SOFTWARE REQUIREMENTS SPECIFICATION

For

Digital ROTC Application System

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1. Introduction

The efficiency and integrity of registration and record-keeping are vital components in the management of ROTC programs. At present, the manual registration process at JHCSC is time-consuming, prone to errors, and lacks the flexibility needed to meet the demands of modern administrative practices. These limitations hinder the institution's ability to maintain accurate cadet records and streamline ROTC operations.

To address these challenges, the researchers propose the development of a Digital ROTC Management System—a technology-driven solution designed to automate and enhance the registration process. This system enables cadets to register online, securely store their personal and academic information, and allows administrators to manage registration records with greater accuracy and efficiency.

The system aims to eliminate manual errors, reduce administrative workload, and ensure that all data is up-to-date and readily accessible. It also supports the generation of real-time reports for program coordinators and institutional leaders, contributing to improved oversight and accountability. By introducing this digital solution, the researchers seek to modernize ROTC management practices at JHCSC, aligning with the institution's broader goals of adopting automated systems to improve operational effectiveness and service delivery.

1.1 Purpose

The purpose of this study is to design and develop a Digital ROTC Management System (DRMS) for JHCSC that will replace the traditional manual method of ROTC registration. This

system aims to automate the enrollment process through a secure online platform where cadets can submit personal and academic information. By eliminating manual errors and streamlining data handling, the system seeks to improve the accuracy, efficiency, and reliability of registration records. It also intends to generate real-time reports that administrators and school officials can easily access for monitoring and decision-making. Furthermore, the study promotes accountability and operational efficiency in ROTC management, saving time for both cadets and administrators. Ultimately, this project supports the institution's goals by introducing a technology-driven solution that enhances administrative processes and modernizes ROTC program operations.

1.2 Intended Audience

The intended audience of this study includes ROTC administrators and school officials at JHCSC who will benefit from a reliable tool to manage cadet registration and generate accurate enrollment reports. Cadets are also part of the audience, as they will interact directly with the system to submit their enrollment details and monitor their application status. Additionally, the institution's management can utilize the system to improve oversight, accountability, and strategic planning related to ROTC activities. Overall, the system is designed to serve all stakeholders involved in ROTC registration, ensuring that the process becomes more efficient, secure, and transparent.

1.3 Product Scope

The Digital ROTC Management System is designed to automate and enhance the ROTC registration process at JHCSC. The system will provide cadets with a secure online portal to complete enrollment forms upload required documents and verify their registration status. Administrators will be able to review submissions, approve or reject applications, and generate real-time reports for monitoring and evaluation. The system aims to reduce paperwork, prevent

data loss, and accelerate the registration workflow. In addition, it contributes to the institution's broader objective of adopting modern, technology-based solutions that support effective administrative practices and improve overall operational efficiency.

1.4. Definitions, Acronyms, and Abbreviations

In this study, the term Digital ROTC Management System (DRMS) refers to the web-based platform developed to manage ROTC registration processes. The acronym ROTC stands for Reserve Officer's Training Corps, a program designed to prepare students for service in the armed forces. A Cadet is defined as a student applying for ROTC enrollment. The term Admin refers to the system administrator responsible for managing enrollment data and overseeing system operations. These definitions and acronyms are provided to ensure clarity and consistency throughout the study.

2. Overall Description

The Digital ROTC Management System (DRMS) is designed to provide a secure, efficient, and user-friendly platform for managing ROTC registration at JHCSC. It primarily serves cadets who will submit their enrollment applications online, and administrators who will oversee, verify, and approve these submissions. The system aims to eliminate manual paperwork, reduce errors, and streamline the registration process through digital automation.

Cadets are expected to have basic knowledge of using computers or mobile devices to navigate the system and complete their registration. Administrators, on the other hand, should possess moderate technical proficiency to manage enrollment records, monitor application status, and

generate reports. This structure ensures that the system remains accessible to all users, regardless of their level of technical expertise.

While the system offers numerous benefits, it is subject to certain limitations and dependencies. Its functionality depends on stable internet connectivity and the availability of compatible devices such as smartphones, laptops, or desktop computers. Compliance with data privacy and security regulations is essential to protect sensitive student information. Additionally, the system is designed for use within the institution's infrastructure and may require further support for off-campus access. External factors such as server downtime, hardware issues, or incomplete user data may affect system performance and reliability. The success of the system also relies on institutional support, user cooperation, and regular maintenance to ensure long-term sustainability.

2.1 User Characteristics

Cadets – Students with basic computer or mobile device literacy who will use the system to submit enrollment applications, upload documents, and monitor their registration status.

Administrators – Staff members with moderate technical knowledge who will manage, verify, and approve enrollment applications, as well as generate reports and oversee system operations.

2.2 Constraints

The system must be accessible via both computers and mobile devices. An active internet connection is required for all system functions. The system must comply with institutional data privacy and security policies. Only authorized administrators are permitted to approve or reject enrollment applications.

2.3 Assumptions and Dependencies

Cadets have access to internet-enabled devices such as smartphones, laptops, or PCs. The institution will provide adequate server hosting and database support. Cadets will submit accurate and complete information during registration. A reliable backup mechanism will be in place to secure enrollment data and prevent loss. These assumptions highlight the importance of institutional infrastructure and user cooperation in achieving the system's intended outcomes.

3. Requirements Specification

3.1 Functional Requirements

The functional requirements describe what the system should be able to do. For this study, the system must allow cadets to register through an online platform, submit personal and academic information, and securely store these records in a centralized database. It should also provide administrators with the ability to verify, approve, or reject enrollment applications, manage cadet records, and generate real-time enrollment reports. The system must support secure user authentication for both cadets and administrators to ensure protected access to sensitive data. Additionally, it should facilitate communication between users through notifications and maintain accurate logs of registration activity for institutional monitoring and decision-making.

3.2 Non-Functional Requirements

The non-functional requirements describe how the system should perform. For this study, the Digital ROTC Management System must be designed to be user-friendly, allowing cadets and administrators to navigate and operate the platform with minimal technical expertise. The system should be reliable in processing and storing enrollment data accurately, ensuring that no information is lost or duplicated during submission or verification. It must also be secure in handling sensitive personal and academic information, with proper authentication and access control mechanisms in place.

In addition, the system should be resilient against common disruptions such as unstable internet connections or server downtime, ensuring consistent performance and data integrity. It must be scalable to accommodate a growing number of cadet users and administrative tasks, and maintainable so that updates, improvements, and bug fixes can be implemented efficiently over time. These qualities are essential to support the long-term sustainability and institutional adoption of the system.

3.3 External Interface Requirements

User Interfaces

• Admin Interface

Web-based dashboard accessible via modern browsers (Chrome, Edge, Firefox).

Features include: cadet registration review, application approval/rejection, record management, and report generation.

Graphical interface with organized menus, search filters, and status indicators.

Secure login for authorized ROTC administrators and coordinators.

• Cadet Interface

Online registration form for submitting personal and academic details.

Option to upload supporting documents and track application status.

Simple, intuitive interface for mobile and desktop access.

• Notification Interface

Cadets receive updates via email, SMS, or the JHCSC student portal regarding registration status and ROTC announcements.

Administrators can send reminders, notices, and system alerts.

Hardware Interfaces

• Client Devices

Cadets and admins access the system via smartphones, laptops, or desktop computers.

Devices must support modern browsers and basic internet connectivity.

• Server/Computer

Centralized server hosting the web application and database.

Recommended specs: Intel i5 or higher, 8GB RAM, 1TB storage.

Compatible with Windows or Linux-based environments.

• Networking Devices

LAN/Wi-Fi infrastructure for connecting client devices to the server.

Stable internet connection required for real-time data synchronization.

Software Interfaces

• Operating System

Compatible with Windows Server or Linux distributions (e.g., Ubuntu).

• Database

MySQL / MariaDB / PostgreSQL for secure storage of cadet records and registration logs.

• Web Technologies

HTML, CSS, JavaScript, PHP/Node.js for building the web application.

• Document Upload API

Integration with file handling modules to support document submission and validation.

• Email/SMS API

Gmail API or SMS gateway for sending registration updates and notifications.

Communication Interfaces

• Web Browser Access

Cadets and admins access the system via Chrome, Edge, or Firefox.

• Client-Server Communication

Secure data transfer using HTTPS (TLS/SSL encryption).

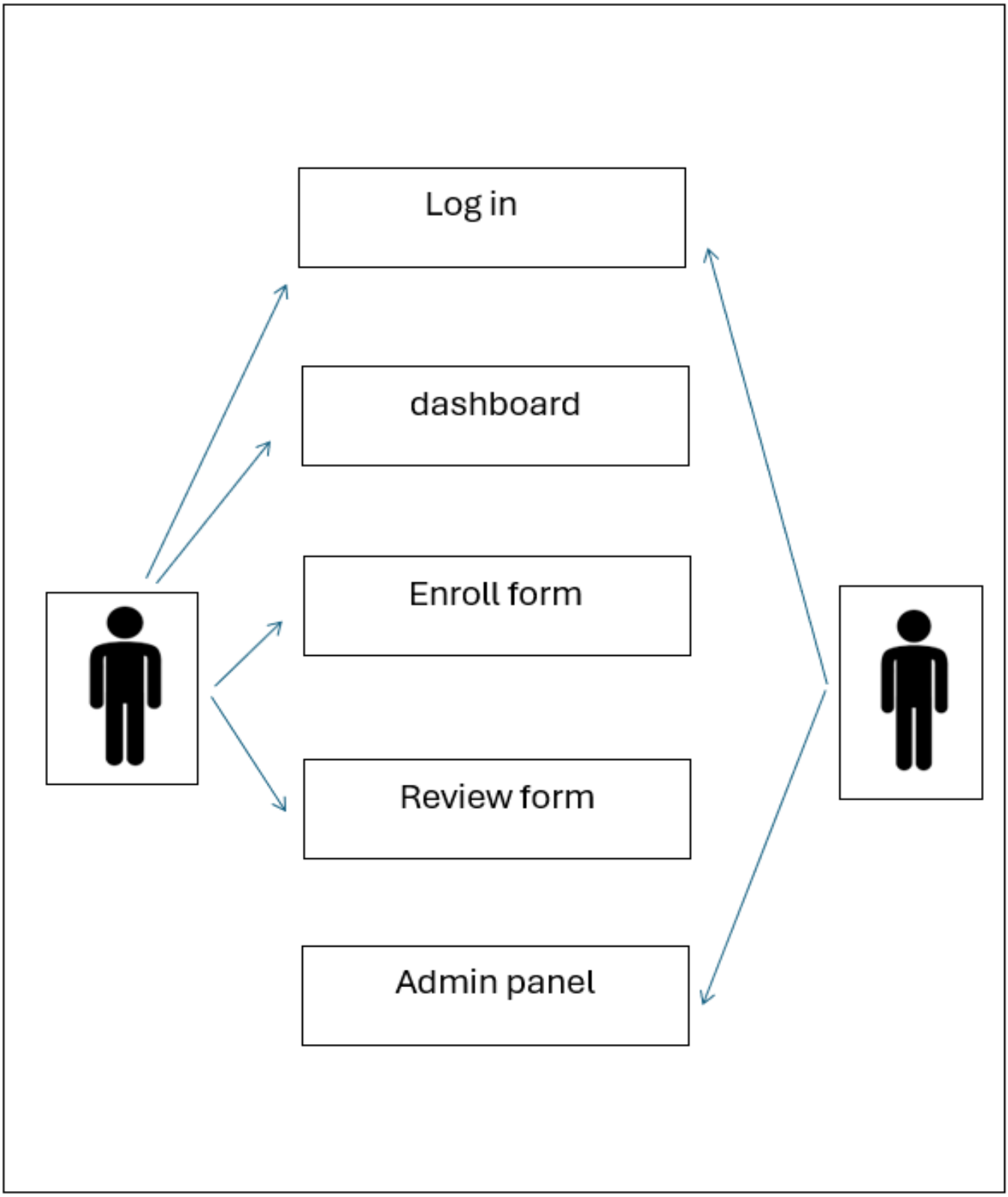
• Local Network / Internet

Real-time syncing of registration data between client devices and the server.

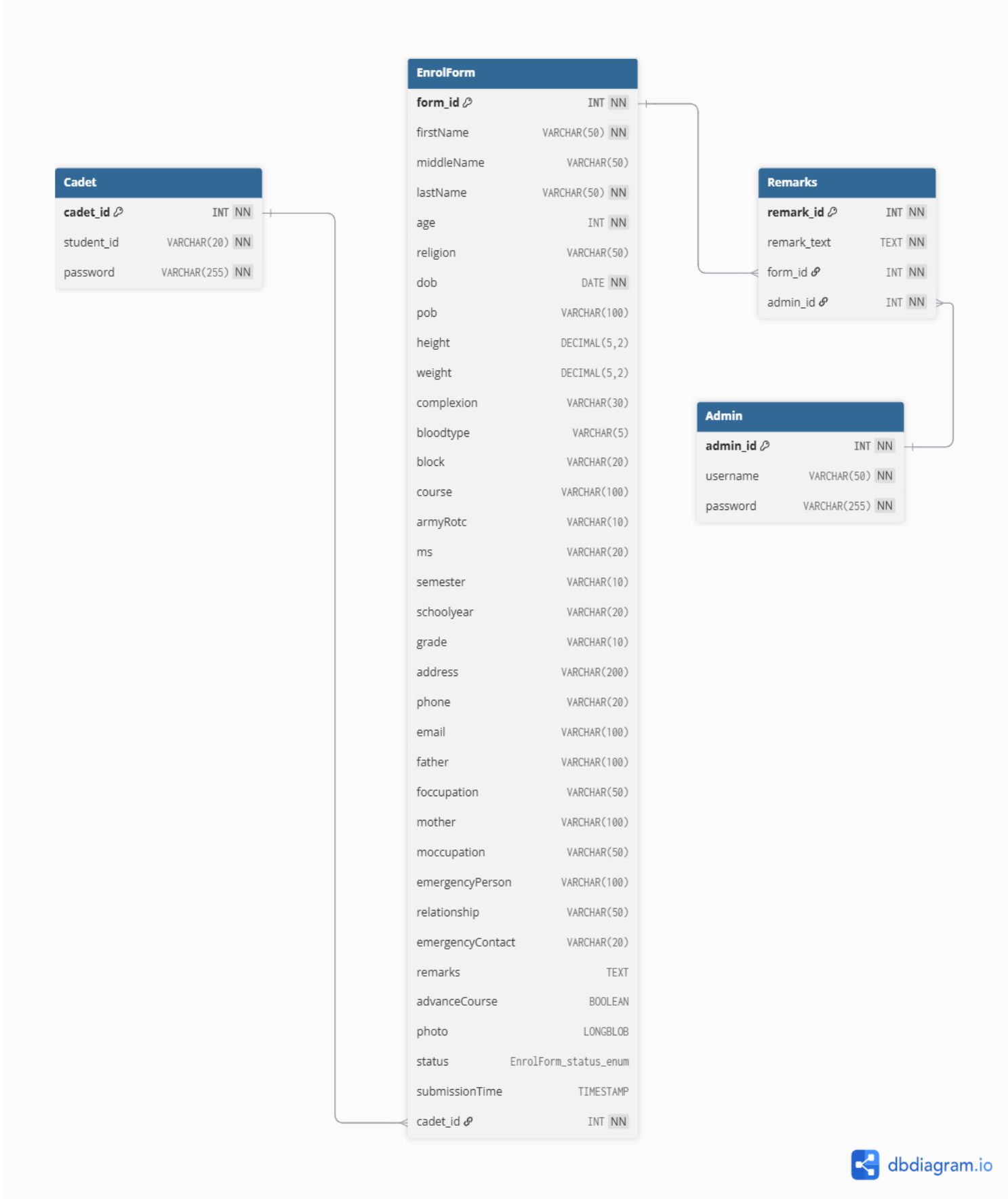
• Notification System

SMTP protocol for email alerts and SMS gateway for mobile notifications.

3.4 SYSTEM MODEL



3.5 Database Design



Entities:

Cadet (cadet_id, Student_id, password).

Admin (admin_id, username, password).

EnrolForm (form_id, firstname, middleName, lastName, age, religion, dob, pob, height, weight, complexion, bloodtype, block, course, armyRotc, ms, semester, schoolyear, grade, address, phone, email, father, foccupation, mother, moccupation, emergencyPerson, relationship, emergencyContact, remarks, advanceCourse, photo, status ENUM, submissionTime).

Remarks (remark_id, remark_text).

Relationship:

- A **Cadet** can submit many **EnrolForms**.

  Each **EnrolForm** must belong to one **Cadet**.

- An **EnrolForm** can have many **Remarks**.

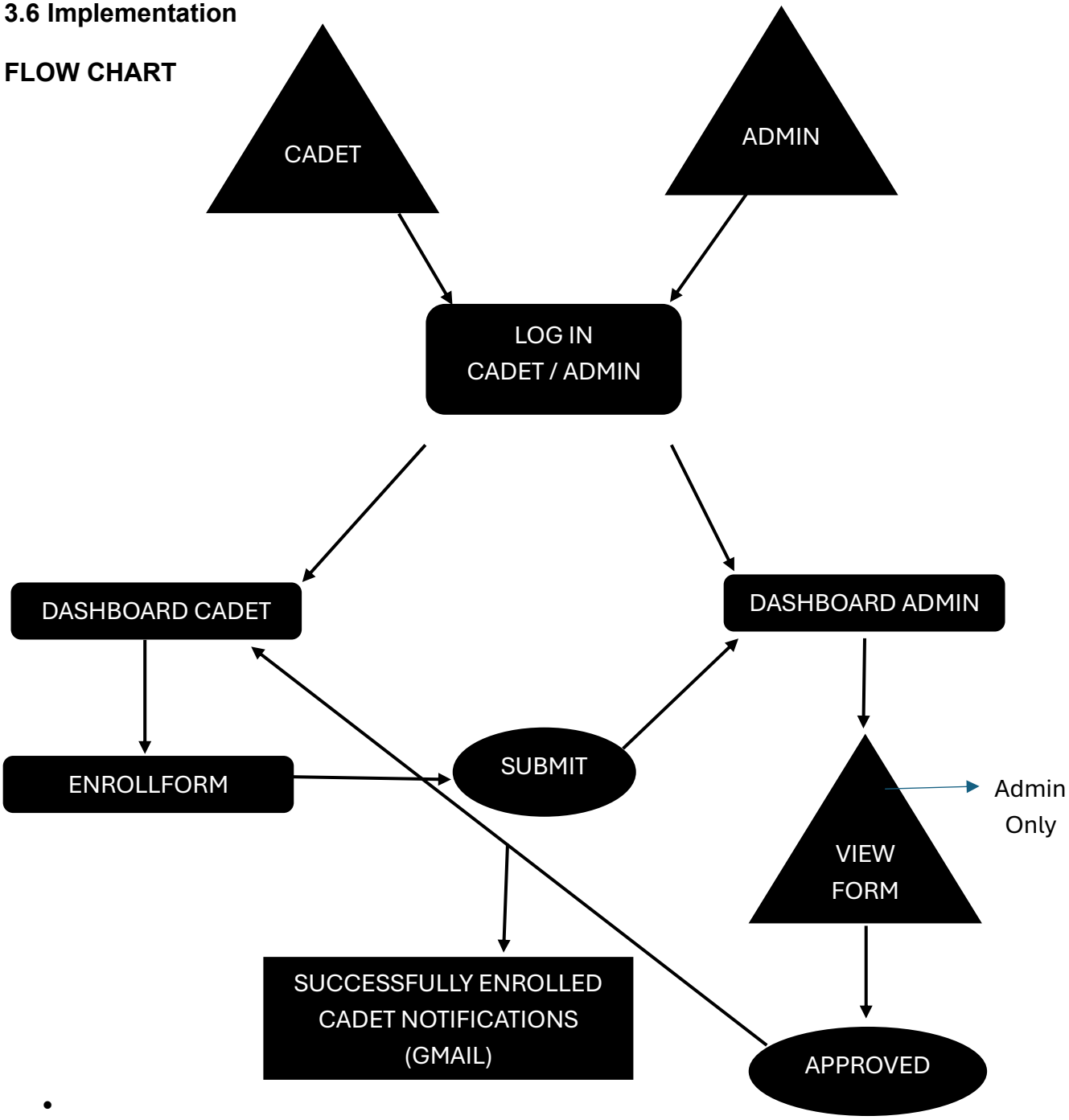
  Each **Remark** must belong to one **EnrolForm**.

- An **Admin** can write many **Remarks**.

  Each **Remark** must be created by one **Admin**.

3.6 Implementation

FLOW CHART



3.7 Testing and Deployment

3.7.1 Testing

Purpose: Ensure the Digital ROTC Application System works correctly, meets requirements, and is free of critical bugs.

Types of Testing:

1. Unit Testing – Test individual modules (e.g., login, registration).
2. Integration Testing – Check if modules work together correctly.
3. System Testing – Verify overall system functionality.
4. User Acceptance Testing (UAT) – Let ROTC users test real scenarios.
5. Performance Testing – Check responsiveness and stability under multiple users.
6. Security Testing – Ensure data and system are secure.

3.7.2 Deployment

Purpose: Make the system available for actual use.

1. Preparation – Set up the server and production environment.
2. Installation – Deploy the system on the server.
3. Configuration – Set database connections, email notifications, and user roles.
4. Data Migration – Move any existing data into the system.
5. Go-Live – Launch the system for students and instructors.
6. Maintenance – Regular backups, bug fixes, and updates.

4. Other Requirements

4.1 User Manual

4.1.1 Introduction

The Digital ROTC Application System is an online platform designed to streamline the submission, management, and approval of ROTC applications. This system allows students to apply for ROTC enrollment, upload required documents, and check application status. Administrators can manage

applications, approve or reject submissions, and generate reports.

Purpose of this Manual:

- Guide students and administrators in using the system effectively.
- Provide troubleshooting steps for common issues.

Target Users:

- Cadet / Applicants
- School Administrators

4.1.2 System Requirements

Hardware:

- Windows PC, laptop, tablet, or smartphone
- Minimum 2 GB RAM

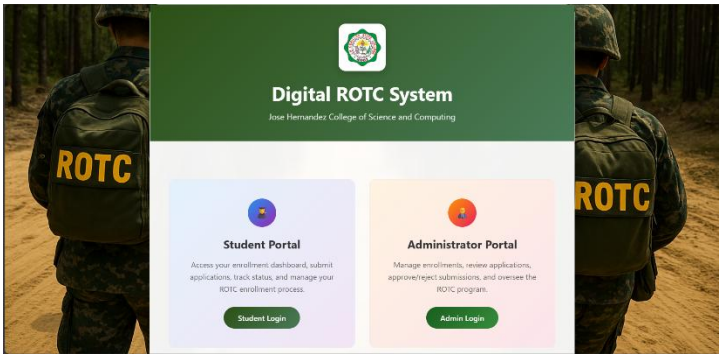
Software:

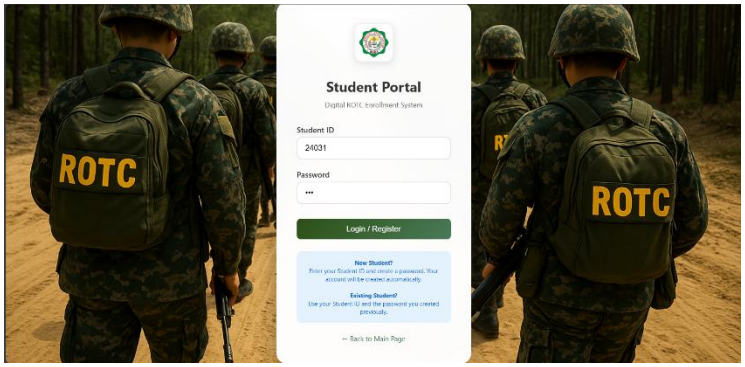
- Web browser (Google Chrome, Microsoft Edge)
- Internet connection

4.1.3 Login and Registration

Student Login / Registration:

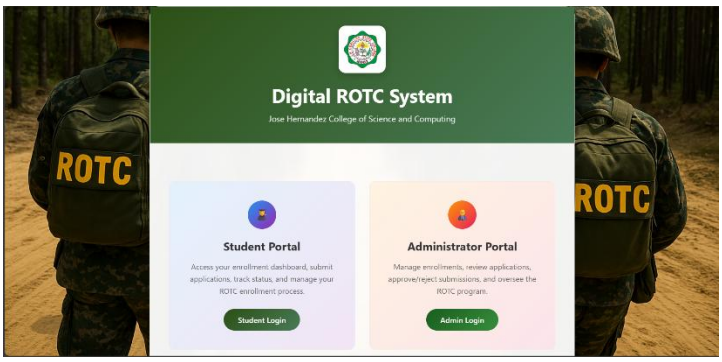
1. Open the system URL in your browser.
2. Click **"STUDENT LOGIN"** if you are a student.
3. School ID, Portal password
4. Click "**LOGIN**" To proceed to dashboard.

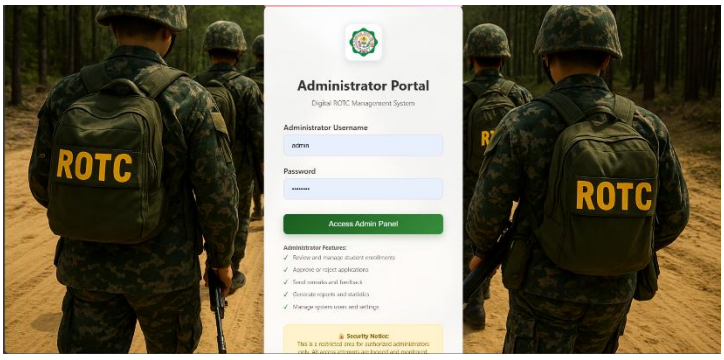




Administrator Login:

1. Open the system URL in your browser.
2. Click "**Admin Login**".
3. Enter admin username and password.
4. Click "Login" to access the dashboard.





4.1.4 Using the System

Cadet Features:

1 Submit Application:

- Navigate to "START ENROLLMENT".
- Fill out the required forms.
- Upload supporting documents (e.g., 2x2 Picture).
- Click "Submit Application".

2 Check Application Status:

- Back to **“DASHBOARD”**.