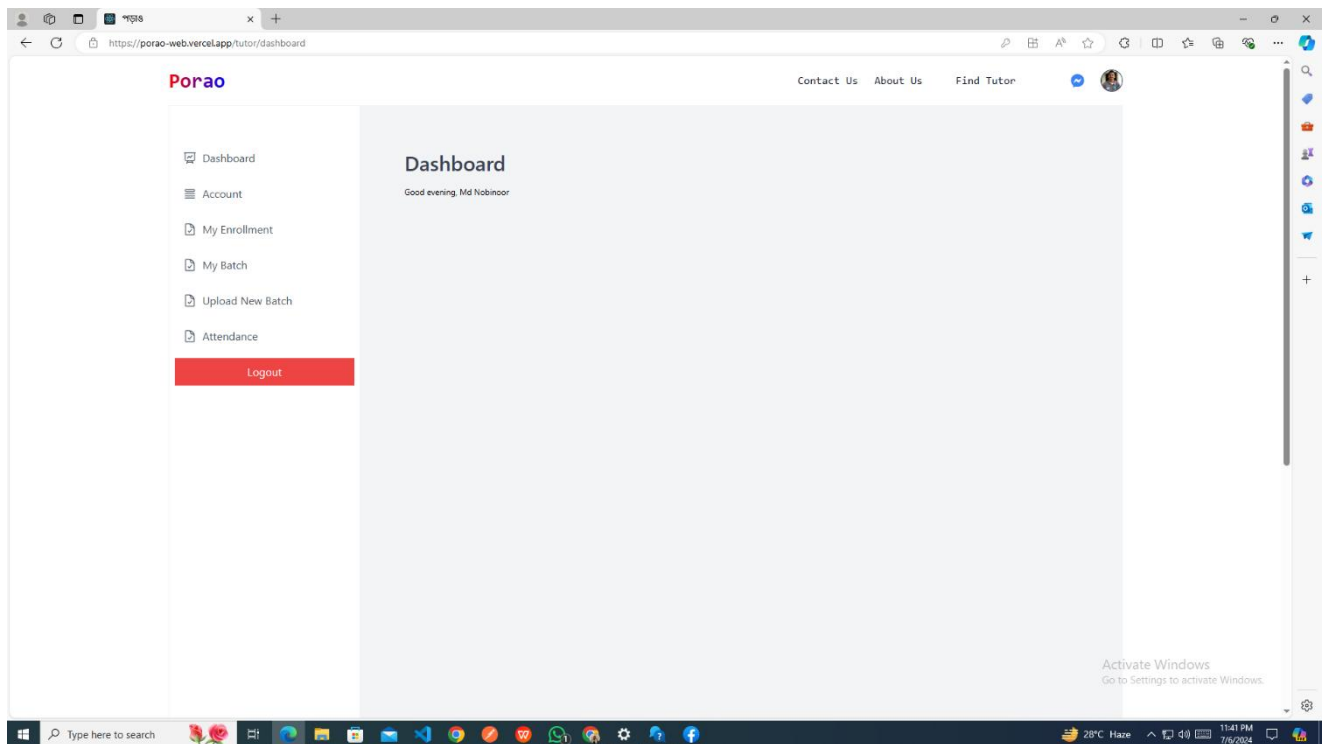
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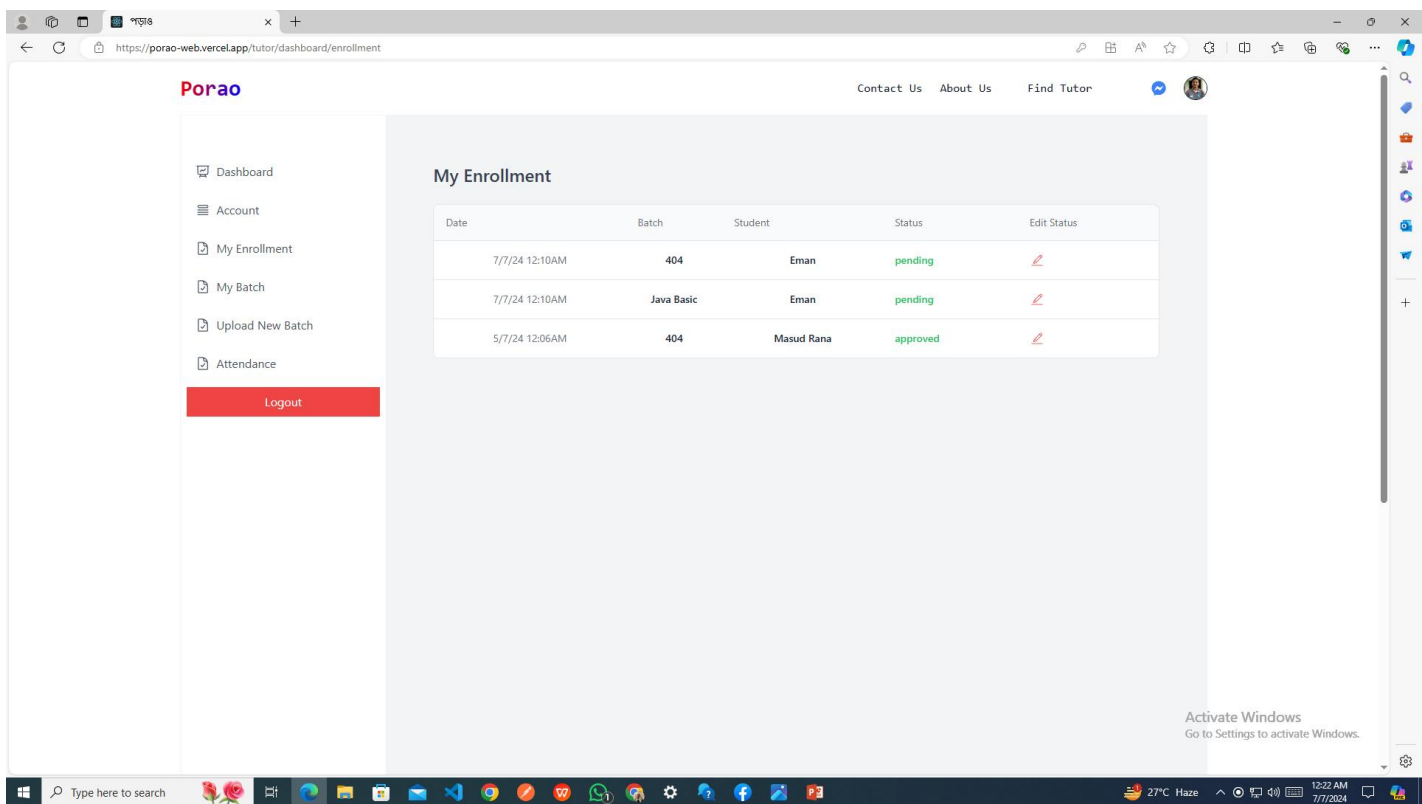
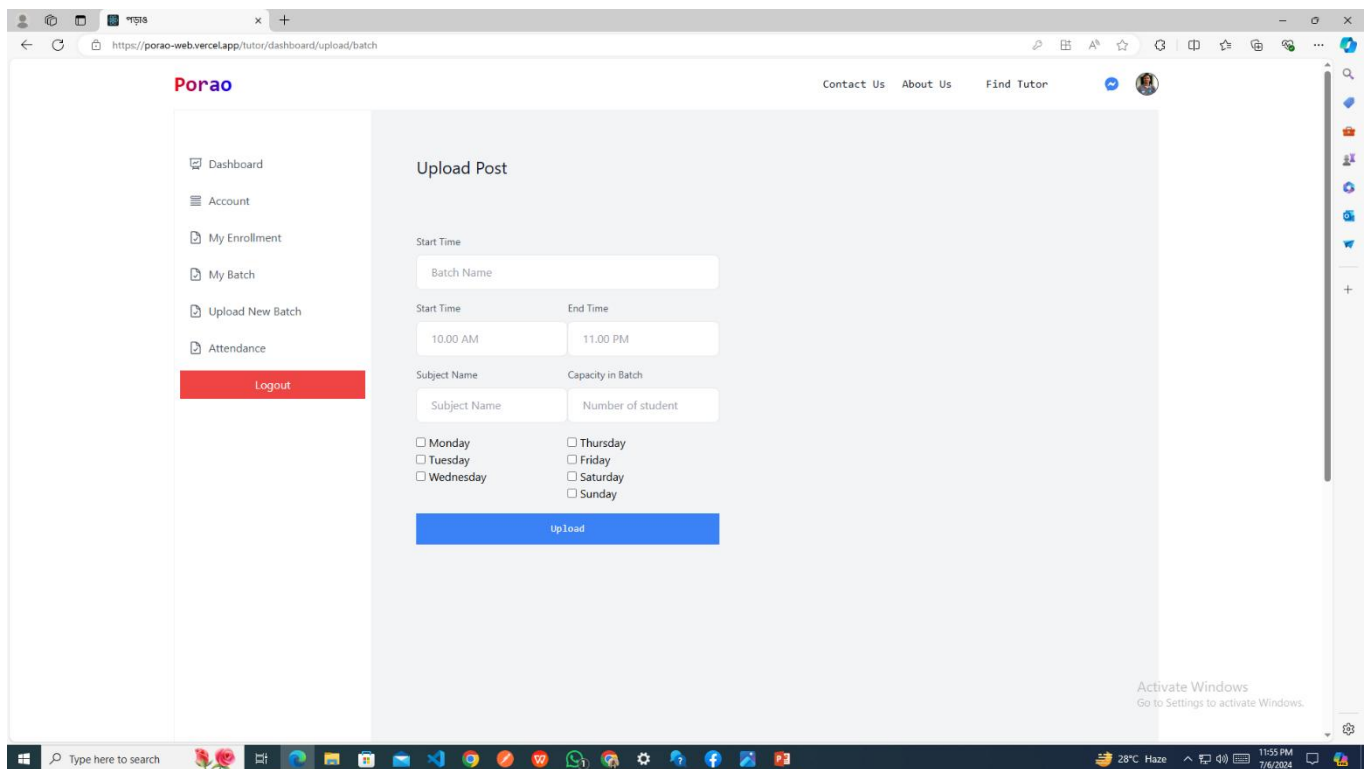
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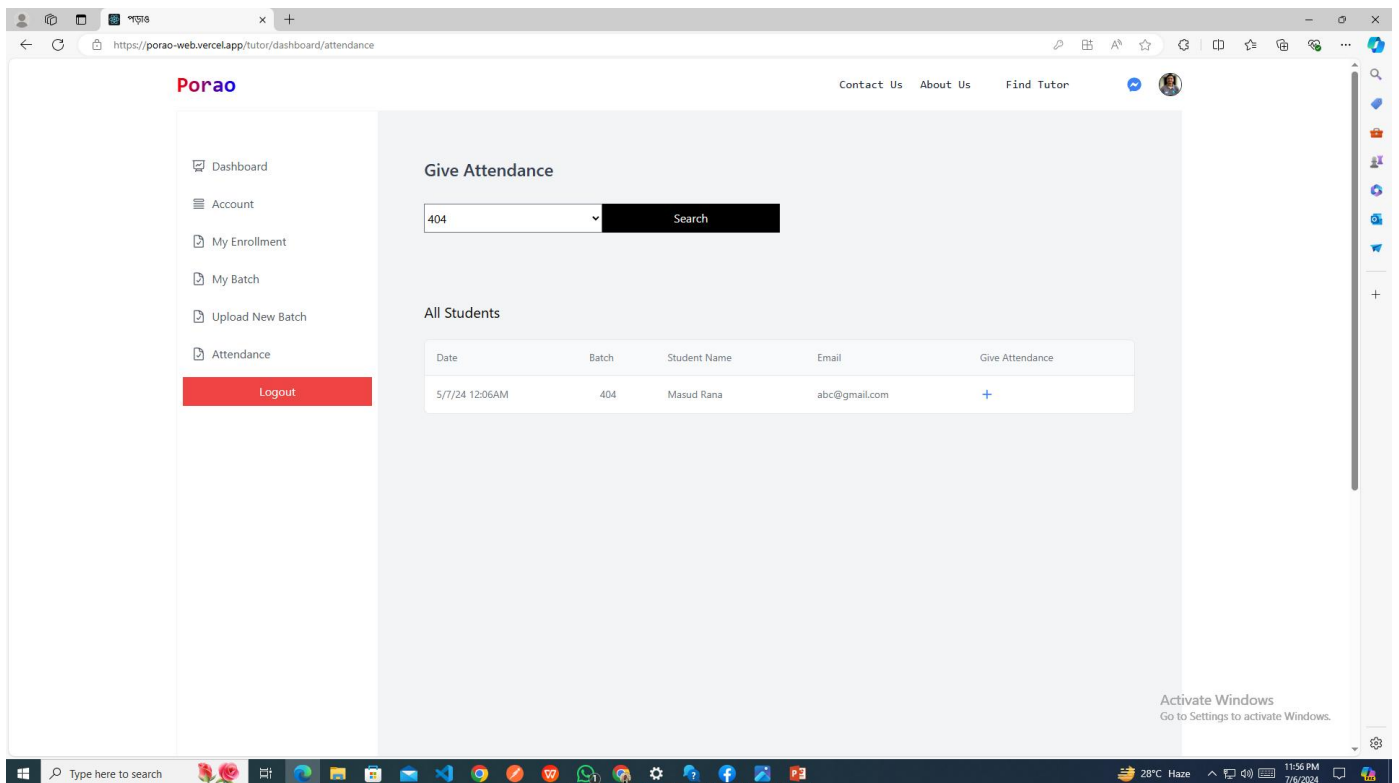
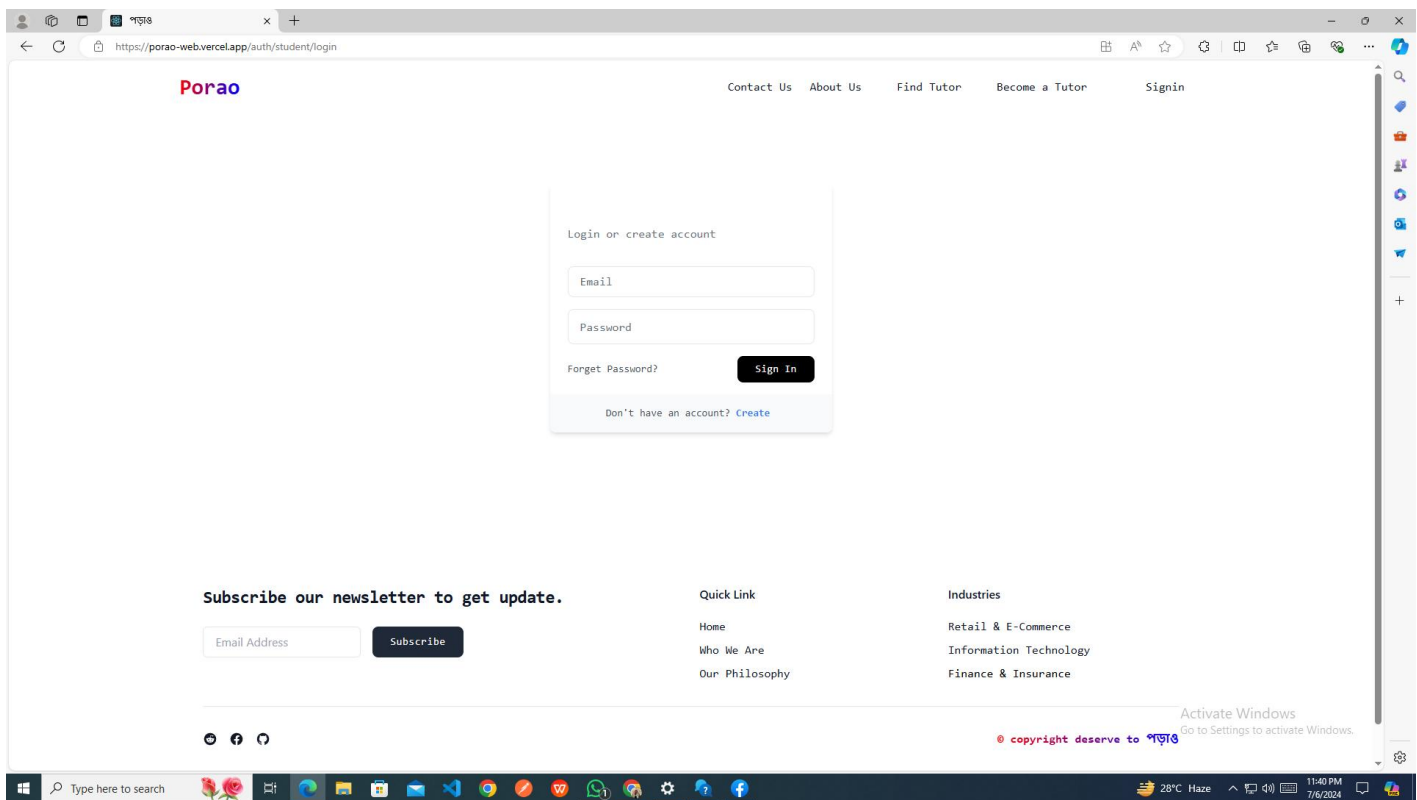
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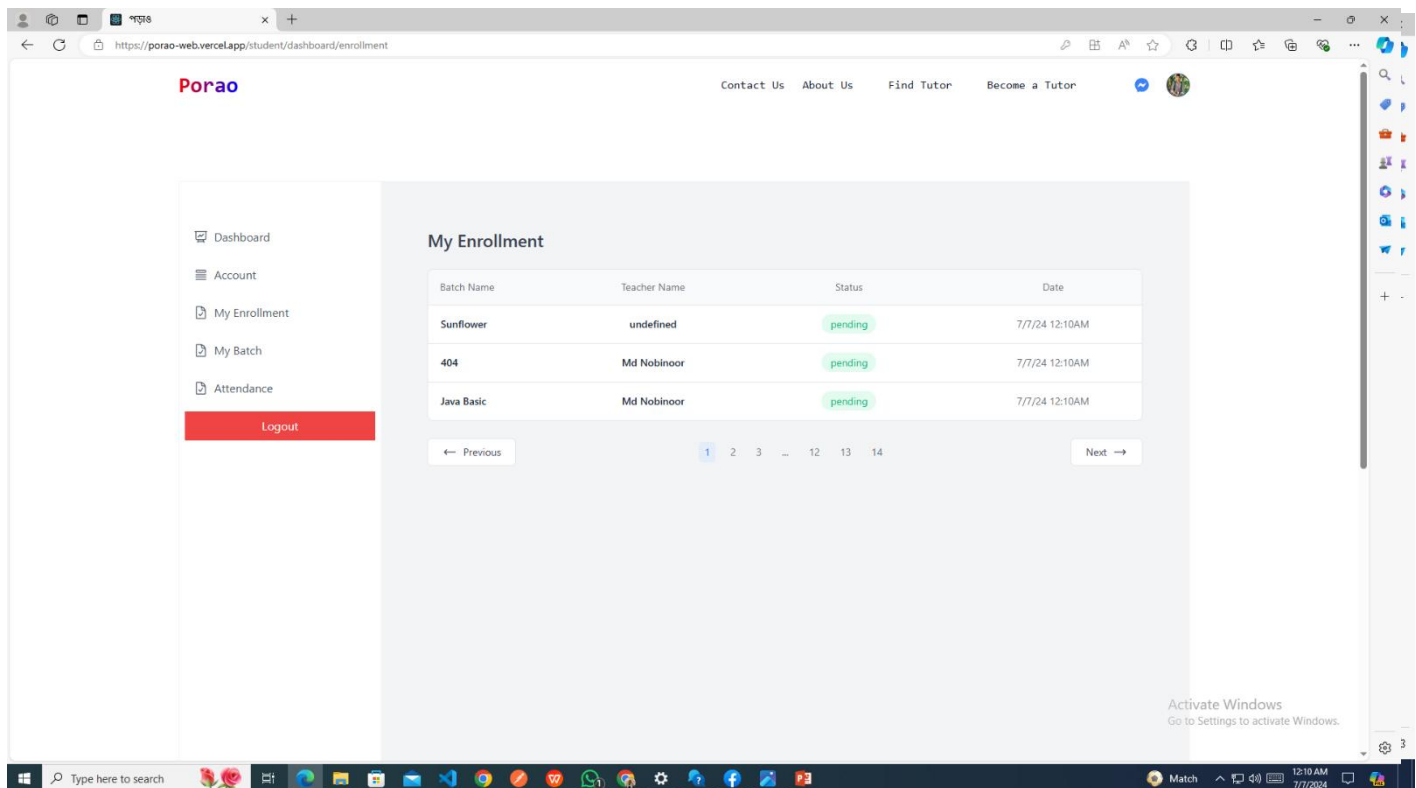
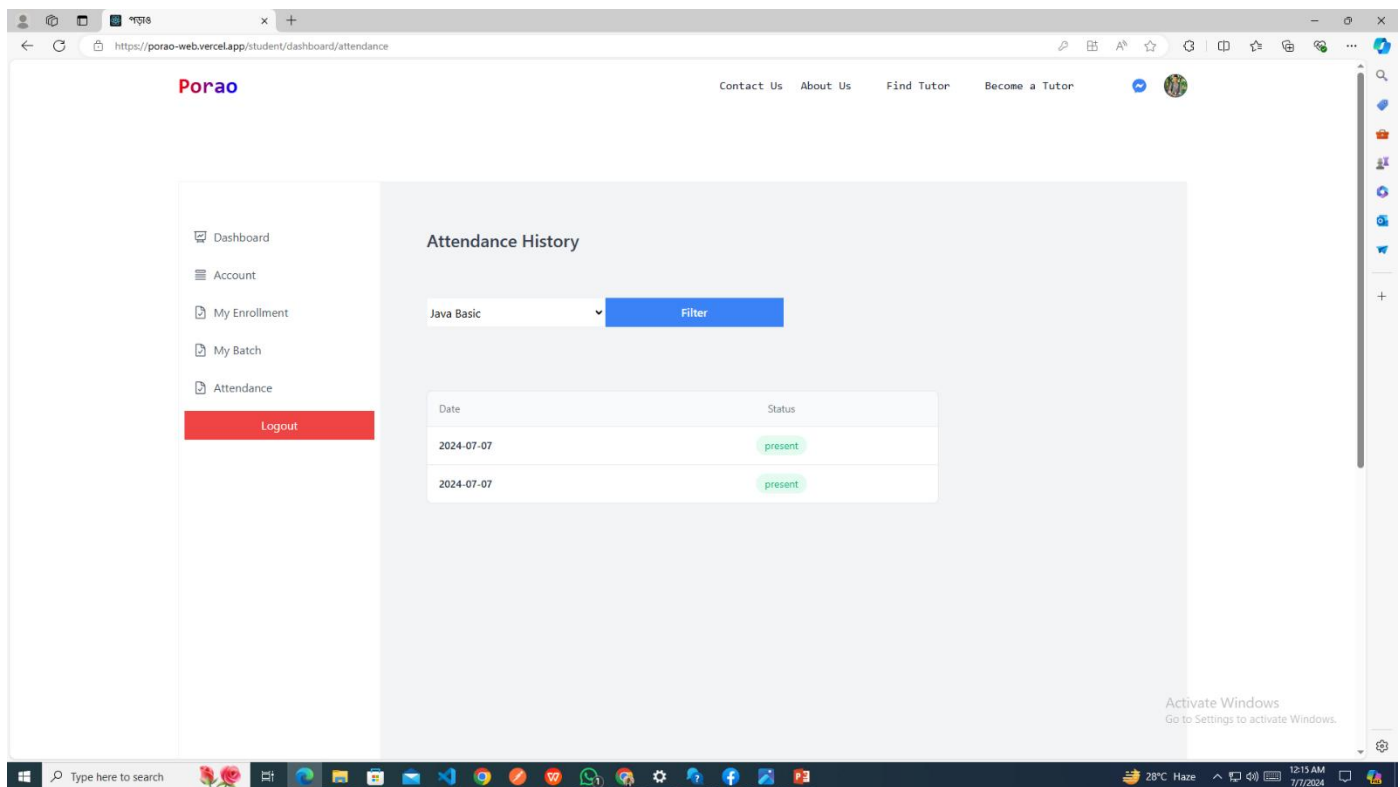
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Chapter 9

Project Summary

9.1 GitHub Link:

Backend: <https://github.com/NOBINOOR/porao-backend>

Frontend: <https://github.com/NOBINOOR/porao-frontend>

9.2 Limitation

Like everything in the world, my application is not perfect and has some limitations. However, I have tried my best to complete this project. The limitations are as follows:

- I. Running this project requires a well-configured computer.
- II. This project relies on a dataset, so the accuracy of expression prediction depends on the dataset, necessitating a large collection of datasets.

9.3 Obstacles & Achievements

All testing was conducted carefully, meeting the required user standards. While additional error tests could be suggested, the mentioned tests are sufficient. Testing is a crucial phase in system development and should be approached with great attention.

9.4 Future Scope

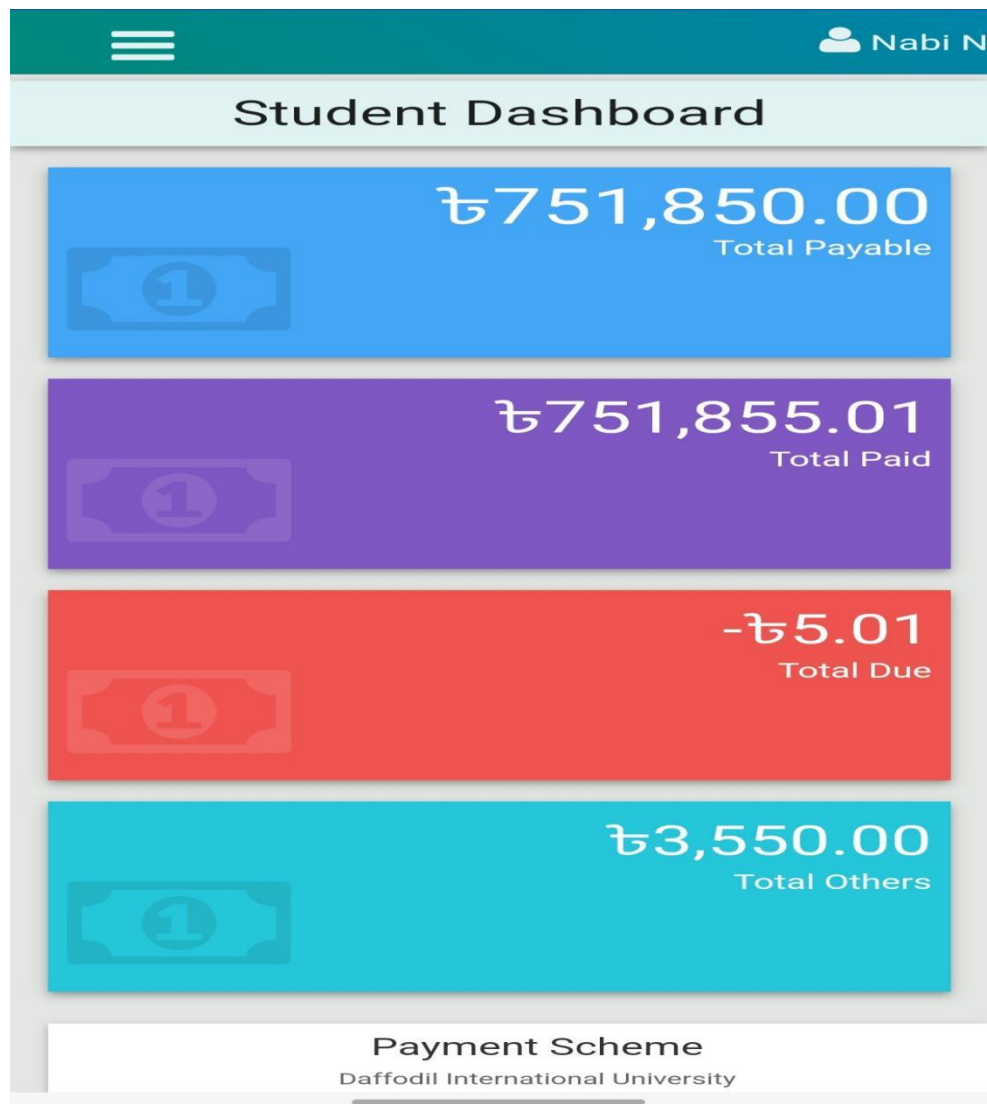
In the future, it can be included Government features.

- I. To develop Emoji conversion system with proper and accurate Expression.
- II. Tap on the Animoji (character with yellow frame) icon.
- III. Select your Emoji avatar and bring your face into view.
- IV. Press the red button to record a live video with your custom emoji

References:

1. System Development Life Cycle:
<https://searchsoftwarequality.techtarget.com/definition/systems-development-life-cycle>
2. Data set details: <https://www.kaggle.com/msambare/fer2013>
3. Diagram Art: <https://www.draw.io/>
4. Some idea from: <https://data-flair.training/>

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