



Daffodil
International
University

ITM Website

Departmental online Platform

This project report has been submitted in fulfillment of the requirements for the Degree of Bachelor of Information Technology & Management (ITM)

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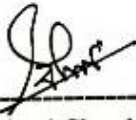
This thesis titled on "ITM Website", submitted by "Roman Oze, 211-51-043", to the Department of Information Technology & Management, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Science in Information Technology & Management, and approval as to its style and contents.

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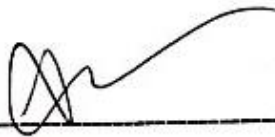
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DECLARATION

The project Title : "ITM Departmental Website" is done under the supervision of **Ms. Nusrat Jahan**, Assistant Professor and Head Department of Information Technology & Management (ITM) , of Daffodil International University. I declare that this project is my original work for the degree of B.Sc. in Information Technology Management and that neither the whole work nor any part has been submitted for another degree at any other university.

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Chapter 1: Introduction

1.1 Background

The ITM Website was created to address the challenges faced by the ITM department at Daffodil International University. While the university has a central website, Restricted dashboard functionality, lacks real-time updates, and misses key features and resources needed to support the department's unique activities. These limitations made it difficult to manage important functions such as faculty and student records, course schedules, alumni tracking, scholarship and routine updates and club information efficiently.

This project arose from the need for a modern, centralized system that could clarify these processes. Traditional methods—like conditional on manual work or scattered tools—often led to delays, errors, and poor accessibility. The ITM Website is designed to solve these problems by providing a user-friendly, secure, and automated platform for everyone involved.

The website is fully dynamic and brings together a range of features, including user role management system, faculty and student management, scholarship tracking, and tools for better communication. Where keeping students details, helping faculty manage schedules, or supporting administrators in tracking departmental progress, the ITM Website makes it easier for everyone to stay connected and productive.

By offering real-time updates and streamlined functionality, the ITM Website creates a better experience for students, faculty, and administrators. It reflects the department's commitment to using technology to stay organized, efficient, and focused on the goals.

1.1.1 Problem Statement

1. Restricted dashboard functionality.
2. Absence of key departmental features.
3. Absence of a centralized platform for scholarships and alumni relations.
4. Lack of club information and update
5. Lack of real-time updates.
6. Lack of Automation and Dynamic Features
7. Limited communication channels.
8. Dependence on manual work.
9. Difficulty in managing event schedules and routines.
10. Poor accessibility and user experience.
11. Inability to scale for future needs.

1.2 Motivation

The ITM Website project aims to address the operational challenges faced by the department due to the absence of an integrated, efficient, and user-friendly platform. Currently, much of the department's administrative and academic tasks are managed separately, with so many features not integrated within the university central website. This lack of cohesion prevents communication and complicates day-to-day operations for both students and faculty members.

In the future, our junior batch brothers and sisters will continue to update and improve and also add unique features to the ITM website, Ensuring its evolution and adaptability. The responsibility of maintaining and fairing the website will be passed on to future students in our department,

This website aims to bridge the gap by offering centralized, efficient management of departmental resources and other activities, providing secure access, and improving communication, with the flexibility to grow as the department expands with new systems. It will provide batch-wise email notifications, academic guidance and any kind of matter, also centralized access to course materials, notices, and club information.

1.3 Objectives

The ITM website was planned for the sole purpose of having a centralized, efficient, and very user-friendly platform for organizing departmental functions and resources. Specific objectives include:

- **Unified Resource Access:** Make sure that all the information relevant to departments, including academic resources, schedules, announcements, etc. are easily accessible online to the students, faculty and administrative staff.
- **Showcase Departmental Excellence:** Highlight departmental achievements, faculty expertise, and students' success to attract prospective students and strengthen the department's reputation.
- **Support Academic & Career development:** Resources and methodologies to support academic students, coupled with career development strategies and guidance on how to support students with scholarly and vocational goals.
- **Role-Based Users :** Implement a secured, role-based access control system featuring super-admins, admins, faculty, and students with function personalization and efficiency for each role.
- **Efficient Data Management:** Seamless and accurate management of student, faculty, alumni, and course data to improve operational efficiency and accuracy in the records.
- **Task Automation:** Automate routine administrative tasks, such as generating schedules, managing courses, and sending emails, to minimize manual effort and improve productivity.
- **Enhanced Communication Tools :** Ensure more effective communication through features like a digital notice board, an email system organized in batches, the possibility of manual email sending, and interactive tools between faculty and students.

- **Scalable and Maintainable Design:** Develop a system that is scalable, adaptable, and maintainable, ensuring long-term usability and compatibility with future departmental needs.
- **Data Security and Accessibility:** Make a high priority the security of sensitive information, while ensuring accessibility for all stakeholders through a user-friendly interface.

1.4 Expected Outcome

Upon successful implementation of the project, the following outcomes are expected:

- **Efficiency Increase:** Automating activities like scheduling and mailing saves superfluous human efforts.
- **Enhanced User Experience:** It has a user-friendly interface, which will provide a great experience for both students and faculty.
- **Enhanced Data Security:** The access to information should be role-based.
- **Improved Alumni Engagement:** Results in proper tracking and communication with alumni.
- **Effective Communication:** Integrated email system and notice board to keep updates on time.
- **Scalability:** A future-proof platform that scales with increasing departmental demands.

1.5 Report Layout

Chapter 1: Introduction

Background, Motivation, Objectives, Expected Outcome, Report Layout, Comparative Studies, Scope of the Project, Challenges

Chapter 2: Software Requirement Specification

Business Process Modeling, Requirement Collection and Analysis, Stakeholders, Functional Requirements, Non-Functional Requirements, Use Case Diagram and Description, Activity Diagram, Sequence Diagram, Gantt Chart, SWOT Analysis

Chapter 3: Design Specification

Front-End Design, Back-End Design, Interaction Design and User Experience (UX), Implementation Requirements

Chapter 4: Implementation and Testing

Database Implementation, Frontend Implementation, Backend Implementation, Interaction Mechanisms, Integration and Deployment, Security Implementation, Key Challenges and Solutions, Testing Features

Chapter 5: Conclusion and Future Scope

Conclusion, Future Scope

Chapter 6: Appendix

Database Schemas, ER Diagrams, Additional Resources

Chapter 7: References

Lists all resources, tools, and frameworks utilized during the project.

1.6 Comparative Studies

The ITM Website is designed with care to ensure the utility and user experience of this website, keeping in mind the existing management systems of the university, are top-notch. Unlike many generic platforms, which usually aren't flexible enough to adapt to unique needs, this website is designed specifically to fit the needs of the ITM department. Key features include:

- Role-based permissions for secure operations.
- Provide **customized functionalities** for each stakeholder.
- A responsive design for seamless access across devices.
- Integrate all management modules into a **single, unified system**.

All these features make the ITM Website a state-of-the-art, user-friendly solution that addresses the challenges of the department effectively.

1.7 Scope of the Project

The scope of the ITM Website includes:

- **User Management:** Role-based access for super-admin, admin, faculties, and students.
- **Faculty and Student Management:** Comprehensive data handling and access.

- **Alumni Engagement:** Tools for tracking alumni achievements and successful career maintaining connections.
- **Routine and Schedule Management:** Simplified creation and dissemination of academic schedules easily to recognize room no , days ,start and ending time.
- **Scholarship Tracking:** Managing scholarship data for eligible students.
- **Communication :** Integrated email system for targeted communication.
- **Notice Board:** A digital platform for sharing announcements and updates.

This project is scalable and adaptable, making it suitable for future departmental needs.

1.8 Challenges

During the development of the ITM Website, several challenges were encountered, including:

- **Role-Based Access Control:** Ensuring secure, fine-grained permissions for different user roles.
- **Data Integration:** Combining diverse datasets into a unified system.
- **Scalability:** Designing a platform capable of handling increasing users and data.
- **Responsive Design:** Achieving compatibility across multiple devices and screen sizes.
- **Time Management:** Balancing project deadlines with maintaining high-quality standards.

Despite these challenges, the project was successfully developed and deployed, providing a valuable tool for the ITM department.

Chapter 2: Software Requirement Specification

2.1 Business Process Modeling

Business Process Modeling (BPM) is a crucial part of this project as it helps in visualizing, analyzing, and understanding the key activities within the ITM Website system. Below is a high-level process flow:

Key Processes

1. **User Management:** Super-admin and admin manage users' roles and permissions in role-based access.
2. **Faculty Management:** Admin adds and updates faculty profiles; allows faculty to access assigned courses and schedules.
3. **Student Management:** Admin to collect students' data and associate it with batches, allowing profile updates.
4. **Routine and Schedule Control:** Admin schedules, resolves conflicts. Faculty and students see schedules on the dashboard.
5. **Course Management:** Admin adds or updates courses and links them with semesters and faculty.
6. **Scholarship Management:** Admin maintains the scholarship students details .
7. **Alumni Management:** Admin keeps alumni info and does facilitate networking opportunities.
8. **Notice Board Management:** Admin post notices , ensuring timely updates to relevant users.

9. **Mail Communication:** Admin sends mail to specific batches or manual and automated systems.
10. **Club :** Admin can manage club resource and information , update , and resource , events , committee,

Benefits of BPM

- **Clarity:** Defines roles and processes for stakeholders.
- **Efficiency:** Automates workflows and reduces manual effort. **Scalability:** Effortlessly takes on new users and features.
- **Scalability:** Easily accommodates new features or users.:
- **Transparency :** Keeps all records up to date and plays no favorites in processes like user management and scholarship approval.
- **Improved Communication:** Facilitates structured, real-time communication between students, faculty, alumni, and admins.

2.2 Requirement Collection and Analysis

The requirement collection process involves gathering detailed information from stakeholders—students, faculty, and administrators—about their needs and expectations. This data is crucial to ensure the system meets user requirements.

Interviews: Conducting conversations with faculty members, administrators, and students to better understand their pain points and identify functionalities needed.

Surveys: May be used to poll a larger population for more detailed feedback on functionalities required.

Observation: The current workflow in the department is analyzed to identify probable areas of improvement.

Data is then analyzed in order to find key themes, which include:

- Smarter course registration
- Allowing real-time notifications for schedule changes.
- Improve communication between departments and users.
- Offering centralized access to student, faculty, and course information.

2.3 Stakeholders

The primary stakeholders for this project are:

Students : Access to academic information regarding course routine, schedules, and notice.. They get direct notifications from the department or faculty.

Faculty: Faculty sends emails to communicate with students. Course materials, routines, schedules and notice boards. Assisted in administration and changes of their course schedules.

Admin: Super-Admin & Admin Roles: Full control over university data, including management of faculty, students, courses, and schedules.

Add, edit, or delete records as per one's needs for the smooth functioning of all departmental processes.

Granular level reporting feature and analytics access for better informed decision-making.

2.4 Functional Requirements

FR-01	User Management
Description	Super-Admin can manage all users, including creating, updating, deleting, and assigning roles (e.g., Admin, Faculty, Students). Admin can manage faculty and students only.
Stakeholders	Super-Admin, Admin, Faculty, Students
Priority	Super-admin & Admin = High , Faculty = Medium , Student = low

FR-02	Role and Permission Management
Description	Super-Admin can define and manage roles and permissions, controlling access to features for Admin, Faculty, and Students.
Stakeholders	Super-Admin, Admin, Faculty, Students
Priority	Super-Admin = High , Admin = Medium

FR-03	Course Management
Description	Super-Admin and Admin can add, update, view, or delete course information, including course codes and credits.
Stakeholders	Super-Admin, Admin,
Priority	Super-Admin = High, Admin = High

FR-04	Routine Management
Description	Super-admin and admin can create and edit routines. Faculty and students can view routines.
Stakeholders	Super-Admin, Admin, Faculty, Students
Priority	Super-Admin = High, Admin = High

FR-05	Schedule Management
Description	Super-Admin and Admin can create, modify, or delete schedules. Students and faculty can view schedules in real-time.
Stakeholders	Super-Admin, Admin, Faculty, Students
Priority	Super-admin & Admin = High , Faculty = Medium , Student = low

FR-06	Email Notifications
Description	Super-admin can configure email settings. Admins can send batch-wise or manual emails to students. Faculty can send emails to students.
Stakeholders	Super-Admin, Admin, Faculty,
Priority	Super-admin & Admin = High , Faculty = Medium

FR-07	Scholarship
Description	Super-admin and admin can manage scholarship details. Students can view available scholarships.
Stakeholders	Super-Admin, Admin, Student,
Priority	Super-Admin = High, Admin = High

FR-08	Alumni
Description	Super-admin and admin can manage alumni profiles and pass-out years.
Stakeholders	Super-Admin, Admin, Alumni
Priority	Super-Admin = High, Admin = High

FR-09	Event Management
Description	Super-Admin and Admin can create, update, and delete events.
Stakeholders	Super-Admin, Admin,
Priority	Super-Admin = High, Admin = High

FR-10	Notice board
Description	Super-Admin and Admin can post notices. All users (Faculty, Students) can view the notices in real-time.
Stakeholders	Super-Admin, Admin, Faculty, Students
Priority	Super-Admin = High, Admin = High , Faculty = Low , Student = Low

FR-11	ManageSystem
Description	Super-Admin can monitor and manage the entire system, including system logs, user activity tracking, and backup or restore operations.
Stakeholders	Super-Admin
Priority	Super-Admin = High

2.5 Non-Functional Requirements

2.5.1 Performance

NFR-01	Page load time Will Response Or Load Faster
Description	Response to view page shall take to longer than 3 second to appear to the screen
Stakeholders	Super-admin , Admin , Faculty , Student
Priority	High

2.5.2 Safety & Security

NFR-02	All data should be in a secure mode
Description	All sensitive data (password,email ,ect) must be encrypted,that no change to leak or damage any data and role based access enforced
Stakeholders	Developers,Super-Admin
Priority	High

2.5.3 Reliability & Availability

NFR-03	The system must be available 24/7
Description	The System must be need a trusted and good server so that uptime will respond 24/7 as close as possible
Stakeholders	Guest, Student , Faculty , Admin
Priority	High

2.5.4 Maintainability and Supportability

NFR-04	System Will Always Maintain According To Needs
Description	The system is up-to-date according to timeline and needs. Bug fix will be counted as zero tolerance and fix as soon as possible
Stakeholders	Super-Admin And Developer
Priority	High

2.5.5 Usability

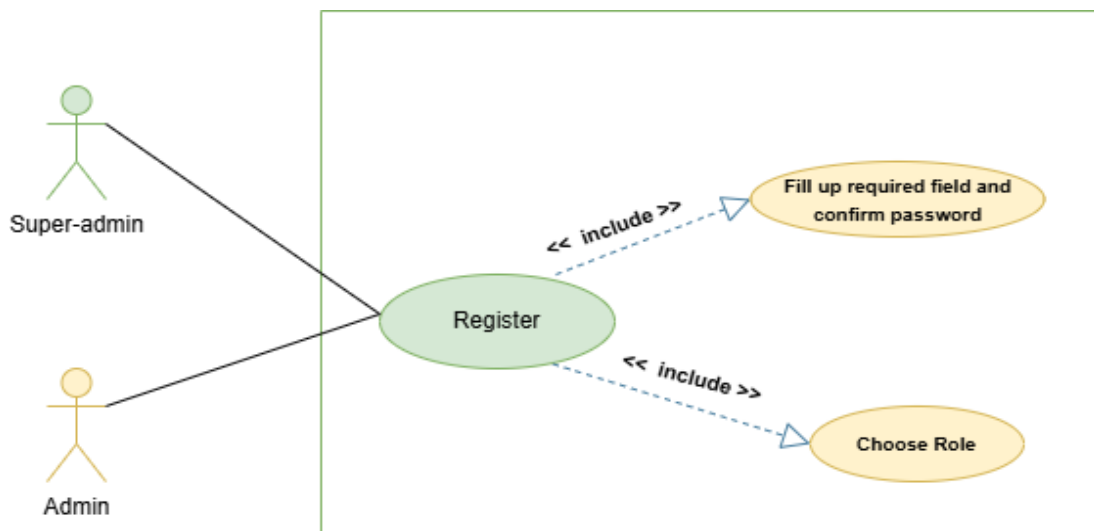
NFR-05	How easy a system is to use
Description	The user interface should be intuitive and easy to navigate for all user roles.
Stakeholders	Super-admin, Admin, Faculty, Students
Priority	High

2.5.6 Backup and recovery

NFR-05	Data Backup and Disaster Recovery
Description	Daily backups should be automated, and recovery must be possible within 2 hours of data loss.
Stakeholders	Developers, Super-admin
Priority	High

2.6 Use Case Diagram and Description

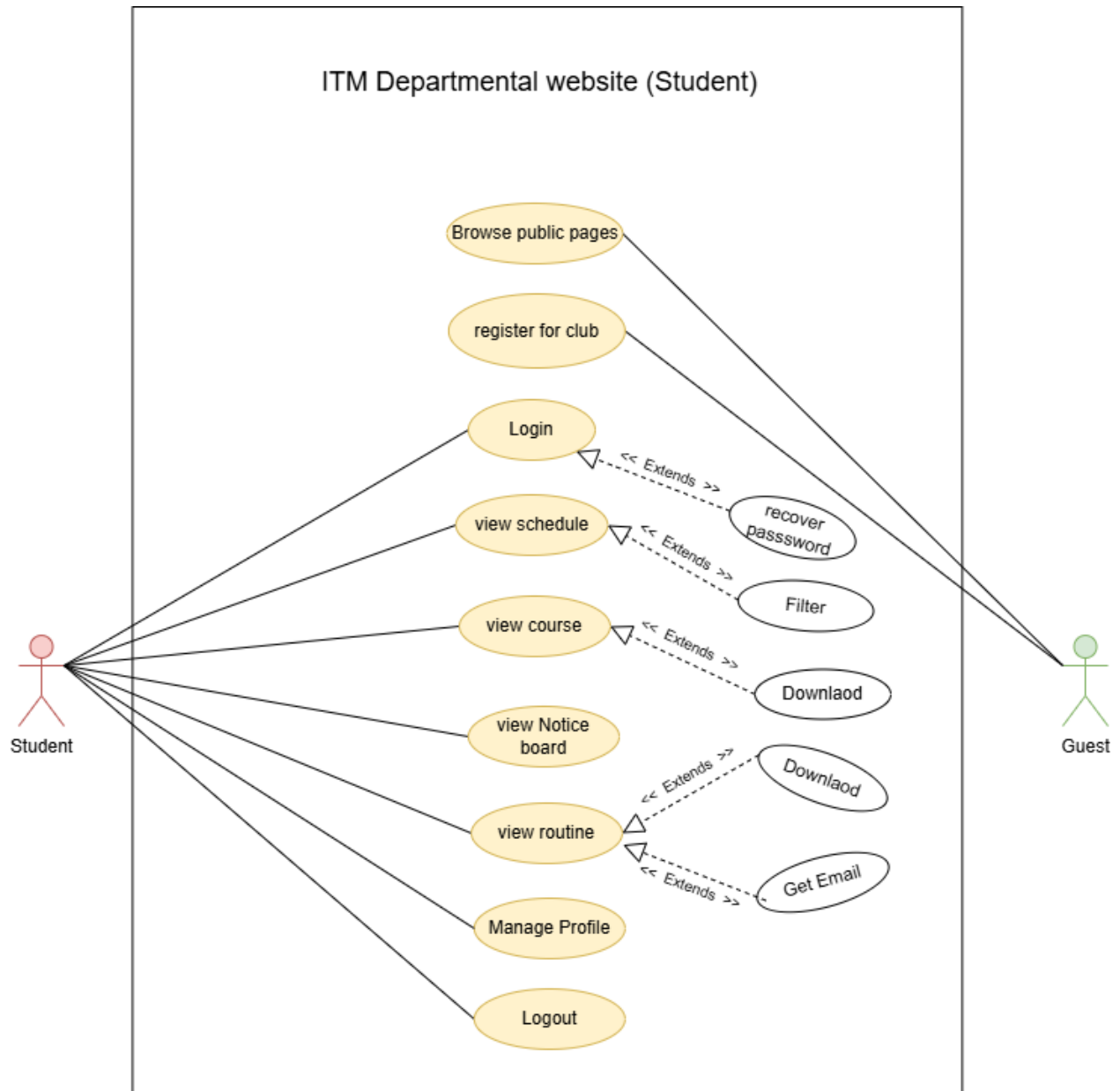
Use Case 1 : User Registration



NOTE: For better view please follow the link– [Registration Use Case](#)

Figure 2.6.1: Registration Use Case

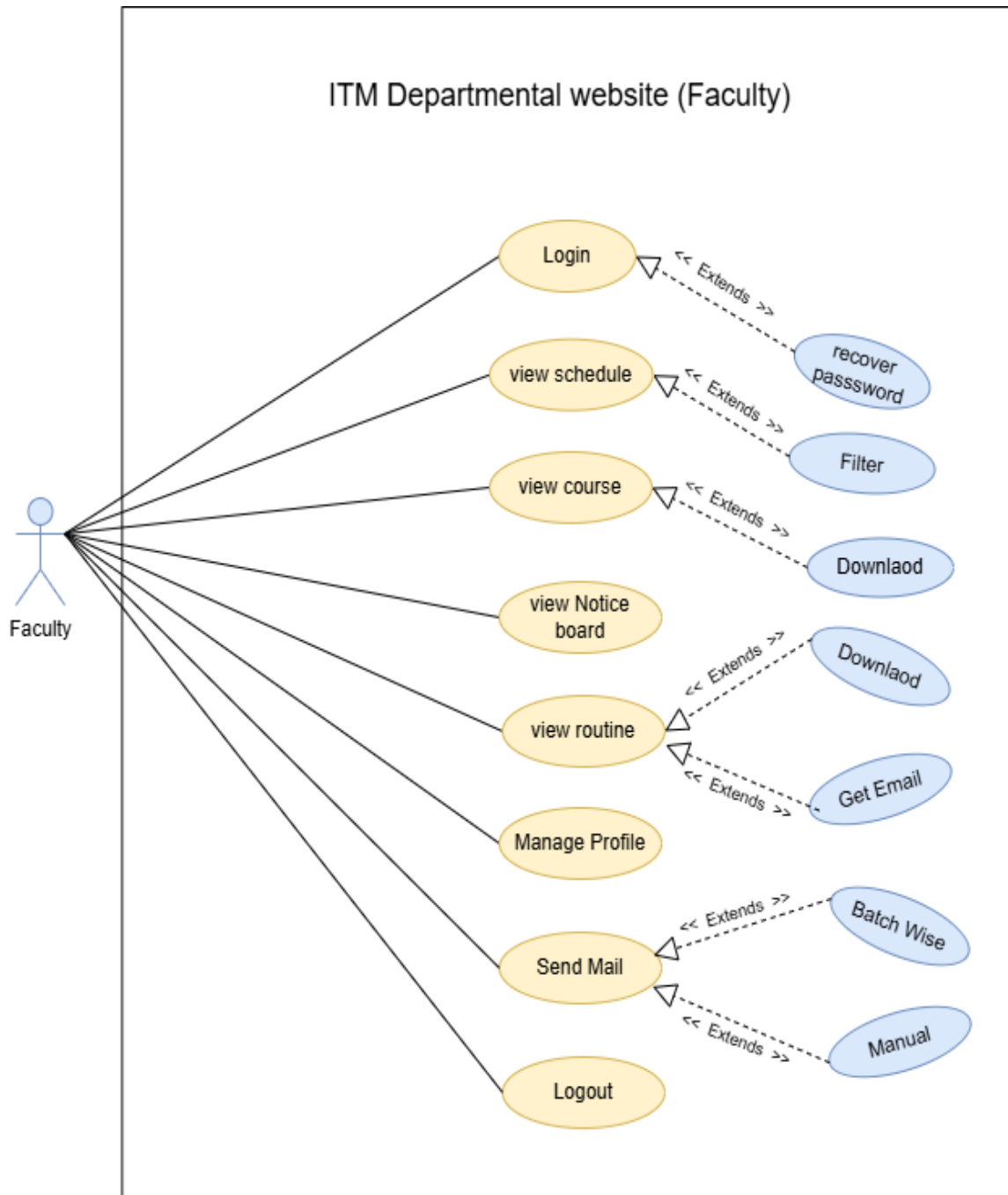
Use Case 2 : Student



NOTE: For better view please follow the link– [Student Use Case](#)

Figure 2.6.2: Student Use Case

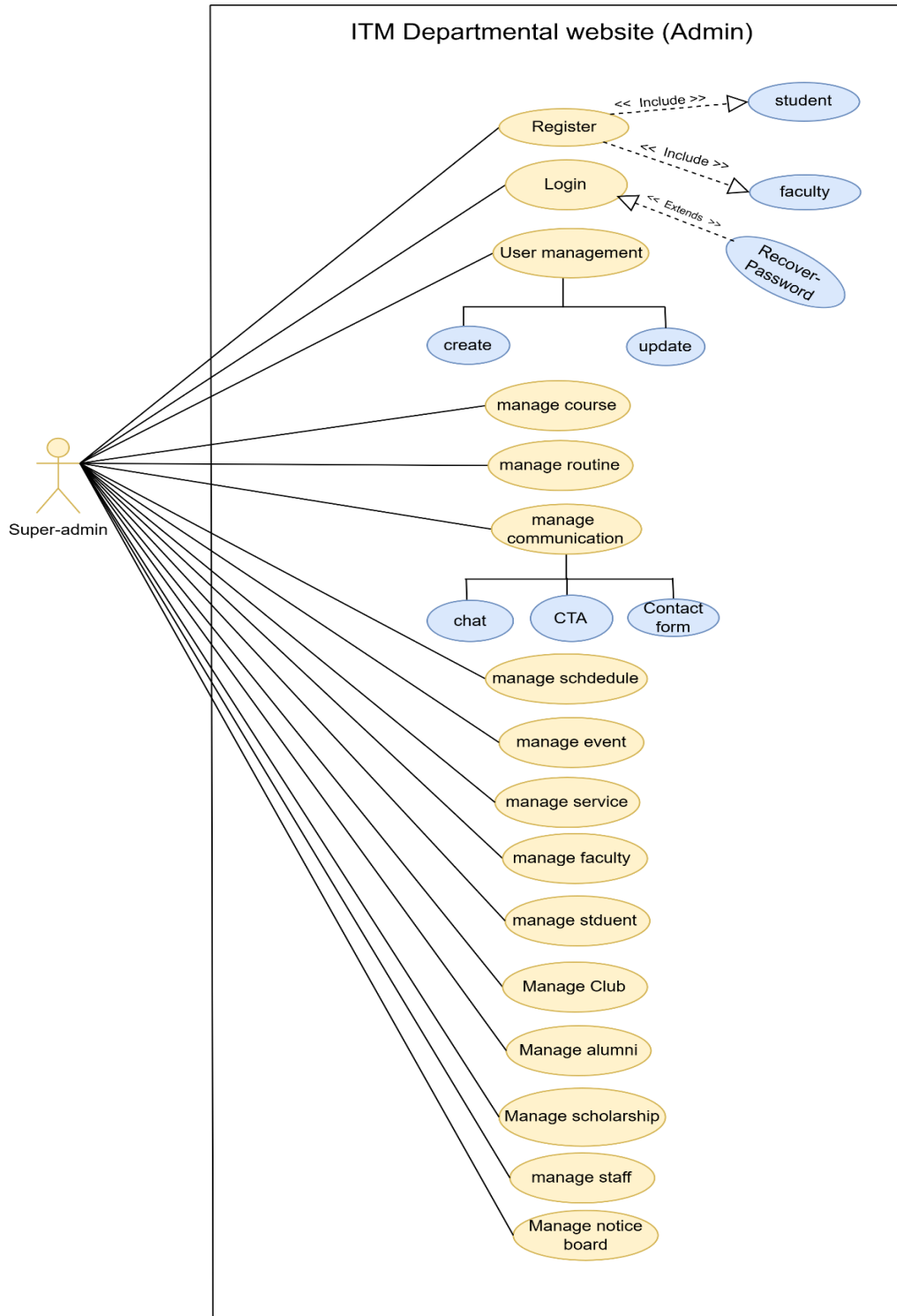
Use Case 3 : Faculty



NOTE: For better view please follow the link– [Faculty Use Case](#)

Figure 2.6.3: Faculty Use Case

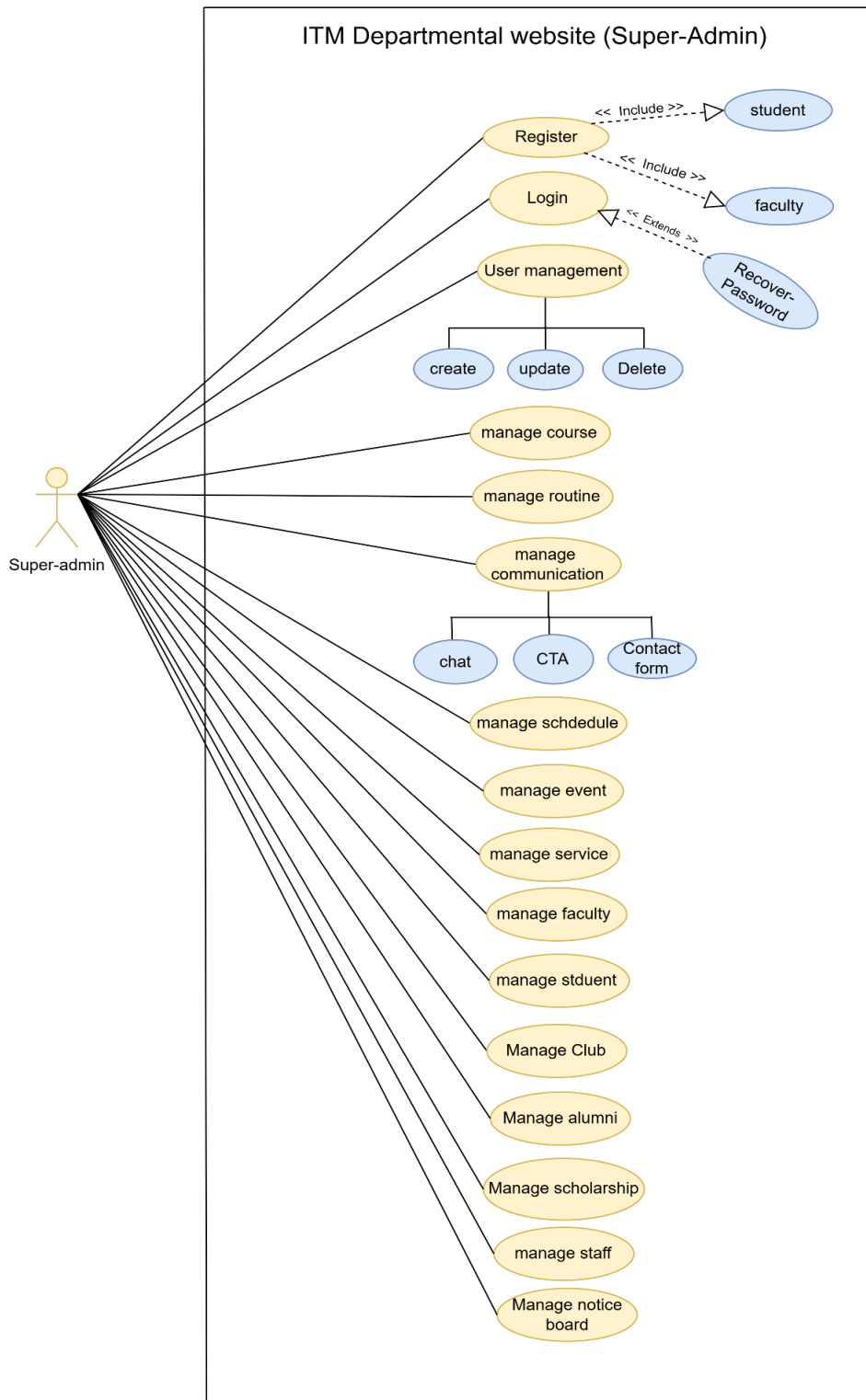
Use Case 4 : Admin



NOTE: For better view please follow the link– [Admin Use Case](#)

Figure 2.6.4: Admin Use Case

Use Case 5 : Super-Admin



NOTE: For better view please follow the link– [Super-admin Use Case](#)

Figure 2.6.5: Super-Admin Use Case

Description 1: User Registration and login

Use Case ID	UC-01
Use Case Name	Registration and login
Description	Super-admin, Admin can create a registration for Faculty , student , account valid credential or login to an existing account
Actors	Super-admin , Admin , Faculty , Student
Pre-Condition	User Must have an university email address
BasicFlow	√ Click on register button √ Enter the page √ Fill-up the required fields and valid email √ Choose user role √ Register Successfully
Post-Condition	The user is authenticated and directed to the dashboard

Description 2: Course Management

Use Case ID	UC-02
Use Case Name	Course Management
Description	Super-admin , Admin can manage courses ,add new course , modify course , delete course ,student and faculty can view
Actors	Super-Admin , Admin , Faculty , Student
Pre-Condition	The Super-admin,Admin must be logged in with authenticated and have permission to manage
BasicFlow	√ Super-admin,Admin logs into the system √ Click on Course button from dashboard √ The system displays the list of courses √ User can add,edit,delete course record √ The system validate the change and update the database show successful message
Post-Condition	

Description 3: Routine Management

Use Case ID	UC-03
Use Case Name	Routine Management
Description	Super-admin , Admin can manage ,semester-wise routine for courses.add new course , modify course , delete course ,faculty and student can view routine
Actors	Super-Admin , Admin , faculty , student
Pre-Condition	The Super-admin,Admin must be logged in with authenticated and have permission to manage
BasicFlow	<ul style="list-style-type: none">√ Super-admin,Admin logs into the system√ Click on Routine button from dashboard√ The system displays the list of routine√ User can add update pdf or image routine,edit,delete routine record√ The system validate the change and update the database show successful message
Post-Condition	Routine data is saved and accessible for faculty and student

Description 4: Scholarship Management

Use Case ID	UC-04
Use Case Name	Scholarship Management
Description	Super-admin , Admin can adding , Updating Assigning them eligible students,
Actors	Super-Admin , Admin , student
Pre-Condition	The Super-admin,Admin must be logged, And student must be registered in the system
BasicFlow	√ Super-admin,Admin logs into the system √ Click on student nav dropdown scholarship button from dashboard √ The system displays the list of scholarship list √ Admin can assigning new scholarship student profile add update,edit,delete record √ Student can view scholarship details in his dashboard also display on public page
Post-Condition	Scholarship are successfully assigned to eligible student

Use Case 5: Alumni Management

Use Case ID	UC-05
Use Case Name	Scholarship Management
Description	Super-admin , Admin can adding , Updating Assigning them eligible students,
Actors	Super-Admin , Admin , student
Pre-Condition	The Super-admin,Admin must be logged, And student must be registered in the system
BasicFlow	√ Super-admin,Admin logs into the system √ Click on student nav dropdown scholarship button from dashboard √ The system displays the list of scholarship list √ Admin can assigning new scholarship student profile add update,edit,delete record √ Student can view scholarship details in his dashboard
Post-Condition	Scholarship are successfully assigned to eligible student

Use Case 6: Student management

Use Case ID	UC-06
Use Case Name	Student Management
Description	Super-Admin & admin add new student ,edit ,view,delete student record
Actors	Super-Admin , Admin , Student
Pre-Condition	The Super-admin,Admin must be logged in with authenticated and have permission to manage student data
BasicFlow	<ul style="list-style-type: none">√ Super-admin,Admin logs into the system√ Click on student dropdown student button from dashboard√ Click on add button add new student ,view ,edit delete student information√ System valid input ,Name,ID,Email,Batch blood,location,phone,√ System updating database accordingly
Post-Condition	Student information are successfully store in database , update or remove in the system

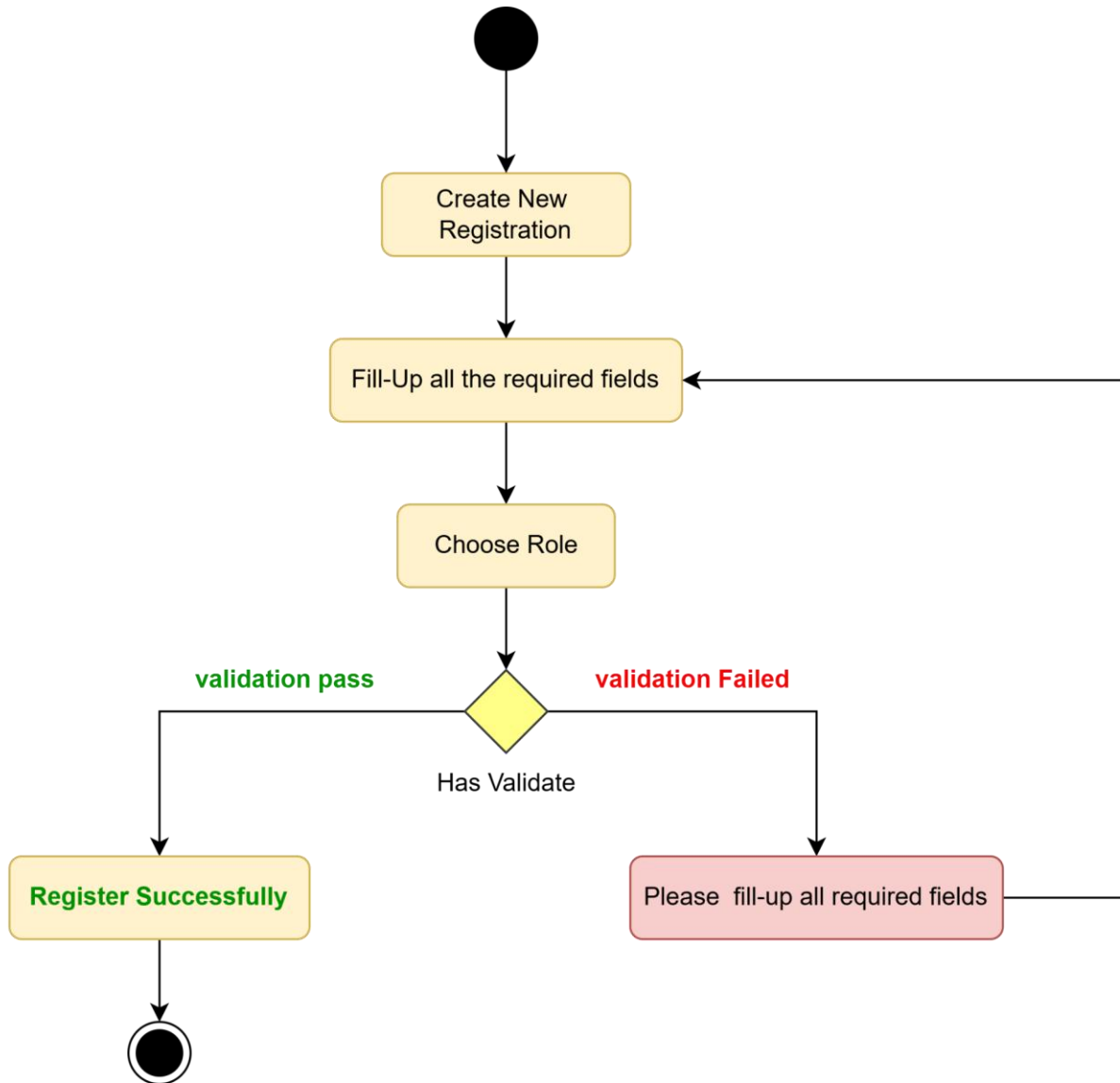
Use Case 7: Faculty management

Use Case ID	UC-07
Use Case Name	Faculty Management
Description	Super-Admin & admin add new faculty or ,edit ,view,delete student record
Actors	Super-Admin , Admin , Faculty
Pre-Condition	The Super-admin,Admin must be logged in with authenticated and have permission to manage faculty data
BasicFlow	<ul style="list-style-type: none">√ Super-admin,Admin logs into the system√ Click on Faculty button from dashboard√ Click on add button add new faculty ,view ,edit delete faculty information√ System valid input,Name,Email,Designation phone,√ System updating database accordingly and show in dashboard also public page
Post-Condition	Faculty information are successfully store in database , update or remove in the system

Use Case 8 : Notices Management

Use Case ID	UC-08
Use Case Name	Notices Management
Description	Users can view department notices and events posted by Admin.
Actors	Super-Admin , Admin ,Faculty , Student
Pre-Condition	The Super-admin,Admin must be logged in with authenticated and have permission to notices and events
BasicFlow	<ul style="list-style-type: none">√ Super-admin,Admin logs into the system√ Click on notice and events button from dashboard√ Click on Notices button add new notices ,view ,edit delete√ System input subject ,content-body, or pdf submit upload or possible to send mail for student or faculty√ System updating database successfully
Post-Condition	User can see the list of new notices or old notice in dashboard also show on public page

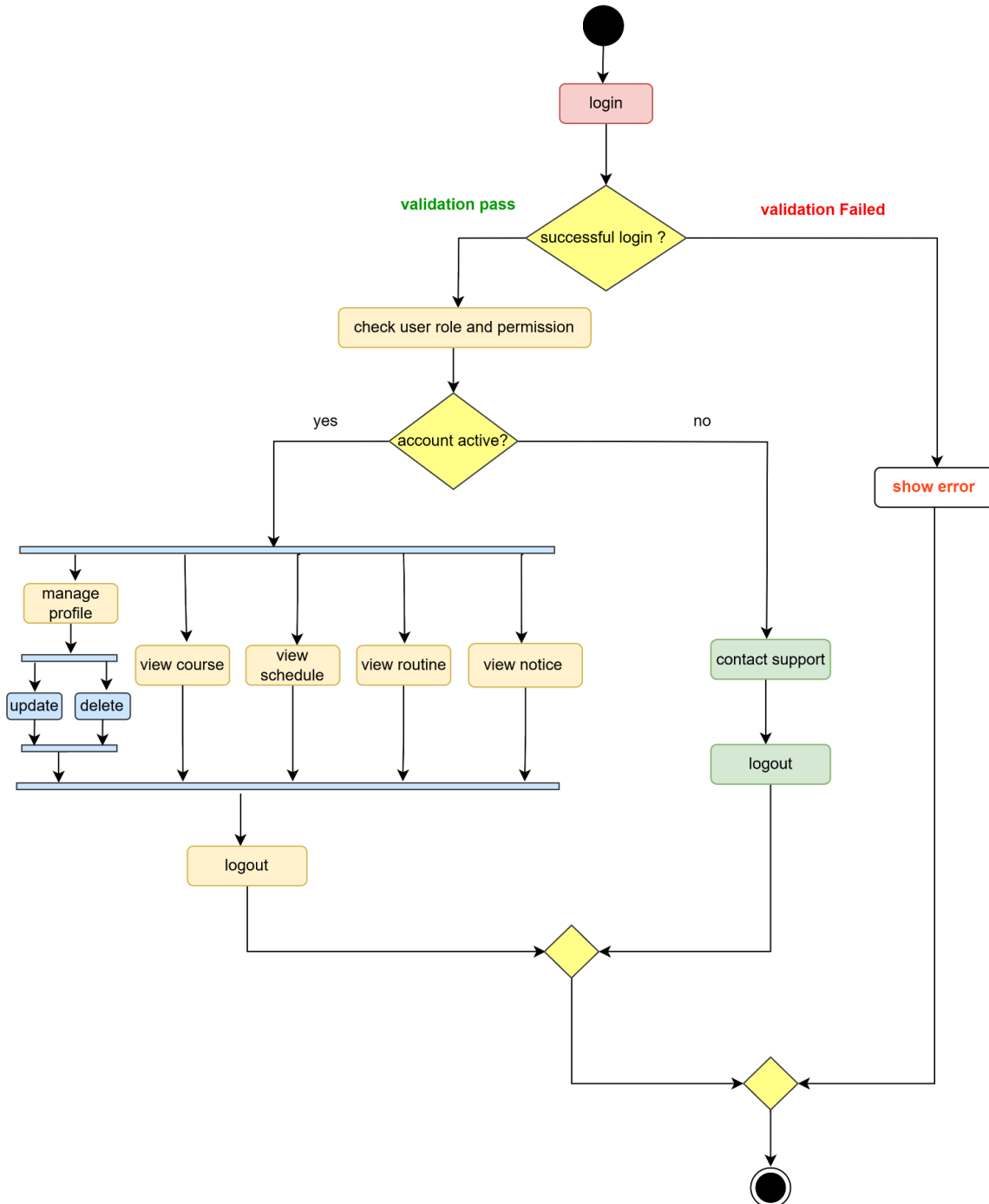
2.7 Activity Diagram



NOTE: For better view please follow the link– [Registration-activity-diagram](#)

Figure 2.7.1: User Registration Activity-Diagram

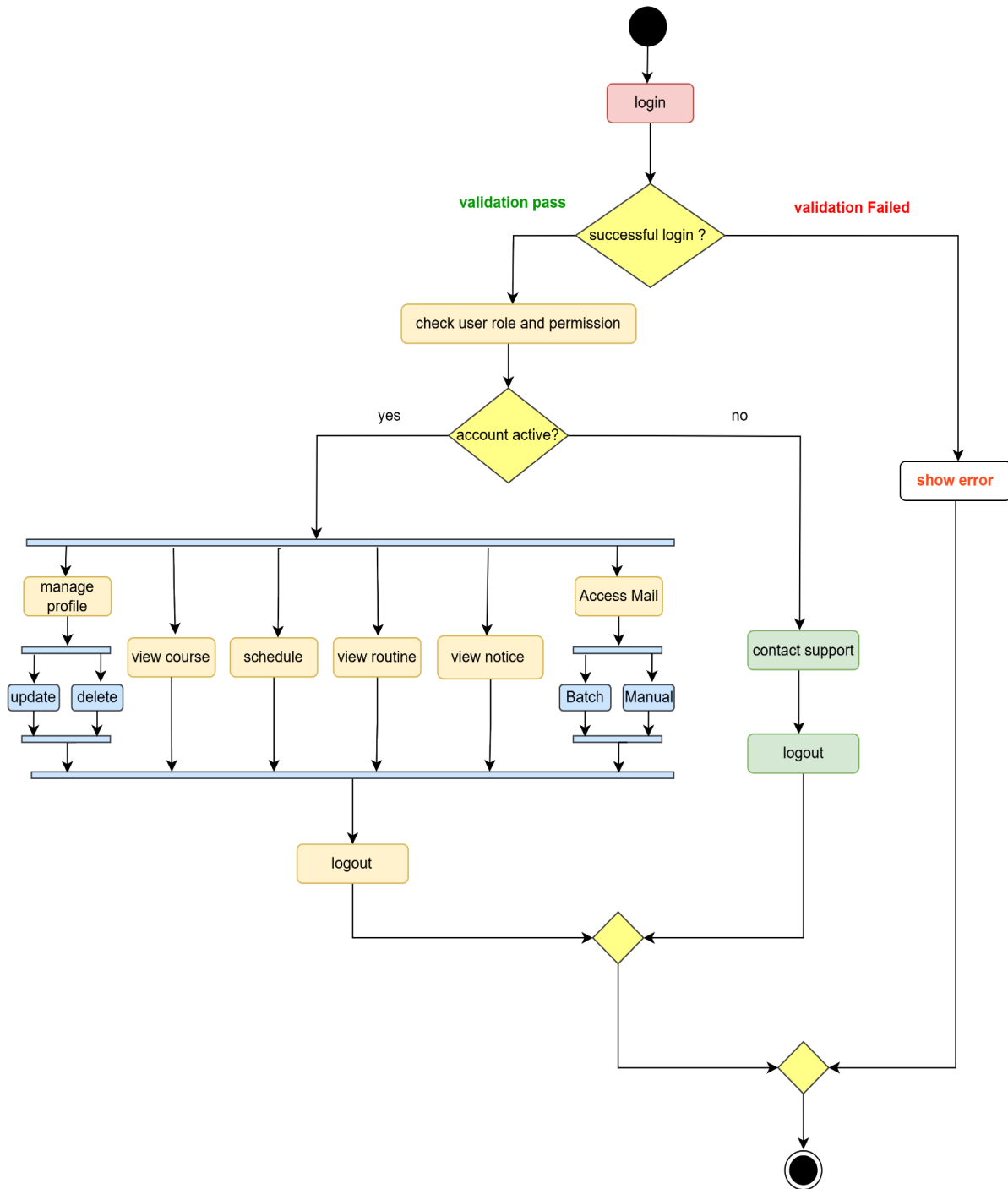
Activity diagram (Student)



NOTE: For better view please follow the link– [Student-activity-diagram](#)

Figure 2.7.2: Student Activity-Diagram

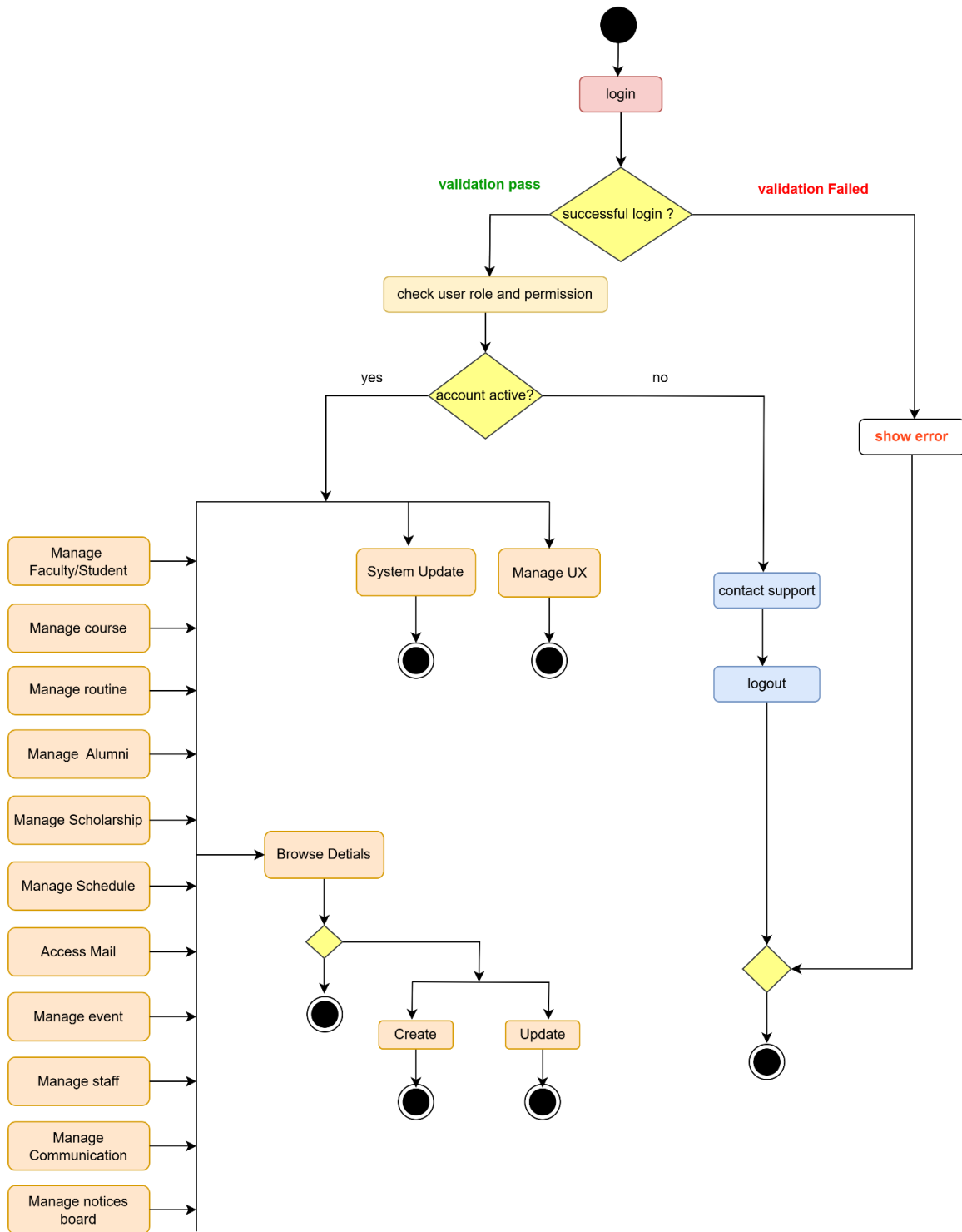
Activity diagram (Faculty)



NOTE: For better view please follow the link– [Faculty-activity-diagram](#)

Figure 2.7.3: Faculty Activity-Diagram

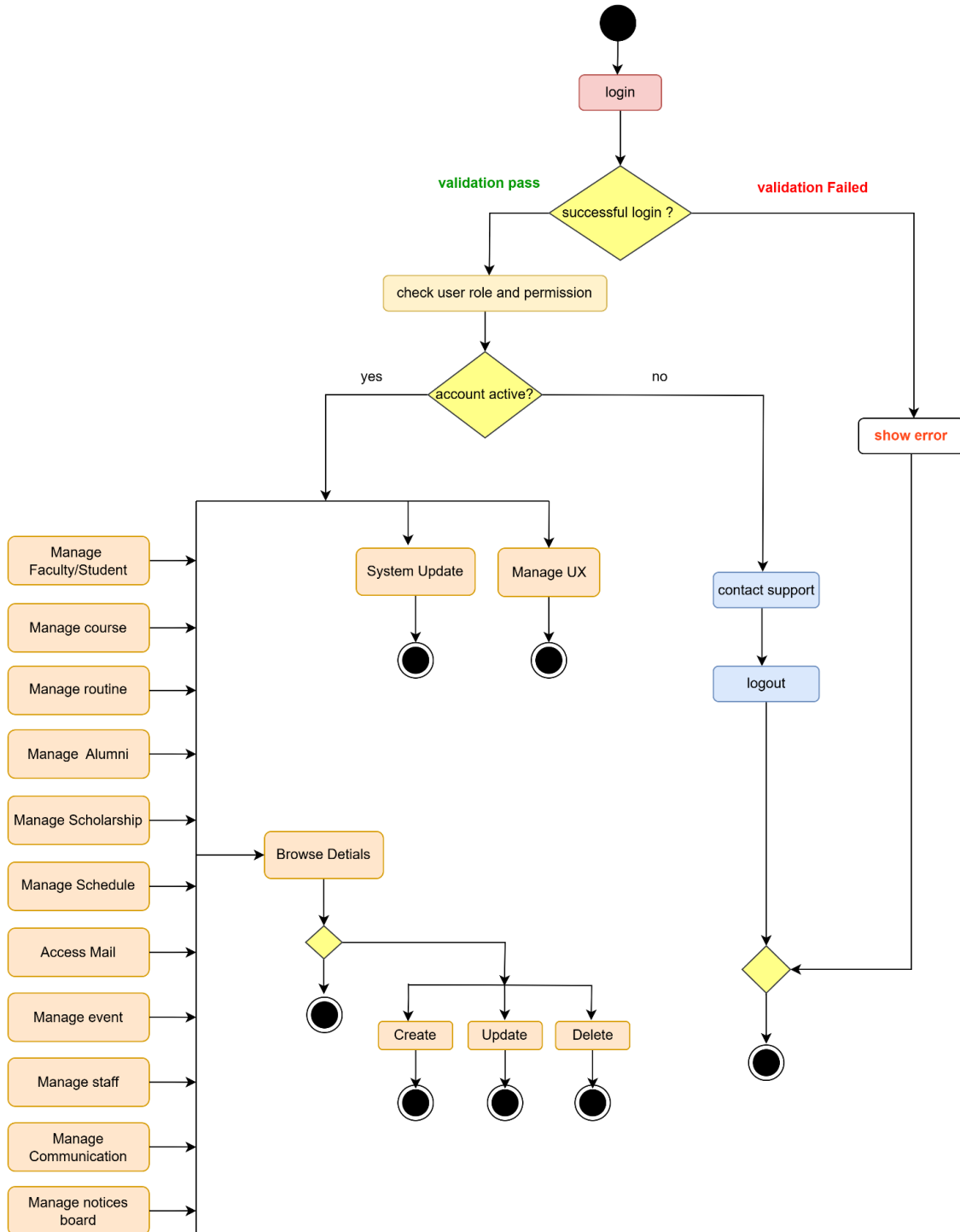
Activity diagram (Admin)



NOTE: For better view please follow the link– [Admin-activity-diagram](#)

Figure 2.7.4: Admin Activity-Diagram

Activity diagram (Super-Admin)

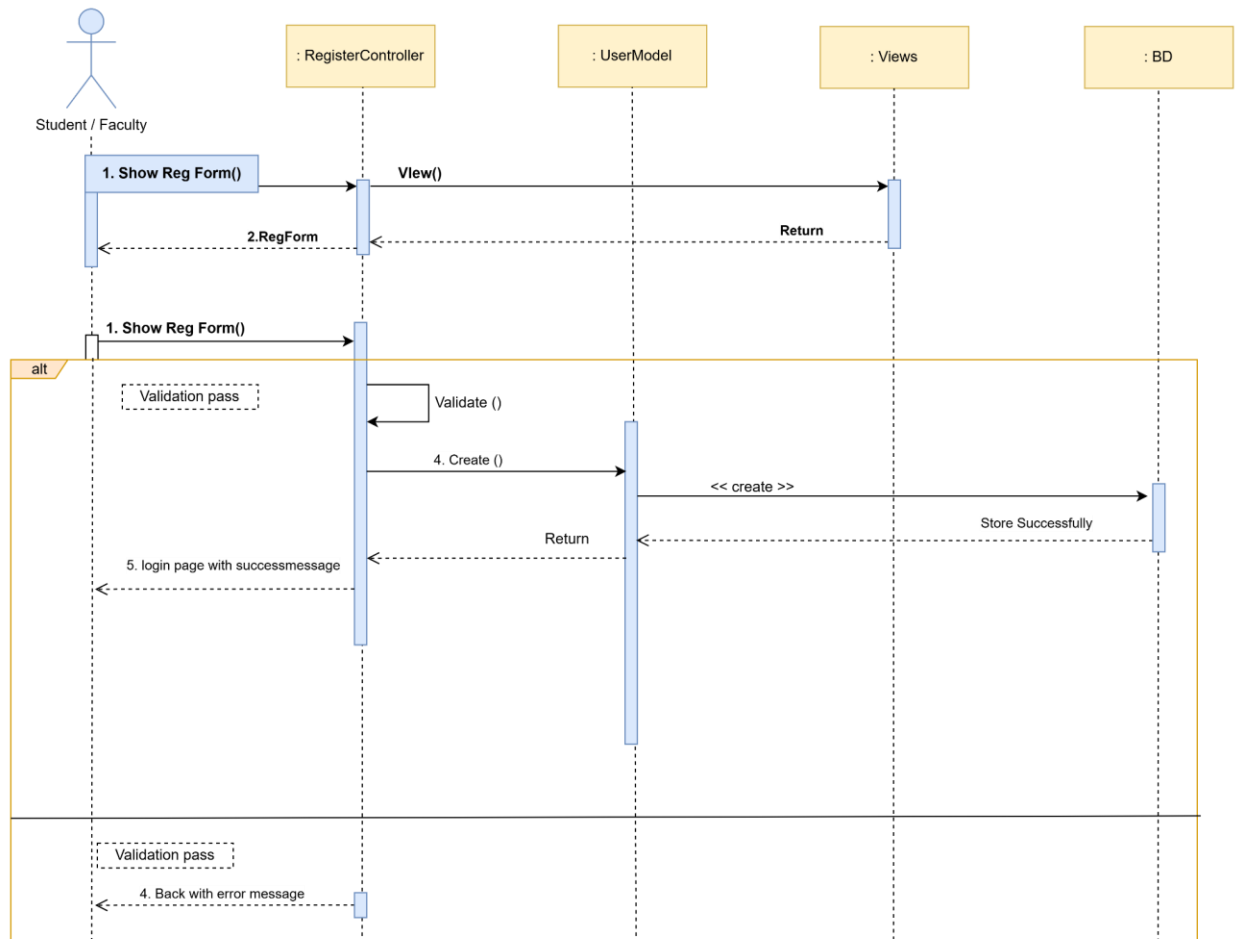


NOTE: For better view please follow the link– [Super-Admin-diagram](#)

Figure 2.7.5: Super-Admin Activity-Diagram

2.8 Sequence Diagram

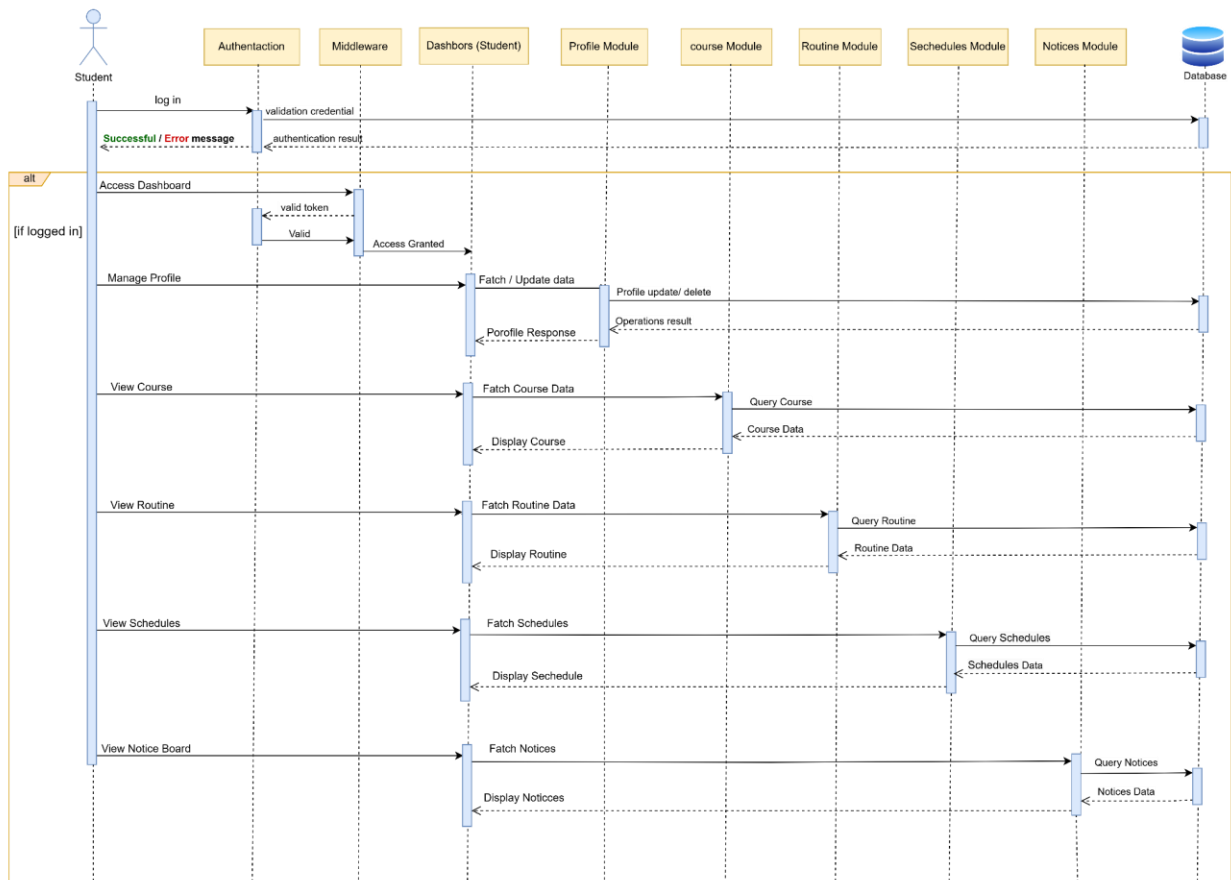
Registration



NOTE: For better view please follow the link– [Registration-sequence-diagram](#)

Figure 2.8.1: User Registration Sequence-Diagram

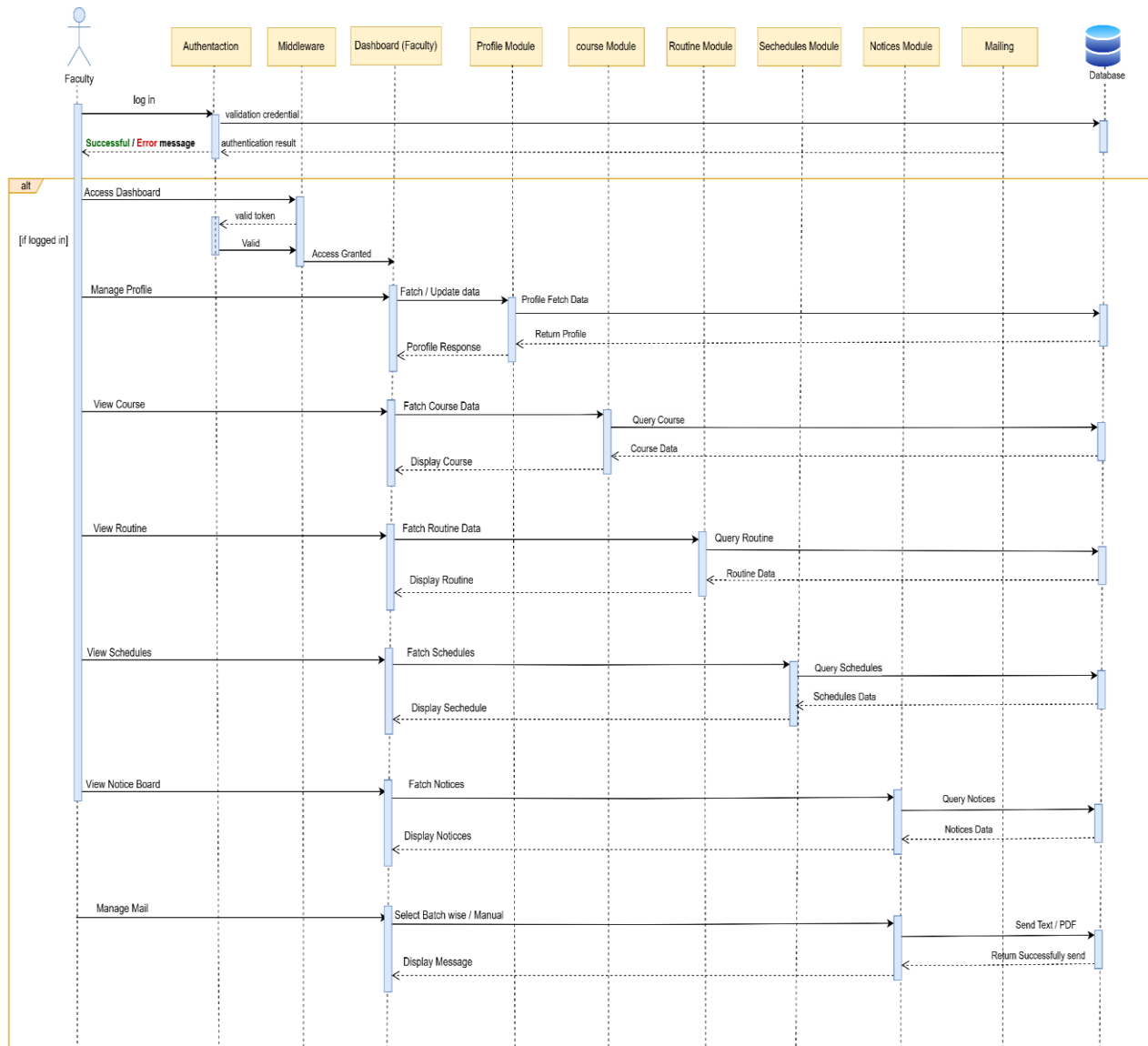
Sequence Diagram (Student)



NOTE: For better view please follow the link– [Student-sequence-diagram](#)

Figure 2.8.2: Student Sequence-Diagram

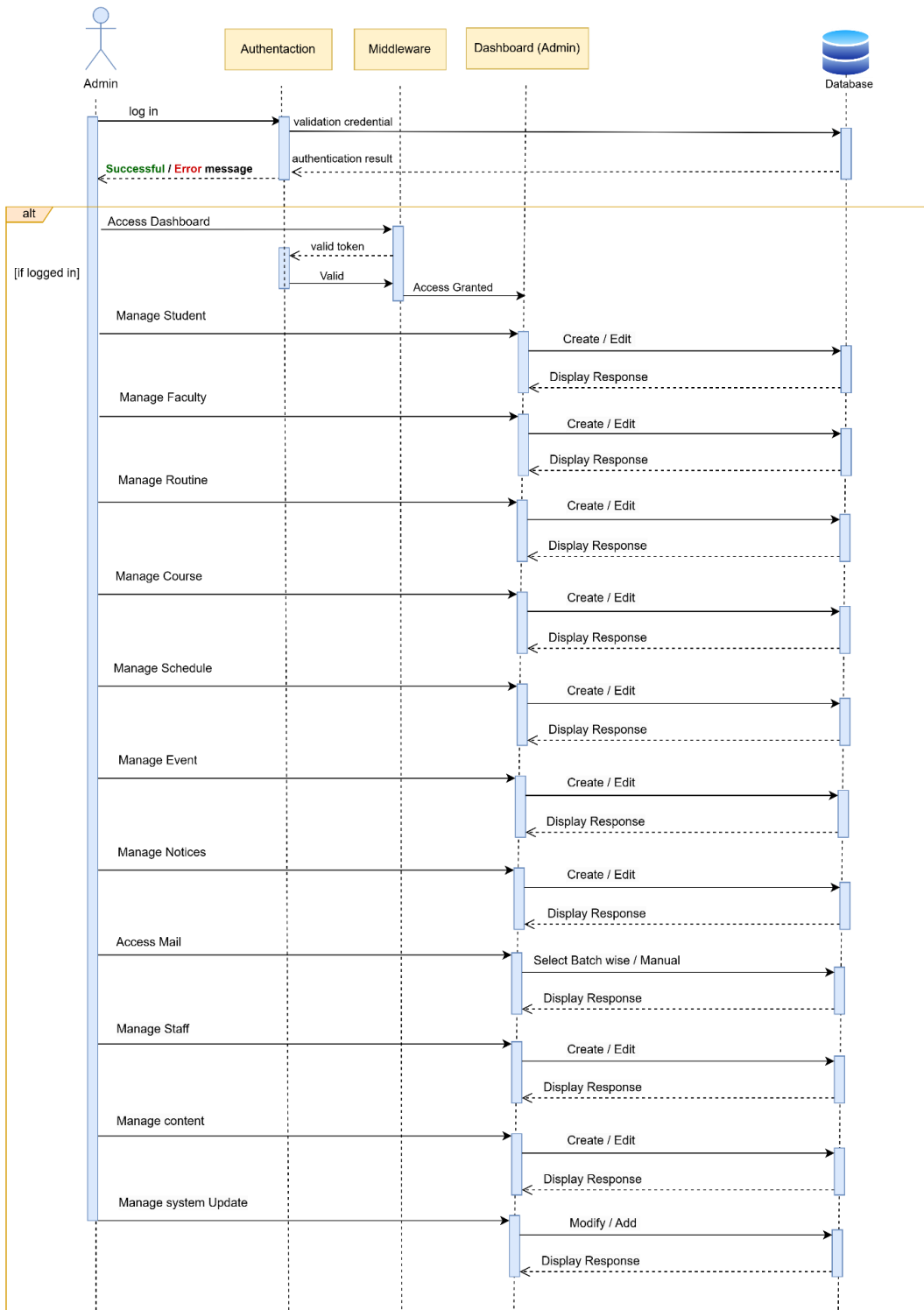
Sequence Diagram (Faculty)



NOTE: For better view please follow the link– [Faculty-sequence-diagram](#)

Figure 2.8.3: Faculty Sequence-Diagram

Sequence Diagram (Admin)



NOTE: For better view please follow the link– [Admin-sequence-diagram](#)

Figure 2.8.4: Admin Sequence-Diagram

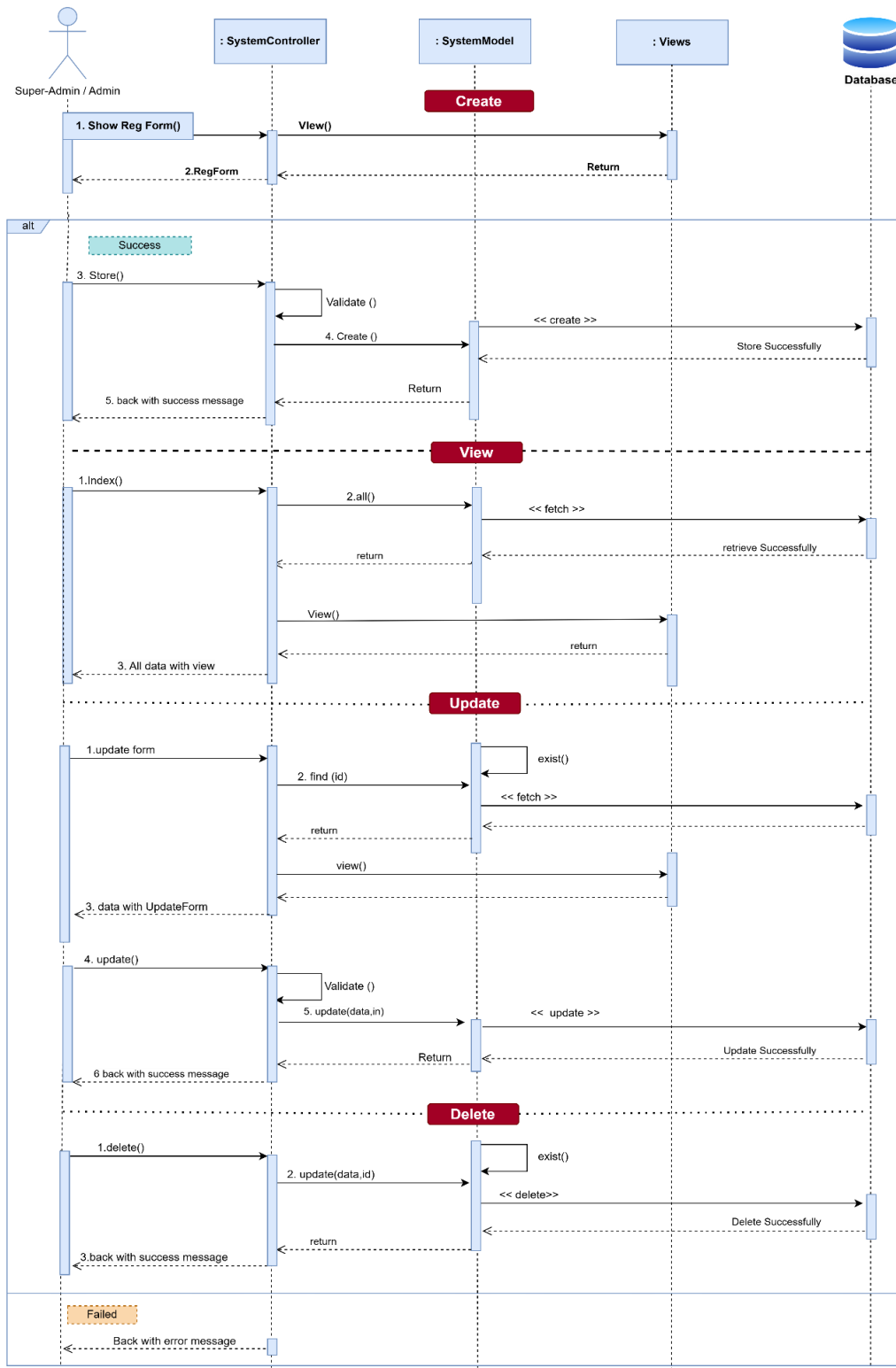
Sequence Diagram (Super-Admin)



NOTE: For better view please follow the link– [Super-Admin-sequence-diagram](#)

Figure 2.8.5: Super-Admin Sequence-Diagram

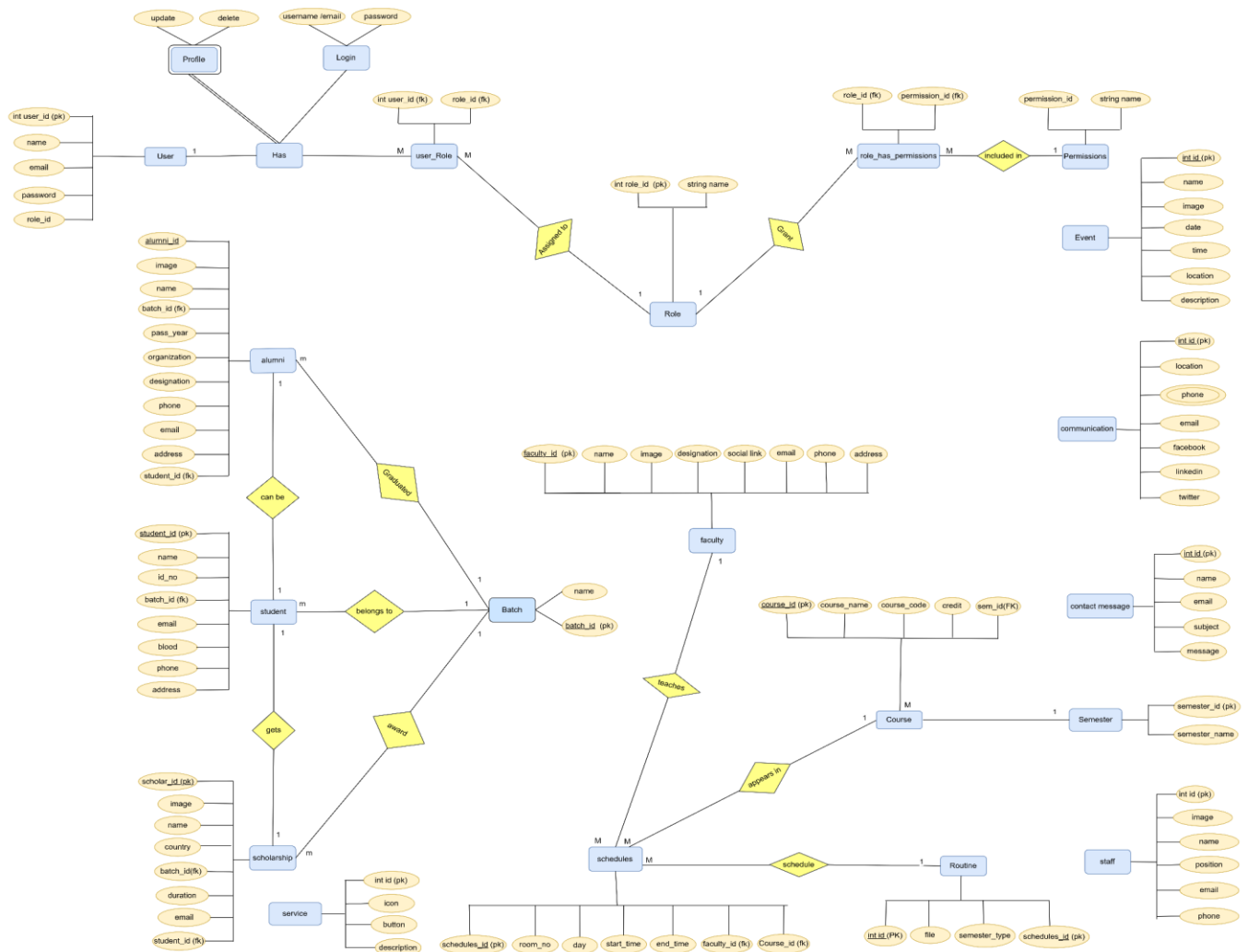
Manage System Sequence Diagram for Super-Admin



NOTE: For better view please follow the link– [manage-system-sequence-diagram](#)

Figure 2.8.6: Manage System Sequence-Diagram

2.9 Entity Relationship Diagram (ERD)



NOTE: For better view please follow the link– [ERD-diagram](#)

2.10 Gantt Chart

A **Gantt Chart** has been created to outline the project timeline. It details key milestones, including:

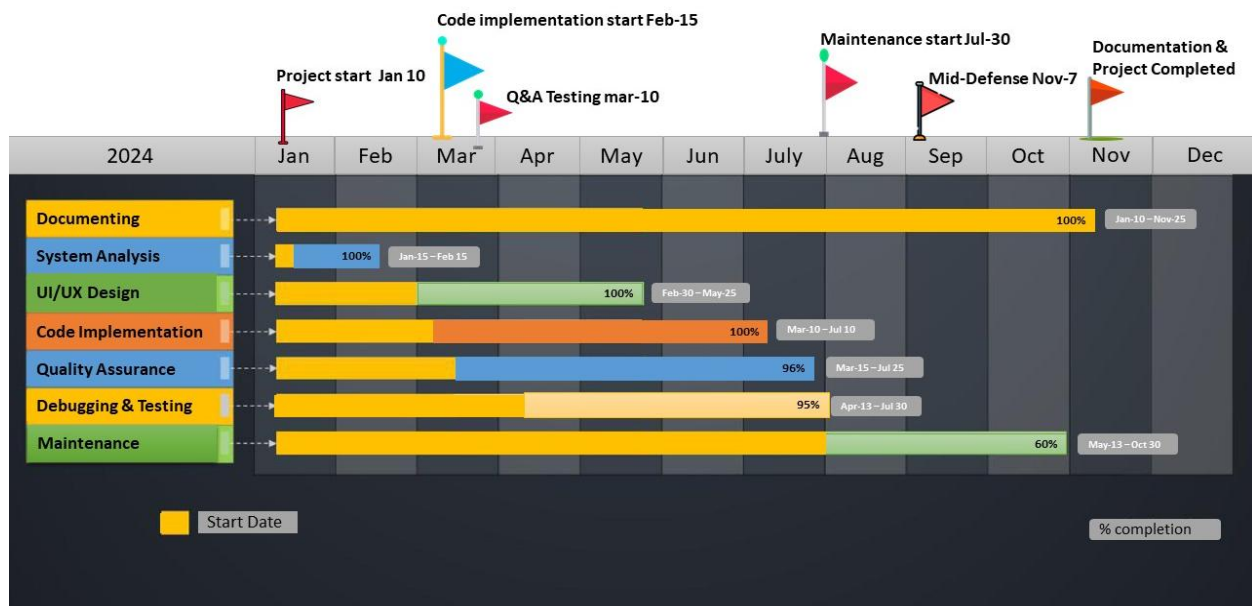


Figure 2.10: Gantt chart

The Gantt chart helps in tracking the progress and ensures that all tasks are completed on time.

2.10 SWOT Analysis

Strengths:

- **Dynamic and Adaptive System:** Yet a fully dynamic website able to adapt to changes in needs and the increase of user demands.
- **Role-Based Access Control:** Provide complete RBAC in place for role-specific access by the admin, faculties, and students for managing secured data.
- **User-Friendly Interface:** Navigate with ease owing to intuitive, responsive design available across all major browsers and devices.
- **Comprehensive Features:** routine scheduling, highlighting scholarships, alumni, events, networking, and a notice board.
- **High-Performance Architecture:** Laravel combined with MySQL guarantees scalability, performance; therefore, upgrading it is pretty easy.

Weaknesses:

- **High Cost of Development and Maintenance:** Development requires a lot of cost initially and updates thereafter.
- **Database Centralization:** Without optimization, the cause of major performance problems among large users.
- **Limitations of Scope:** Currently, it is focused on ITM only; scaling other departments and universities needs extra resource customization.
- **Resource Intensity:** Resource-intensive, high maintenance, enhancement requires skilled developers.

Opportunities:

- **Feature Development:** Integrate some of the high-end features like event registration, analytics dashboard, and integrated messaging systems.
- **Scaling of Department :** Opportunity to extend the system to other university departments.
- **Showcasing ITM Achievements:** Web presence to promote the different success stories of the departmental achievements and fostering a strong online presence.
- **Increased User Interaction:** The users' active involvement in tracking down scholarships and alumni networks, and timely notifications related to the same.
- **Improved Accessibility :** central point for students, faculties, and admins for reaching out to academic resources and information anytime anywhere.

Threats:

- **Improved Accessibility :** central point for students, faculties, and admins to reach any academic resource and information anywhere, anytime.
- **Data Security and Privacy Risks:** These would be attributed to the unauthorized accessing or hacking of confidential sensitive student and Faculty and staff information.
- **System Scalability Challenges:** If many users begin to use the system at one time without scaling the architecture of the system, the performance of the system will lag.
- **Compliance Requirements:** It should align with the laws and regulations laid down, if any, like GDPR or local privacy laws.
- **Technical Downtime:** Potential to decrease usability and user trust due to server crashes or bugs.

Chapter 3: Design Specification

The chapter covers in great detail the design and architecture of the ITM Departmental Website, elaborating on the front-end and back-end interaction design and different implementation requirements thereof. It will be user-friendly, scalable, and accessible to meet the needs that come up from super-admin, admins, faculty, and students.

3.1 Front-End Design

Front-end design The ITM Departmental Website front-end design should be minimalistic, responsive, and accessible. It shall provide a very intuitive interface that shall be easily interacted with, by all kinds of user roles.

3.1.1 Frameworks and Technologies

- **HTML 5 & CSS3:** Provide background regarding structuring of websites and their styling.
- **Bootstrap 5 (CSS Framework):** Easy to make responsive and less code for each device, such as mobile-first, and use prebuilt components, such as modals, alerts, and navigation bars.
- **JavaScript -with jQuery-**, to achieve some interactive aspects: dynamic updates, live notifications, AJAX.

3.1.2 Styling

- **Bootstrap Framework :**
 - Delivers a mobile-first, responsive layout.

- Built-in components such as modals, alerts, and navigation bars ensure a polished user experience.
- **Custom CSS:**
 - For branding and theme customization aligned with university standards.

3.1.2 User Interface Design

- **Responsive Navigation:**
 - A sidebar menu adapts dynamically to specific user roles based, showing role-specific features.
 - Top navigation works well with quick profile links, dashboards, and Logout setting options.
- **Dashboard:**
 - Provides an overview of user-specific information, such as events, recent notices, and schedules..
 - Customized to super-admins, admins, faculty, and students.
 - Provide a view of the specific user's information like: events, course, schedule recent notices,
 - Customized for super-admins, admins, faculty, and students.
- **Interactive Components:**
 - Forms clean forms within a pickle input validation.
 - Tables: dynamic table with filtering option, and pagination to handle big sets, like lists of students and faculty ,course,schedule their timetables.
 - Notifications: Real-time updates on schedule, notice, or event changes through modals and alerts.

3.1.4 Key Pages

- **Home** : Welcomes users ; with an overview of the platform, highlighting the purpose and key features.
- **Login**: Facilitates secure user authentication and profile creation.
- **Dashboard**: Customizable role, with key data and actionable.
- **Faculty Management**: Manage faculty profiles and schedules, mailing ,course (admin-only).
- **Student Portal**: Provides students with access to their schedule courses, routines, and notices.
- **Alumni** : networking amongst their peers and participating in campus events.
- **Notice Board**: Shows updates and announcements to all users.
- **Email System**: It allows for communication, it sends batch-wise and Manual emails.

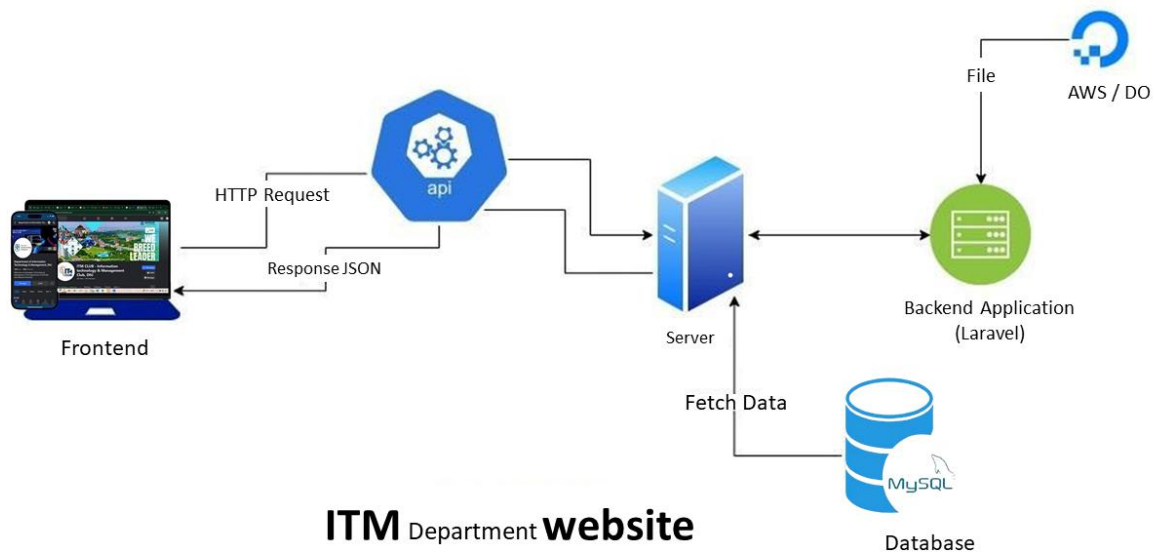
3.1.3 Front-End Accessibility

- It works on desktop computers, tablet devices, and smartphones. Of course, WCAG wants to make sure access includes screen readers and keyboard navigation.
- WCAG compliance includes accessibility features like screen reader and keyboard navigation support for the disabled.

3.2 BackEnd Design

The backend ensures robust functionality, security, and scalability, supporting all business logic and data management.

3.2.1 Architecture



- **Framework:** Laravel ITM Website is based on Laravel, one of the most robust and popular PHP frameworks, which allows performing effective back-end development in a very developer-friendly way. Then, Laravel used its MVC structure for efficiency in development and maintenance.
- **Database:** MySQL is to be used for structured storage of entities like users, courses, schedules, and notices student ,fauct record.

3.2.2 Core Functionalities

Role-Based Access & Control :

- **Super-Admin:** Full access in order to administer everything..
- **Admin:** Manage faculty, students, and content excluding system-level settings.
- **Faculty:** Course and schedule access, Email system tools.
- **Students:** Read-only access to related sections.
- **Data Management:**CRUD for all entities - users, courses, schedules, and notices.
- **Email System:** It sends emails queue-based for batch-wise or individual communication.
Real-time
- **Real-Time Notifications:**Alert for the events like updated schedules or new notices.

3.2.3 Security measures

- **Authentication:** Laravel default authentication, with additions of role-based middleware.
- **Input Validation:**
 - All user input is sanitized through Laravel's validation.
- **Encryption:**
 - Encrypt sensitive data like passwords and emails..
- **CSRF Protection:**
 - Laravel's built-in CSRF protection ensures secure form submissions.
- **Database Security:**
 - Avoid SQL Injection via parameterized queries.
 - Use migrations to safely update schemas with Laravel.
- **Recovery and Backup :**

- Regular automated backup of database and storage files.

3.2.4 Middleware

- **Role-Based(Middleware):**

Make sure only authorized users can access specific routes. Example:

- **Custom Middleware:**

- Logging user activities.
- Preventing access to specific pages based on conditions (e.g., expired sessions).

3.2.5 Scalability

The system is designed to accommodate:

- Increased users (students, faculty, admins).
- Future modules, such as payment systems. analytics or integrations with university systems.

3.3 Interaction Design and User Experience (UX)

This design of the interaction is to focus on allowing the users to perform their jobs in the shortest time possible with maximum efficiency, irrespective of their technical expertise in computers.

3.3.1 Navigation and User Experience

- **Role-Based Navigation:** Menus show only the functions relevant to a logged-in user's granted role.
- **Breadcrumbs :** serve to guide the user on his position in the system.
- **Smoothed Workflows:** The user journeys through each type of intended role have been smoothed to avoid unnecessary actions

3.3.2 Feedback and Notifications

- **Real-Time Notifications Example:** "Schedule Add/Update/Delete successfully." "Sent Mail Successfully !"
- **Error Messages :** Using terse but action-oriented syntax, for **example:** "Invalid Username or password ", "Password must be 8 character",
- **Progress Indicators:** Utilize a loading spinner as feedback on a loading state when the user is performing some kind of action, **save**, **delete**, etc.

3.3.3 Mobile-first Approach

- Designed with a mobile top strategy ,ensuring seamless usability on smartphone while maintaining fully functionality on large screen

3.3.4 Testing for Usability

- Conduct with student ,faculty,and admin to optimize workflows and comprehensive user satisfaction

3.3.3 Consistency and Accessibility

- **Standardized Visual Design:** Color palettes, typography, and button design create harmony in the interaction of the user through and with the website.
- **Accessibility:** Conformity to the WCAG ratio of contrast, this is readable with screen readers.

3.4 Implementation Requirements

3.4.1 Front-End Tools

- **HTML5, CSS3, Bootstrap 5 (CSS Framework) :** provide an interactive and responsive user interface UI.
- **JavaScript & jQuery:** Adding dynamics for behavioural interactivity.

3.4.2 Back-End Tools

- **Laravel Framework:** Provides a secure and extensible application development platform.
- **MySQL Database:** Used for storing all entities as structured data at one place.

3.4.3 Hosting and Deployment

- **Hosting Platform:** Managed in a secured shared or internet hosting environment
- **Version Control:** The GitHub used for collaboration, version tracking.

- **Deployment Tools:** The Artisan commands for migrations, the setting of up the server in Laravel.

3.4.4 Development Environment

- **Code Editor:** Visual Studio Code with the extension to develop in Laravel.
- **Local Server:** XAMPP or the inbuilt server of Laravel for testing and debugging.

Chapter 4: Implementation and Testing

4.1 Database Implementation

4.1.1 Database Design

The database was designed to ensure optimal relational mapping between entities. Key entities include with relationships defined by primary and foreign keys

Table name	Column name
User	User_id , name , email , password , role_id
Role	role_id (PK), role_name
User Role	user_id (FK), role_id (FK)
Permission	permission_id (PK), permission_name
Role Has Permission	role_id (FK), permission_id (FK)
Student	student_id (PK), name, id_no, email, blood, phone, address, batch_id (FK)
Batch	batch_id (PK), batch_name
Faculty	faculty_id(PK),name,email,designation,media-link,phone,address
Alumni	alumni_id (PK), name, image,pass_year, organization, designation phone, email, address, batch_id (FK), student_id (FK),
Scholarship	scholar_id (PK), image, name, country, email,duration, batch_id (FK), student_id (FK)
Course	course_id (PK), course_name, course_code, credit, semester_id (FK)
Semester	semester_id (PK), semester_name
Routine	routine_id (PK), semester_id (FK), file
Schedule	schedule_id (PK), room_no, day, start_time, end_time, course_id (FK), faculty_id (FK)
Event	event_id (PK), name, image, date, time, location, description
Staff	staff_id (PK), image, name, email, position, contact

Communication	communication_id (PK), location, phone, email, facebook, linkedin, twitter
Contact Message	contact_id (PK), name, email, subject,message

4.1.2 Data Security

To maintain data integrity and confidentiality:

- **Encryption:** User's passwords were hashed by bcrypt.
- **Access Control:** Role-based access permissions for sensitive data are restricted.
- **Backup Mechanisms:** Regular backups were implemented in order not to lose data.

4.1.3 Optimization

- Indexing was conducted on the usually queried columns for enhancement in retrieval speed.
- Normalization has been used to avoid data redundancy and achieve best storage.

4.1.4 Sample Data Population

Sample data is inserted based on general case testing of the system, which includes students, faculty, course schedules, and users of the system.

Example: Admin and student,faculty accounts, a set of courses, and schedules.

4.2 Frontend Implementation

4.2.1 Technology Used

- ✓ HTML5
- ✓ CSS3
- ✓ Bootstrap 5
- ✓ JavaScript & jQuery

4.2.2 Key UI Components

- **Dashboard:** Show vital statistics such as total students, faculty, Alumni, and Scholarship numeric.
- **Form Components:** Simplified data input for student and faculty registration.
- **Interactive Models:** Used for creating, updating, and deleting records seamlessly.

4.2.3 Responsive Design

Optimized the interface for cross-device compatibility: Ensuring usability on desktops, tablets, and smartphones using media queries and Bootstrap grid systems have been used. Test-friendly interface across devices

4.2.4 Interactivity and UX Features

- Smoother navigation because of AJAX-based content updates.
- Success and Error notifications by the means of modals/toast messages..
- Role-based UI rendering, ensuring users only see features relevant to them

4.3 Backend Implementation

4.3.1 Technology Tools

- ✓ **Laravel Framework - PHP:** To implement the backend logic; it also provides MVC Architecture: Repository Design Pattern
- ✓ **Database (MySQL):** : This refers to the original database management system.
- ✓ **Spatie Permissions Package:** Handles role and permission management

4.3.2 Major UI Components

4.3.3 Core Functionalities

- **Authentication and Authorization:**
 - Laravel's built-in authentication system-Auth.
 - Role-based access by using middlewares: isAdmin, isFaculty.
- **CRUD Operations:**
 - Also implement Create, View, Update, and Delete for all major entities: course, student, schedule, notice.
- **Email Queue:**
 - Use Laravel Queues for batch-wise email sending to students or faculty.
- **Real-Time Notifications:**
 - Use Laravel's broadcasting and Pusher (or WebSockets) for real-time updates.

4.3.3 Middleware and Error Handling

```
public function handle(Request $request, Closure $next): Response
{
    if (Auth::check()) {
        /** @var App\Models\User */
        $user = Auth::user();
        if ($user->hasRole(['super-admin', 'admin', 'faculty', 'student'])) {
            return $next($request);
        }
        abort(403, "User does not have correct roles");
    }
    abort(401, "Unauthorized");
}
```

- Middleware ensures authentication and access control.
- Custom error pages handle application errors gracefully.

4.4 Interaction Mechanisms

4.4.1 Role-based Interactions

Every user role will interact with the system based on their predefined permissions:

4.4.1.1 Super Admin Interactions

- Manages User accounts: provides role assign like Admin, Faculty, Student, Alumni.
- Configures system-wide settings and enforces role-based access control.

- Oversees the security and overall health of the website..

4.4.1.2 Admin Interactions

- Provides addition and updates of faculty profiles with their course and schedule linkages.
- Maintains records of students, such as batch assignments and profile updates.
- Develops and revises course schedules to resolve conflicts in scheduling.
- Manages scholarships: application reviews and results of the selection process.
- Posts notices regarding faculty, students, and alumni on the notice board.
- Sending e-mails to the concerned student or batch-wise or manually regarding official communications.

4.4.1.3 Faculty Interactions

- Provides access to course scheduling,routine,maling,notices and its details through the dashboard.
- Maintains and updates class content for several courses..
- Update his profile information, including contact information.

4.4.1.4 Student Interactions

- View the dashboard: personal schedule, course ,routines.
- Applies for scholarships and views application results online.
- View notices posted by admins or faculty.

4.5 Integration and Deploying

4.5.1 Integration

- APIs are used to implement sending emails for targeting and batch communication.
- The frontend talks to the backend using secure AJAX calls.

4.5.2 Deployment

- Deployed on a **Linux-based web server** with SSL encryption to ensure secure transactions.

4.6 Security Implementation

- **CSRF Protection:** Ensures forms are protected from cross-site request forgery.
- **Authentication:** JWT tokens were used to secure APIs.
- **Validation:** Input data is validated to prevent SQL injection and XSS attacks.

4.7 Key Challenges and Solutions

Challenge	Solution
User role mismanagement	Streamlined roles and permission using laravel's Spatie package
Handling simultaneous course schedule	Developed a validation mechanism to prevent overlapping schedules
Data conflicts in schedule creation	Implemented conflict detection algorithms during schedule generation
Managing large user dataset	Implemented server-side pagination for faster data rendering

4.8 Testing Features :

- Registration
- User Login
- Faculty Management
- Student Management
- Routine Management
- Send Email (Batch-Wise Student or Manual Input)
- Course Management
- Staff Management
- Notice Board Management

4.8.1 Testing Approach

1. The whole system will be tested manually step by step to identify and resolve any issues.
2. System testing will involve user acceptance validation to ensure it meets end-user requirements.
3. All administrative functionalities will be thoroughly tested to confirm entire system

4.8.2 Pass/Fail Criteria

1. Component Pass/Fail criteria– The test will pass if the case meet the object designed requirements of fail if not
2. Integration Pass/Fail criteria– The test will pass if the case meets the object design architecture or fails if not.

4.8.3 Suspension and Resumption

1. Regression Testing- The system should work properly after each change on the system.
2. Database change- The system will not work properly if we change the database name.
3. Build Acceptance Test- The system will test after every build
4. System Design- The system should work properly after each change in the design

4.8.4 Testing Strategy

- **Manual Testing:** Each feature was tested against predefined scenarios.
- **Unit Testing:** Backend functionality was validated with Laravel's testing tools.

4.8.5 Testing Schedule

Table 10.5: Testing Schedule (Developer Form)

Test Phase	Times
Test Plan Creation	1 weeks
Test specification creation	1 weeks
Test specification review	1 weeks
Component testing	2 weeks
Integration Testing	1 weeks
System Testing	2 weeks

4.8.6 Test Cases

Below are some key test cases:

Test Case	Objective	Expected Outcome	Status
TC001: User Registration	User Management	A user can register successfully with valid inputs. An error message is shown for invalid or duplicate inputs	√ Pass
TC002: User Login	User Authentication	A registered user can log in with correct credentials. Invalid credentials show an appropriate error message.	√ Pass
TC003: Student Dashboard	Student Management	Students can view enrolled courses, schedules, and notices. Unauthorized sections are restricted.	√ Pass
TC004: Faculty Dashboard	Faculty Management	Faculty members can access assigned courses and schedules. Unauthorized actions are blocked	√ Pass
TC005: Add Course	Course Management	Admin can create ,update ,and delete course	√ Pass
TC006: Routine	Routine Management	Admin creates a routine without conflicts. Conflict errors are shown for overlapping schedules.	√ Pass
TC007: Post Notice/Event	Notice and Event	Admin or Faculty posts notices/events. They are displayed correctly to the intended users.	√ Pass
TC008: Email Notifications	Email System	Admin sends emails to specific students or groups. Emails are delivered successfully.	√ Pass

4.8.6.1 Test Case 01 :

Registration

Text Case : 01	Text Case Name : Registration
Component : Registration	Sub Component : N/A

Design By : Roman Oze (211-51-043)	Design Date : 20-03-2024
Executed By : Roman Oze	Execution Date : 9-11-2024

Table 4.8.6.1: User Registration

Step	Action	Pass / Fail	Comments
1	Click on register button	Pass	N/A
2	Fill required fields and choose role submit	Pass	Register Successfully
3	Leave a required field empty	Fail	Error: required fields empty

4.8.6.2 Test Case 02:

User login

Text Case : 02	Text Case Name : User login
Component : User login	Sub Component : N/A
Design By : Roman Oze (211-51-043)	Design Date : 22-03-2024
Executed By : Roman Oze	Execution Date : 10-11-2024

Table 4.8.6.2: User login

Step	Action	Pass / Fail	Comments
1	Input valid credentials	Pass	Login successfully
2	Input incorrect password / email	Fail	Error:Invalid try again
3	Leave fields blank	Fail	Error: fields are empty

4.8.6.3 Test Case 03:

Student management

Text Case : 03	Text Case Name : Student management
Component : Student management	Sub Component : N/A
Design By : Roman Oze (211-51-043)	Design Date : 25-03-2024
Executed By : Roman Oze	Execution Date : 12-11-2024

Table 4.8.6.3: Student management

step	Action	Expected Result	Pass/Fail	Comments
1	Register new student	Student is registered successfully	Pass	N/A
2	Update student info	Change are save to the database	Pass	N/A
3	Delete student data	Student remove from Database	Pass	N/A

4.8.6.4 Test Case 04:

Faculty management

Text Case : 04	Text Case Name : Faculty management
Component : Faculty management	Sub Component : N/A
Design By : Roman Oze (211-51-043)	Design Date : 12-04-2024
Executed By : Roman Oze	Execution Date : 13-11-2024

Table 4.8.6.4: faculty management

step	Action	Expected Result	Pass/Fail	Comments
1	Add a new faculty	Faculty add successfully	Pass	N/A
2	Edit information	Faculty info Updated	Pass	N/A
3	Delete faculty	Faculty remove from DB	Pass	N/A

4.8.6.5 Test Case 05:

Course management

Text Case : 05	Text Case Name : Course management
Component : Course management	Sub Component : N/A
Design By : Roman Oze (211-51-043)	Design Date : 17-04-2024
Executed By : Roman Oze	Execution Date : 14-11-2024

Table 4.8.6.5: Course management

step	Action	Expected Result	Pass/Fail	Comments
1	Add a new course	Course add successfully	Pass	N/A
2	Update course info	Changes are saved	Pass	N/A
3	Delete a course	Course is remove from BD	Pass	N/A

4.8.6.6 Test Case 06:

Routine management

Text Case : 05	Text Case Name : Routine management
Component : Routine management	Sub Component : N/A
Design By : Roman Oze (211-51-043)	Design Date : 17-04-2024
Executed By : Roman Oze	Execution Date : 14-11-2024

Table 4.8.6.6: Routine management

step	Action	Expected Result	Pass/Fail	Comments
1	Add a new routine	Routine add successfully	Pass	N/A
2	Update routine info	routine are saved	Pass	N/A
3	Delete a routine	routine is remove from BD	Pass	N/A

4.8.6.7 Test Case 07:

Send Mail

Text Case : 07	Text Case Name : Send Mail
Component : Send Mail	Sub Component : N/A
Design By : Roman Oze (211-51-043)	Design Date : 25-05-2024
Executed By : Roman Oze	Execution Date : 17-11-2024

Table 4.8.6.7: Send Mail

step	Action	Expected Result	Pass/Fail	Comments
1	Select Batch wise email	Email is sent successfully	Pass	N/A
2	Send manual	Email is sent successfully	Pass	N/A
3	Delete a notice	Error message is displayed	Pass	N/A

4.8.6.8 Test Case 08:

Notice Board , Event management

Text Case : 08	Text Case Name : Notice Board , Event management
Component : Notice Board , Event management	Sub Component : N/A
Design By : Roman Oze (211-51-043)	Design Date : 05-06-2024
Executed By : Roman Oze	Execution Date : 19-11-2024

Table 4.8.6.8: Notice Board , Event management

step	Action	Expected Result	Pass/Fail	Comments
1	Post a new notice/Event	Routine is display in dashboard & public page	Pass	N/A
2	Edit an existing notice	Changes are reflected on the board	Pass	N/A
3	Delete a notice	Notice / Event is remove from the board	Pass	N/A

5: Conclusion and Future Scope

5.1 Conclusion

ITM Departmental Website is an energetic and a fully functional channel, which is planned to meet diversified needs of operation, academics, and communication relating to the Department of Information Technology and Management. It also means the integration of all the major functionalities required at the department level: it has the facility of faculty management, students' management, course and routine scheduling, scholarship tracking, alumni interactions, and Real-Time Notice Board.

This project has a very important feature: a role-based access system where super-admin, admin, and faculty permissions are granted to securely manage respective functionalities. Advanced e-mail systems and responsive design make the user experience and accessibility on all devices even better.

Built with state-of-the-art technologies like Laravel, MySQL, and Bootstrap, the website will be robust, scalable, and secure. In practice, the user-friendly interface facilitates easy navigation, and the system will be modularly designed to accommodate any future plans for enhancement with AI analytics or interfacing with other departmental systems.

Thus, the ITM departmental website will be able to play its role of being a one-stop, effective, and user-centric solution provider to the needs of the departments with utmost perfection. This will not only smoothen the present operations but also act as a stepping stone for future developments and innovations within the ITM department.

Financial Statement

ITM Departmental Website Project

Frontend Development

- Visual layout and design
- Responsive for all devices
- Style with modern standards

Cost: BDT 20,000

Backend Development

- Server-side logic
- Database integration
- Secure and scalable

Cost: BDT 30,000

UI/UX Design

- User-friendly interface
- Smooth navigation
- Enhanced user experience

Cost: BDT 15,000

Integration & Testing

- Combine all components
- Fix bugs and errors
- Ensure functionality

Cost: BDT 7,000

Domain Registration

- Annual cost
- Unique domain name
- Brand recognition

Cost: BDT 1,000

Web Hosting

- Reliable server
- 24/7 uptime
- Annual hosting

Cost: BDT 4,000

SSL Certificate

- Data encryption
- Secure connections
- Build trust

Cost: BDT 1,500

Maintenance & Support

- Regular updates
- Technical support
- Bug fixes

Cost: BDT 10,000

Grand Total: BDT 91,500

5.2 Future Scope

The current ITM website is designed to meet major requirements within the department but can do more to further extend the reach of this. Features useful, focused, and thus recommended for future development include:

1. **Mobile Application Development:**

- Provide a mobile app-ITM on both iOS and Android to access the online platform conveniently by students, faculty, and staff.

2. **e-Examination and Assignment Submission System:**

- Set up online quiz, assignment, and examination modules in a secured environment for both in-classroom and remote learning needs.

3. **Alumni Networking Platform :**

- Improved Alumni Utilization: Incorporate a lot of functionalities such as alumni directory, mentoring modules, job posting boards, etc.

4. **Dynamic Event Management System:**

- Introduce the departmental event management module that provides students and faculty the facility to create registrations, schedules, and notifications.

5. **Project and Thesis Proposal System:**

- Build a system for students to submit project and thesis proposals, assign supervisor and co-supervisor also they can provide feedback through this system and enable faculty review and tracking. This will streamline the research process and encourage academic innovation.

6. **CGPA System:** student will be able to see they're semester wise and average CGPA , SCGPA ,

7. Feedback Collection System:

- Create a feedback module for gathering suggestions and insights from students, faculty, and alumni to continuously improve the platform.

8. Increased Safety Features:

- Introduce advanced security measures such as multi-factor authentication and robust data encryption to ensure the safety of user information.

9. AI-Driven Notifications and Recommendations:

- Provide AI for personalized notifications of deadlines, events, and academic resources, personalized by user behavior and expressed preferences.

Chapter 6: Appendix

LIVE Project : <https://www.diu-itm.sglglobalsoft.com>

Repository : https://github.com/Roman-oze/ITM_website

Link : https://drive.google.com/file/d/1M7qC7x9e-rkUC4trwVpCgRGNEbVLcRWb/view?usp=drive_link

6.1 System Design

6.1.1 Landing Page



DEPARTMENT OF ITM



Why Choose Us?

"Education is the most powerful weapon which you can use to change the world." This program provides you with a unique opportunity to earn a BSc in Information Technology and Management. In the field of Information Technology and Management, the job possibilities are almost endless. The major goal of the discipline, which is now unique in our nation, is to integrate information technology with business intelligence. We also intend to secure financial systems on the cloud...

Information	<ul style="list-style-type: none"> ✓ Innovative Curriculum: Our program integrates cutting-edge information technologies and prepares students for the latest industry trends. ✓ Hands-On Experience: Engage in real-world projects, internships, and practical training with information systems and data management.
Technology	
Management	



STUDY ABROAD

Undergrad
Abroad
Specialists

Facilities List

- 📄 Scholarship
- 📄 Internship
- 📄 Job
- Apply

SERVICE

Our service 24 hours open for our Student

<p>Google Classroom</p> <p>Google Classroom simplifies learning and teaching by providing a centralized platform for assignments, feedback.</p>	<p>iCard</p> <p>Download the iCard Android app and iOS app. All services are available within this app.</p>	<p>Student Portal</p> <p>Payment, result, transport, clearance, and all services are provided by the student portal.</p>	<p>BLC</p> <p>course enrollment get feature study roadmap with quiz assignments presentations!</p>
---	---	--	--


Home Admission Students Course Faculty Members Routine Contact [Online Apply](#) [Login](#)

Our Facilities

- 100% Waiver
- Free Laptop
- Hall
- Latest Curriculum
- Innovation
- 35+ Club
- Transport
- DIU Recruitment
- E-Library
- Rover Scout
- Global Networking
- Life Insurance

Home Admission Students Course Faculty Members Routine Contact [Online Apply](#) [Login](#)

UPCOMING




orientation

must participant all student

🕒 10:30:00

📅 2024-09-10

📍 DIU Smart City ,savar



ITM Summit 2024

must participant all


🕒 10:00:00

📅 2024-09-25


📍 DIU Smart City ,savar

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ALUMNI




MD Amir Hamza
Executive -Reservation



Md.AI Hasibur Rahman
Customer sales coordinator



Mahfuzur Rahman
Case Analyst



Farjana Akter Tethi
Business Analyst



FACULTY

"Empowering innovation, inspiring success – Meet the visionary faculty of the Department of Information Technology & Management at Daffodil International University!"



Ms. Nusrat Jahan
Assistant Professor & Head

Show Details



Dr. Bimal Chandra Das
Associate Dean & Professor

Show Details



Dr. Ashikur Rahman
Lecturer (Senior Scale)

Show Details



Nafees Imran
Lecturer

Show Details



Raisul Kabir News
Lecturer

Show Details



Ms. Moni Akter
Lecturer

Show Details



SCHOLARSHIP



Roman oze
China
🎉 Congratulations!



Roman
Hong Kong
🎉 Congratulations!

Notice Board

Old Notice

Project Documentation

September 3, 2024, 6:28 pm

Attention please! all of student need submit Software documentation PDF / Doc file to head of department tomorrow day

New Notice

Final Examination Fall-2024

December 4, 2024, 1:15 pm

Before attend the exam must be paid duo ,Already provided Routine PDF individually through Email , Please Check

[Course List](#)

Course Details

"Unlock your potential with our expertly designed academic courses - where knowledge meets opportunity, and learning transforms into success!"

- [Course Category](#)
[1st Semester](#)
[2nd Semester](#)
[3rd Semester](#)
[4th Semester](#)
[5th Semester](#)
[6th Semester](#)
[7th Semester](#)
[8th Semester](#)

Course List

(ITM 321)	(Software Documentation)	3 Credits
(ITM 401)	(Research Methodology)	3 Credits
(ITM 452)	(Thesis/ Project)	6 Credits

Total Credits: 12


CONTACT

Ready to take your financial management to the next level? Contact us today for personalized consultation and discover how our expertise can empower your business growth. Let's navigate your financial journey together towards success.

Location:
AB-4-Building, Khagan, Ashulia, Dhaka

Email:
itmoffice@daffodilvarsity.edu.bd

Call:
01847140039



Your Name

Your Email

Subject

Message

[Send Message](#)

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(ITM)

AB-4 Building (6th Floor), Khagan, Ashulia, Dhaka.
Phone: +01847140039 55
Email: itmoffice@daffodilvarsity.edu.bd

Useful Links

- > Home
- > About us
- > Services
- > Contact Us

Our Services

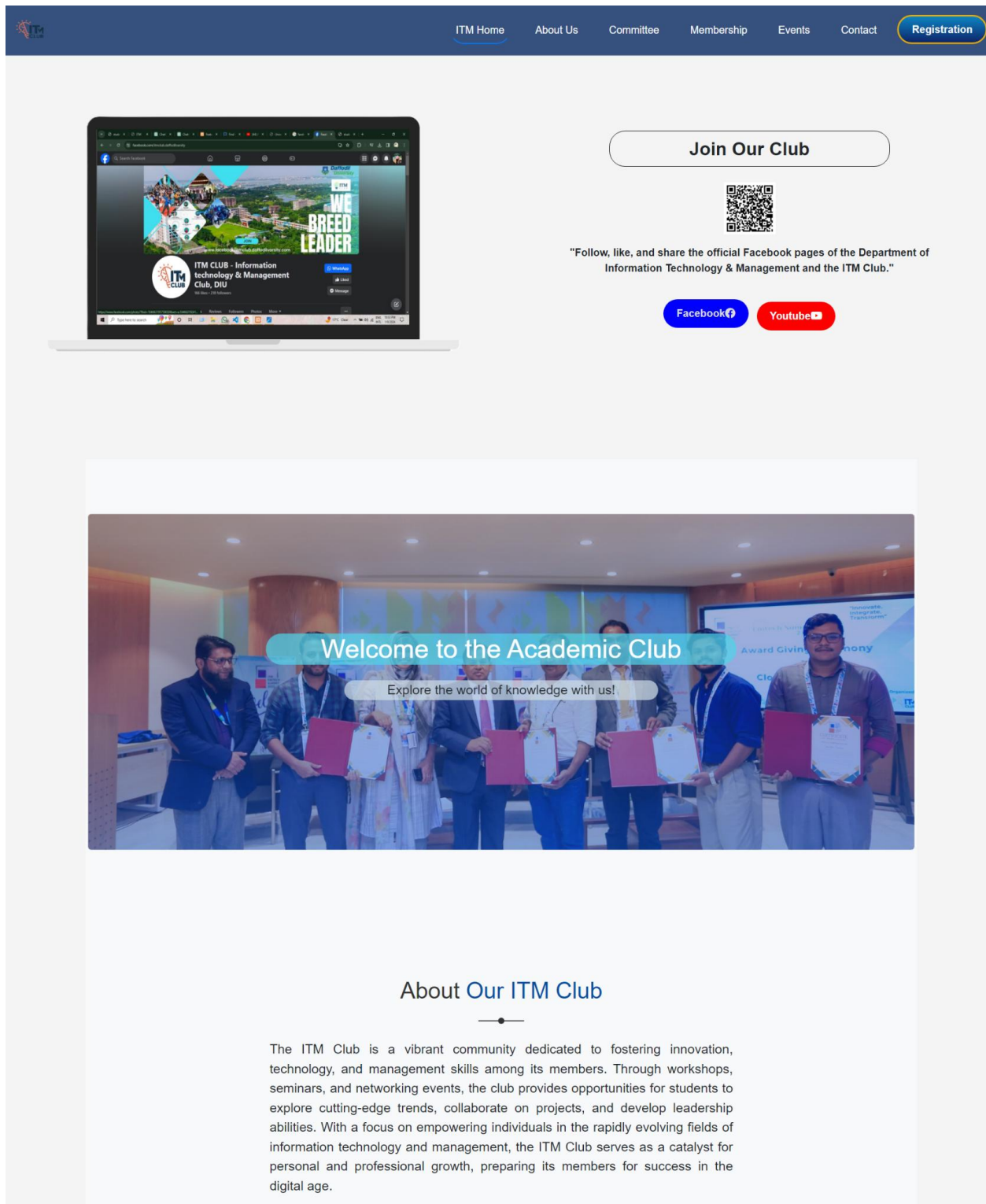
- > Tuition fees
- > Download Course
- > Reporting
- > Feature

Our Social Networks



Figure 6.1.1.1 : Home page

ITM-Club Landing page: “Departmental Activity and Event,Committee,Gallery”



ITM Home About Us Committee Membership Events Contact [Registration](#)

Join Our Club

Follow, like, and share the official Facebook pages of the Department of Information Technology & Management and the ITM Club.

Facebook Youtube

Welcome to the Academic Club

Explore the world of knowledge with us!

About Our ITM Club

The ITM Club is a vibrant community dedicated to fostering innovation, technology, and management skills among its members. Through workshops, seminars, and networking events, the club provides opportunities for students to explore cutting-edge trends, collaborate on projects, and develop leadership abilities. With a focus on empowering individuals in the rapidly evolving fields of information technology and management, the ITM Club serves as a catalyst for personal and professional growth, preparing its members for success in the digital age.

Figure 6.1.1.2 : Club Home page

6.1.2 Dynamic Dashboard

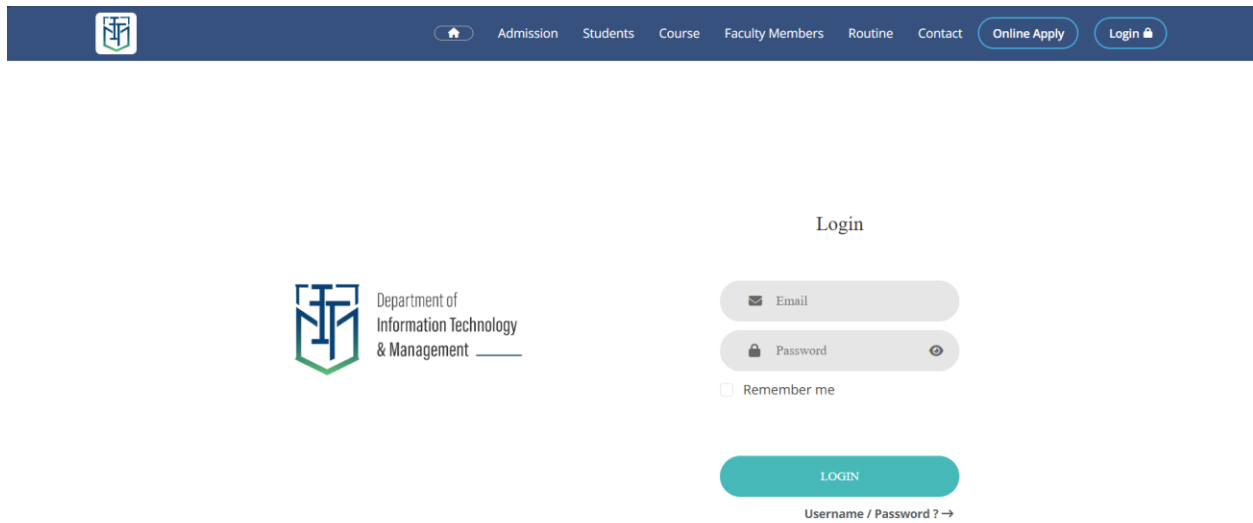


Figure 6.1.2.1: Use login page

Access Flow: **Super-Admin** , **Admin** Role based access functionality

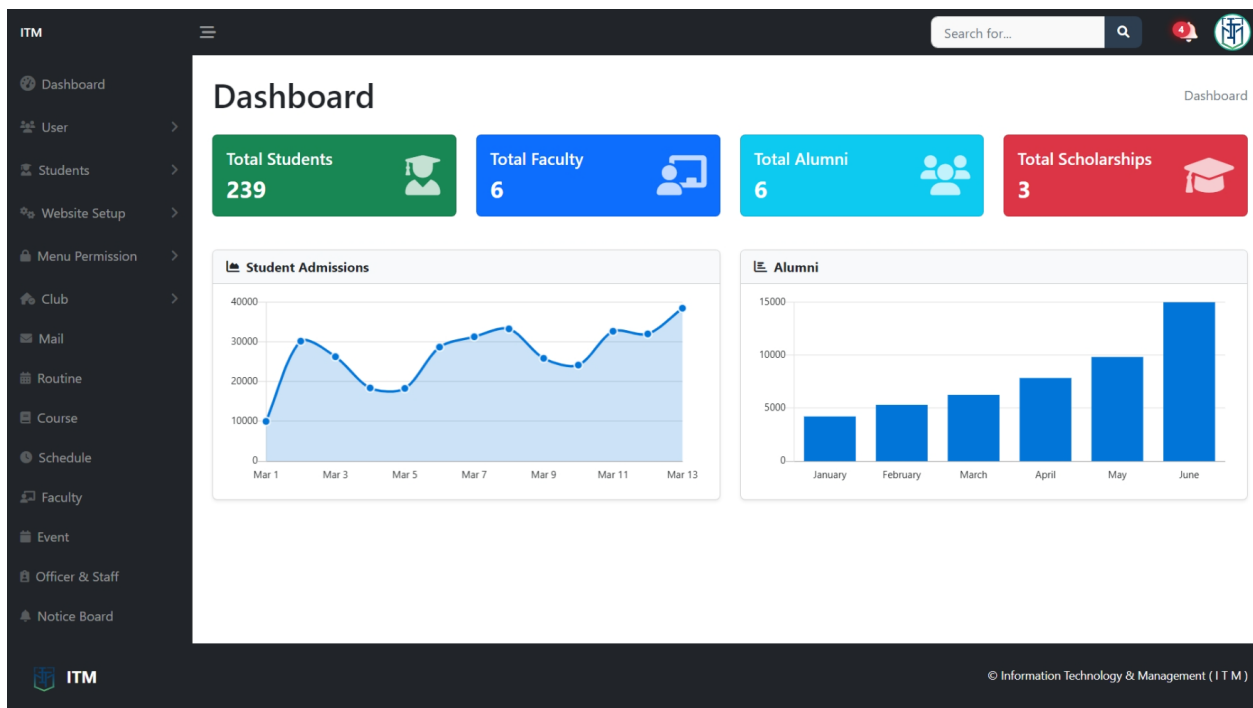


Figure 6.1.2.2: Super-Admin , Admin , Dashboard

Access Flow: “Faculty Dashboard Features”

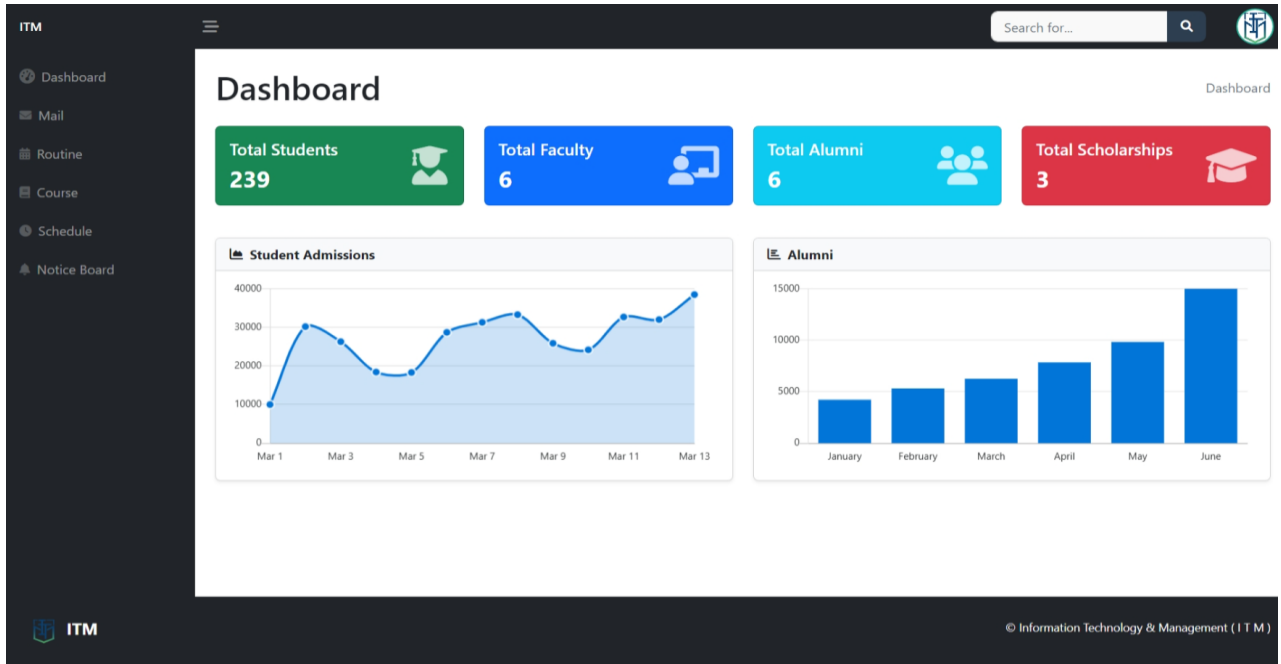


Figure 6.1.2.3: Faculty, Dashboard

Access Flow: “Students Dashboard Features”

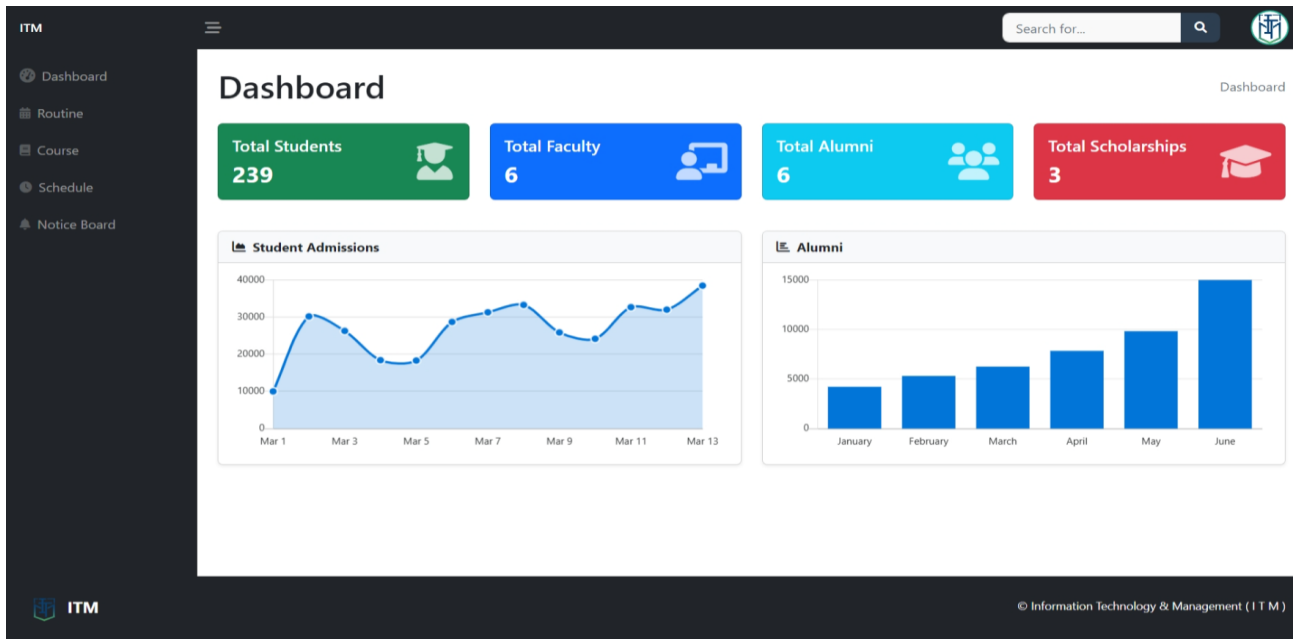


Figure 6.1.2.4 : Student , Dashboard

Access Flow: Admin can access → User →Add User → Registration

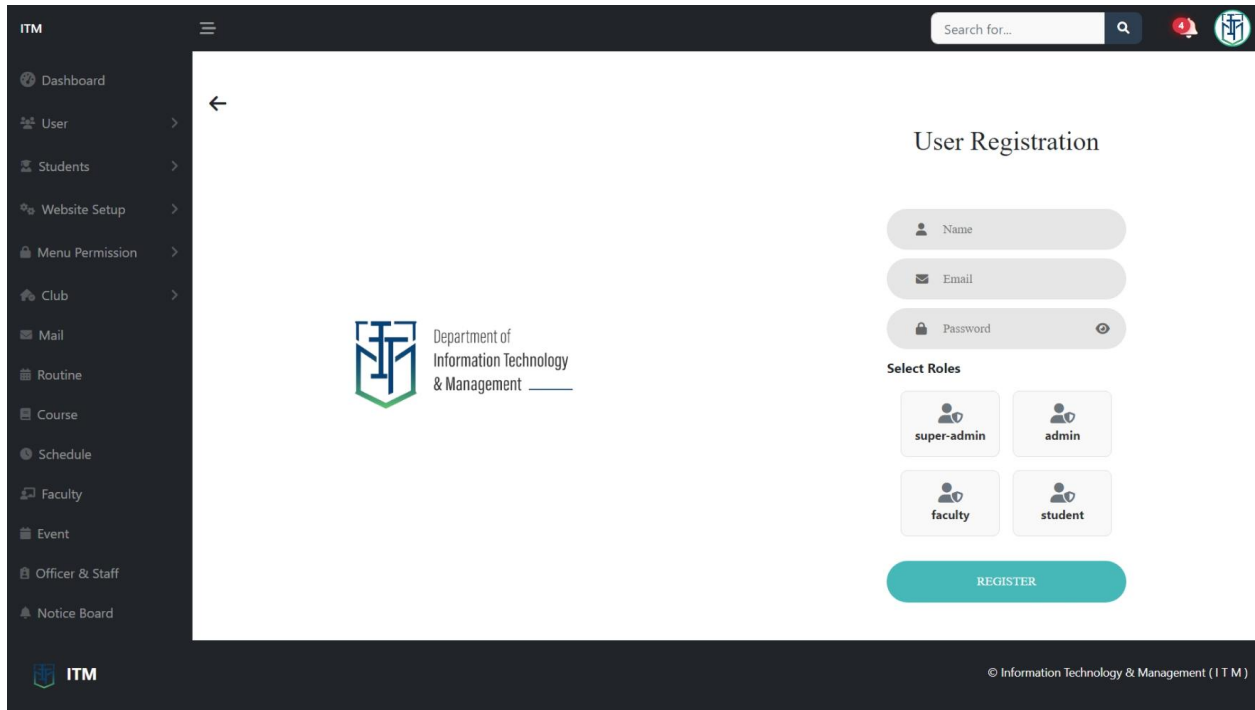


Figure 6.1.2.5 : Only the Super-Admin can create users with specific roles.

Access Flow: Admin can access → User →Add User → Registered→Redirect→User Index page

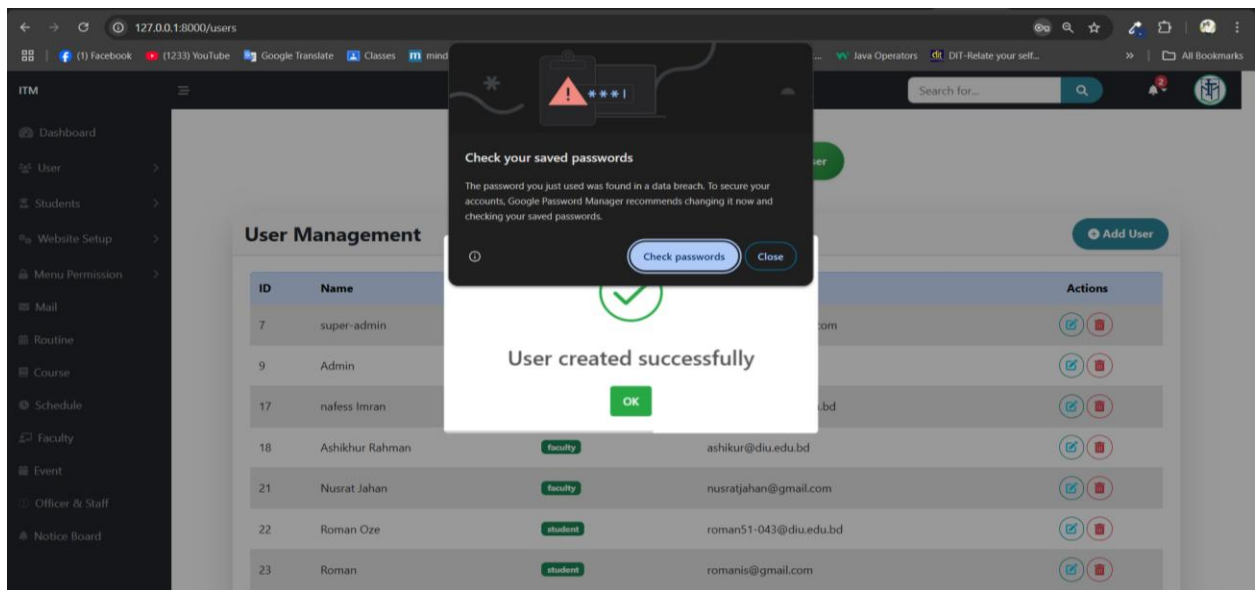


Figure 6.1.2.6 : Registered User Add within Index page and Database **Display:** User created Successfully

Access Flow: Admin can access → User → Admin → Permission → Index page

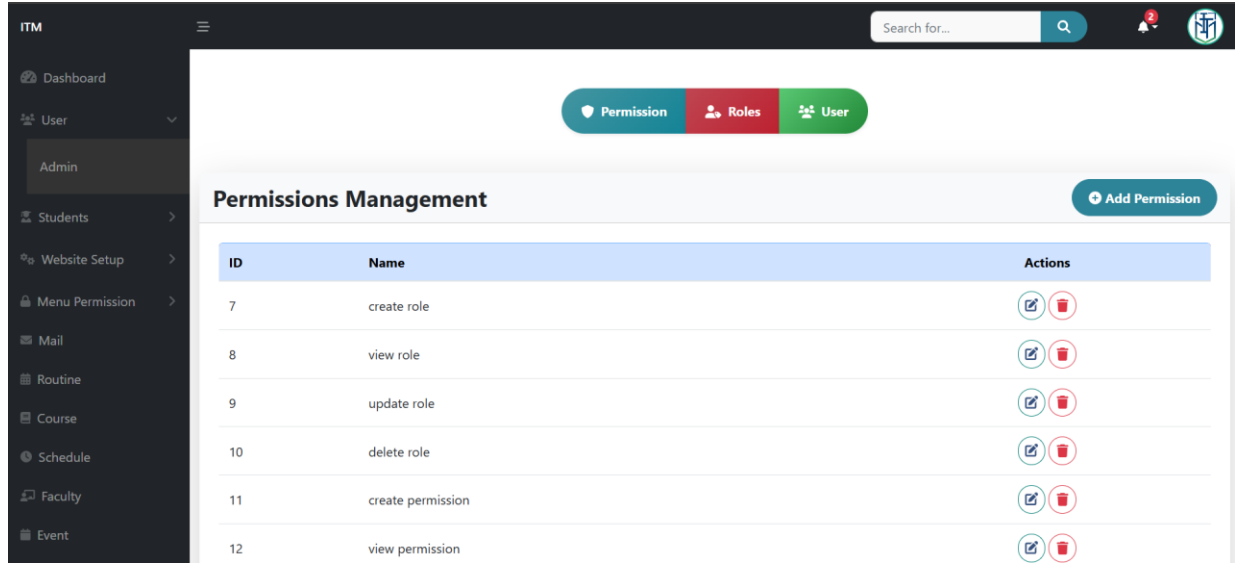


Figure 6.1.2.7 :Only Admin can access **Edit / Delete**

Access Flow: Admin can access → User → Admin → Permission → Add Permission

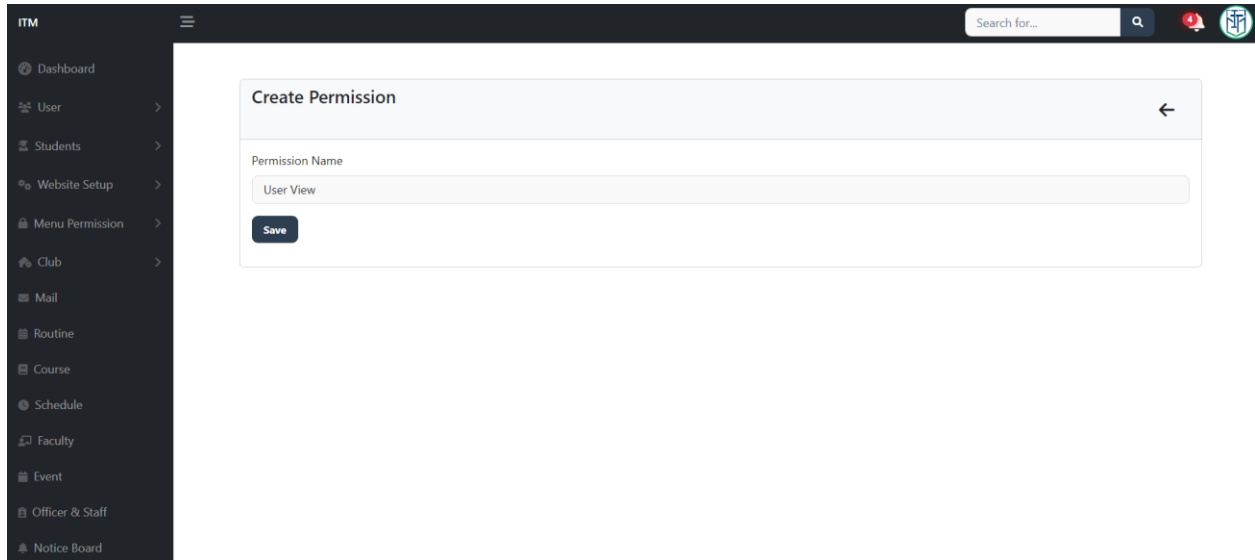


Figure 6.1.2.8 :Add in Index page and Database **Display** Permission added Successfully

Access Flow: Admin can access → User → Admin → Permission → Click → Delete (Button)

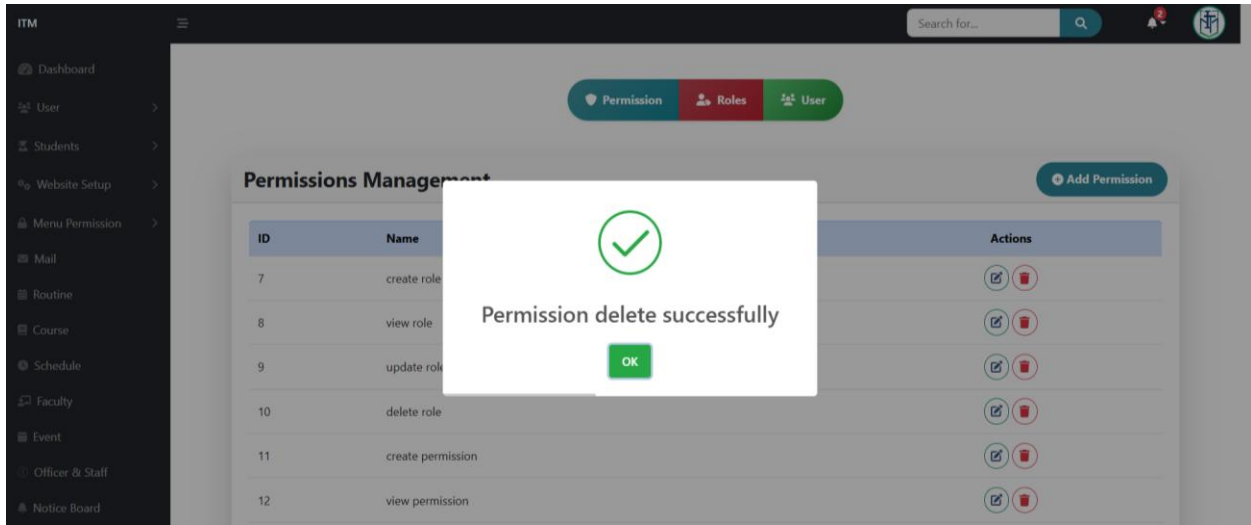


Figure 6.1.2.9 : Delete from Index page and Database **Display** Permission Delete Successfully

Access Flow: Admin can access → User → Admin → Role → Index Page

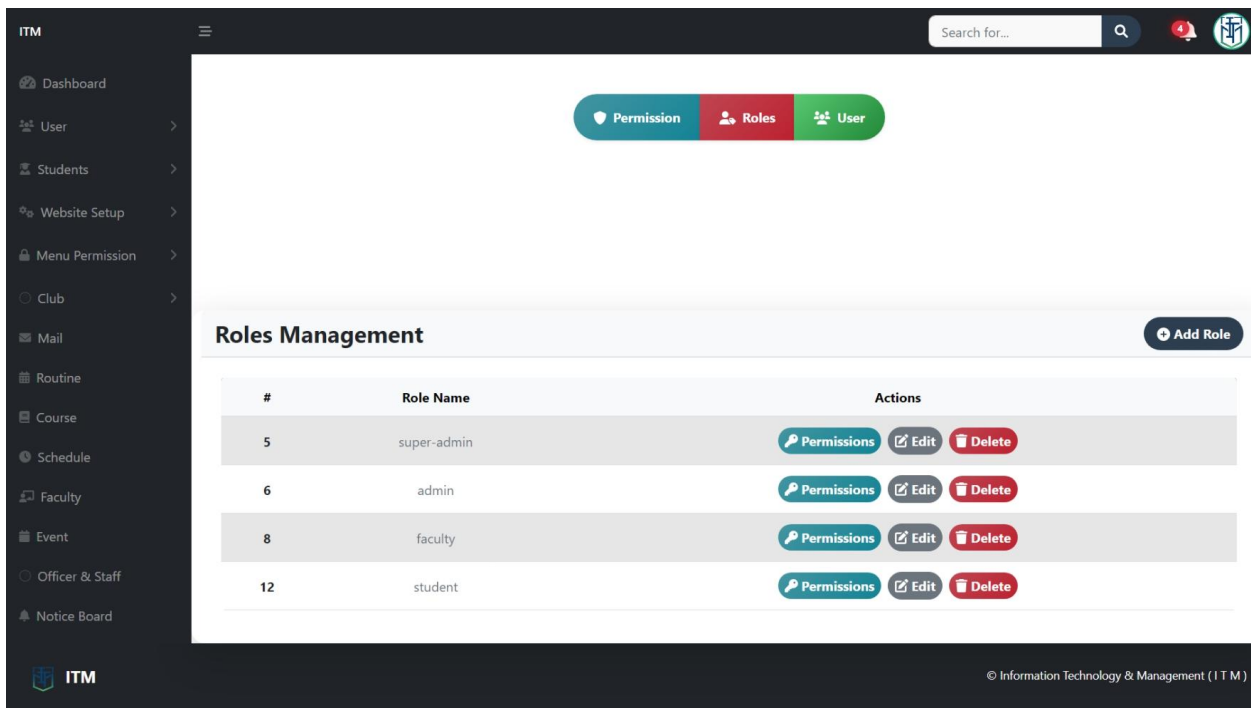


Figure 6.1.2.10 : Only Admin can access / [Permission](#) / [Edit](#) / [Delete](#)

Access Flow: Admin can access → User → Admin → Role → Assign → Checkbox → Role Permission

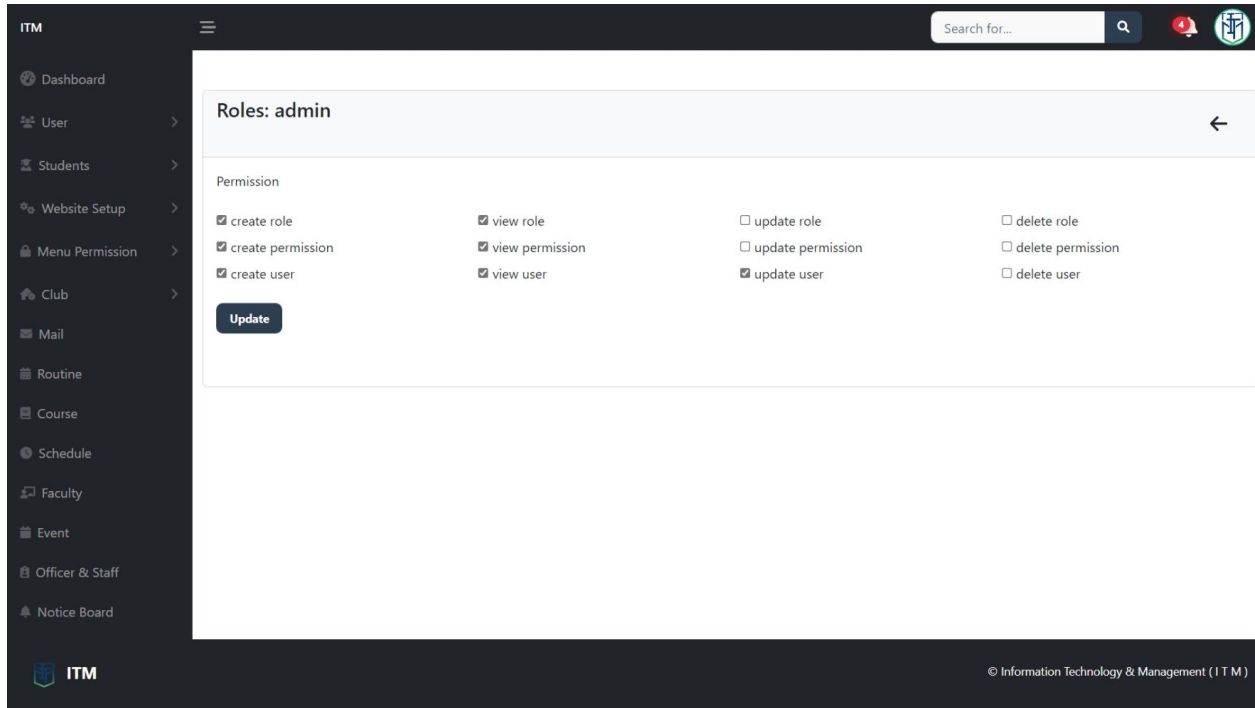


Figure 6.1.2.11 :Only super-admin can assign role permission

Access Flow: Admin can access → Faculty → Index Page

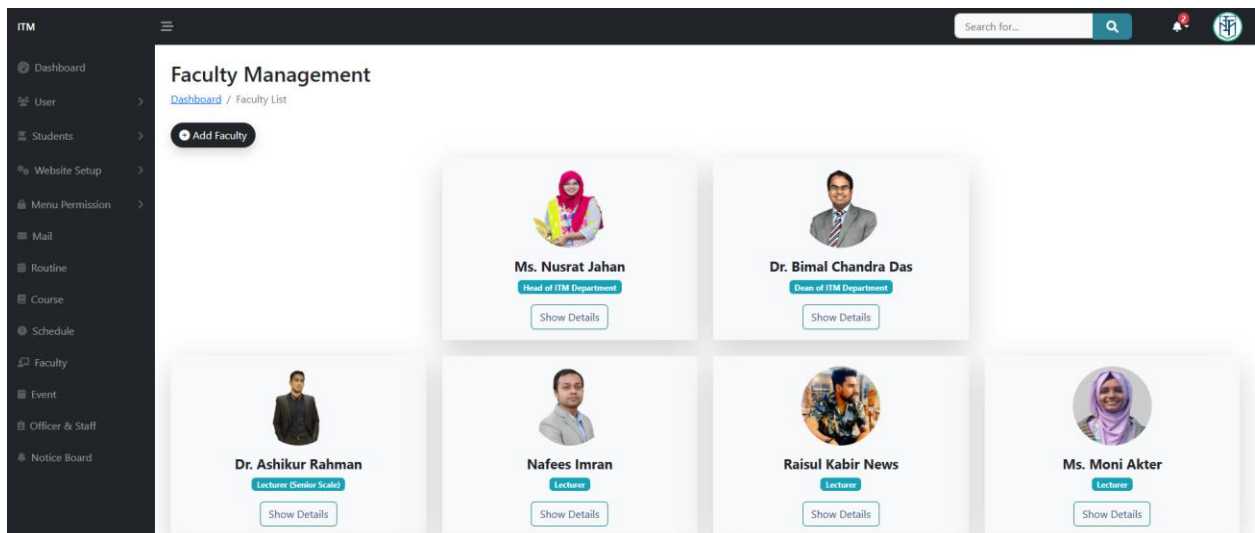


Figure 6.1.2.12 :Only Admin can access Edit / Delete

Access Flow: Admin can access → Faculty→ Index Page→ Edit

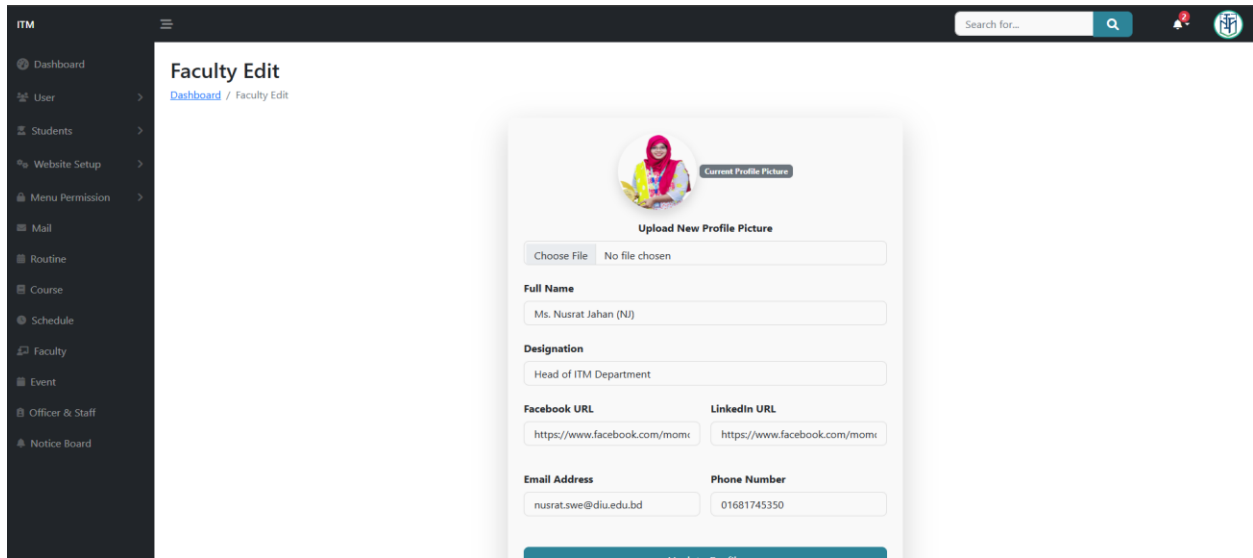


Figure 6.1.2.13 : Only admin can update faculty Information

Access Flow: Admin can access → Faculty→ Index Page→ Edit→Redirect→Index page

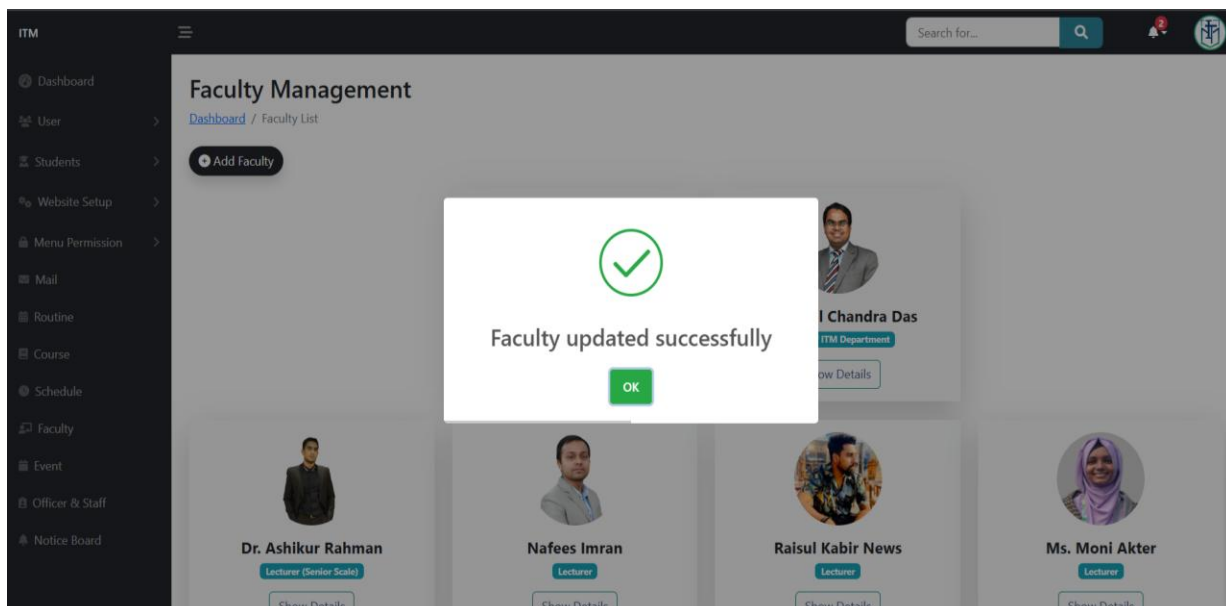


Figure 6.1.2.14 : Update from Index page and Database **Display** Faculty UpdateSuccessfully

Access Flow: Admin can access → Faculty→ Index Page→ Click→Show (Button)

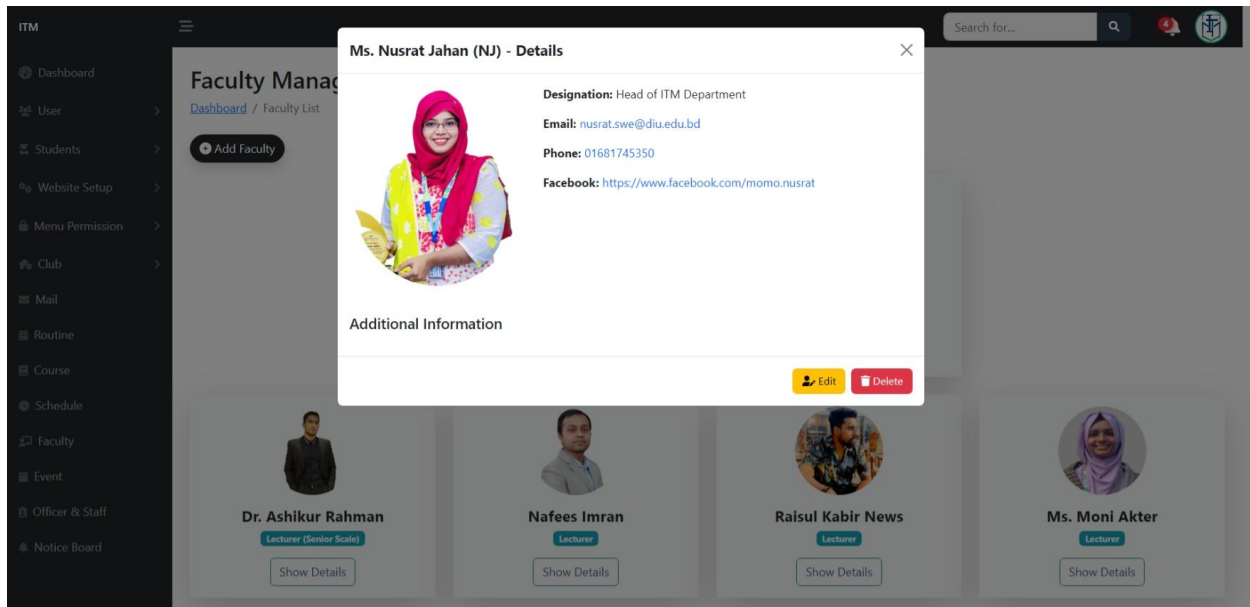


Figure 6.1.2.15 : Display After Update faculty information

Access Flow: Admin can access → Mail → Select → Batch-wise or Manual

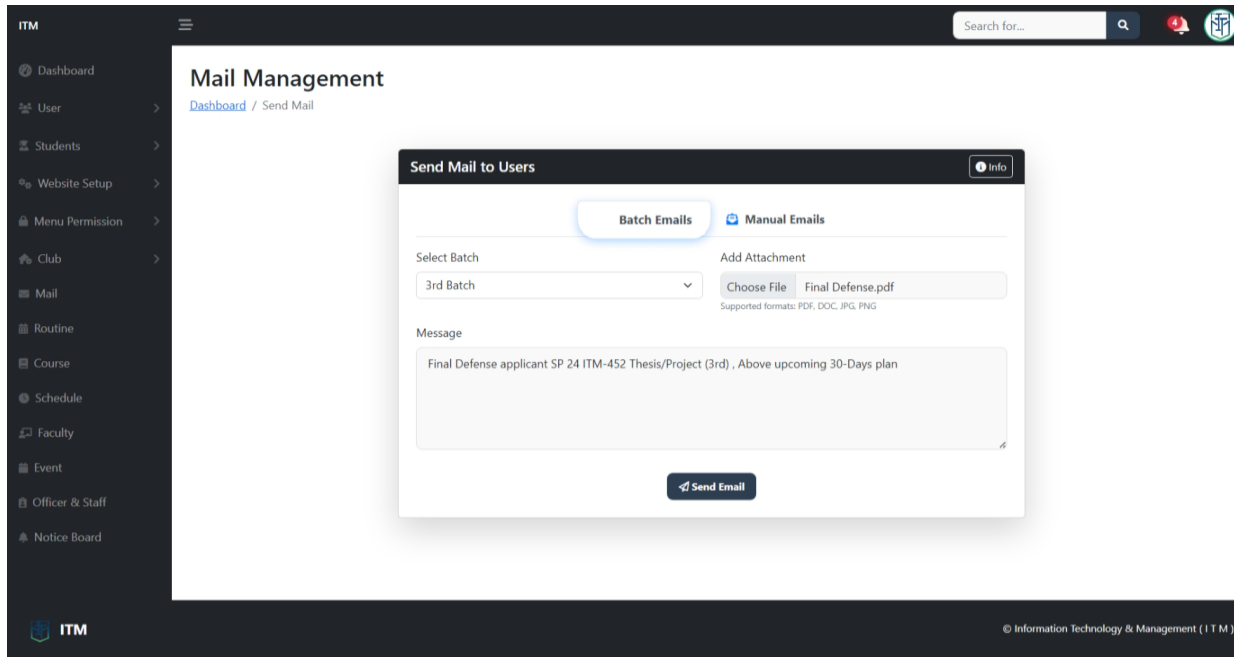


Figure 6.1.2.16 : Admin, Faculty can access send mail

Access Flow: Admin , Faculty can access → Mail → Select → Batch-wise or Manual → Sent Mail

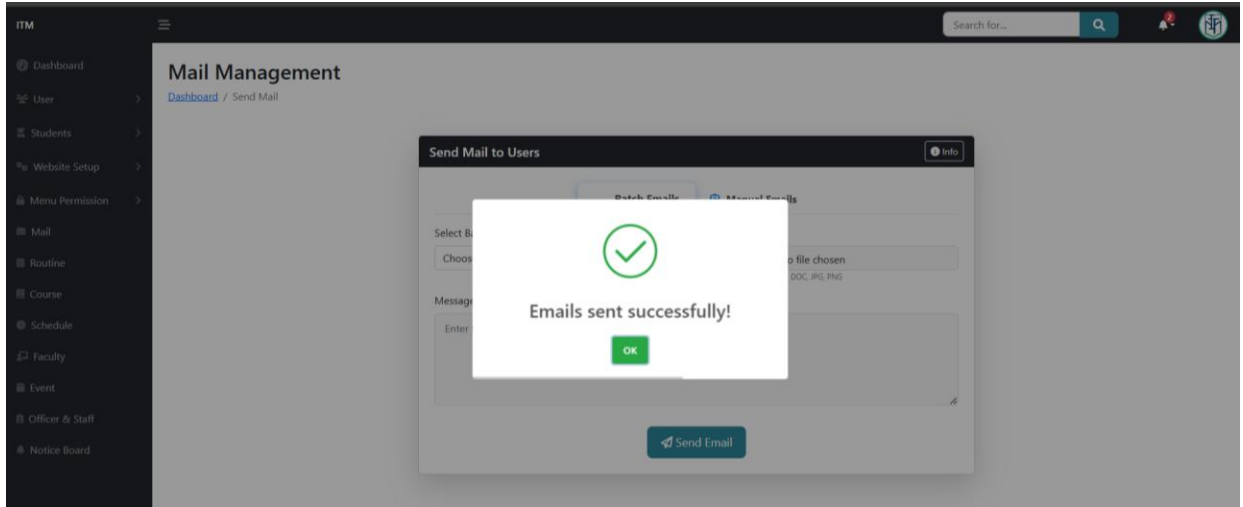


Figure 6.1.2.17 : **Admin, Faculty** can send mail after delivery mail **Display** Email sent Successfully

Access Flow: Search google Email or Open smart phone email App check inbox

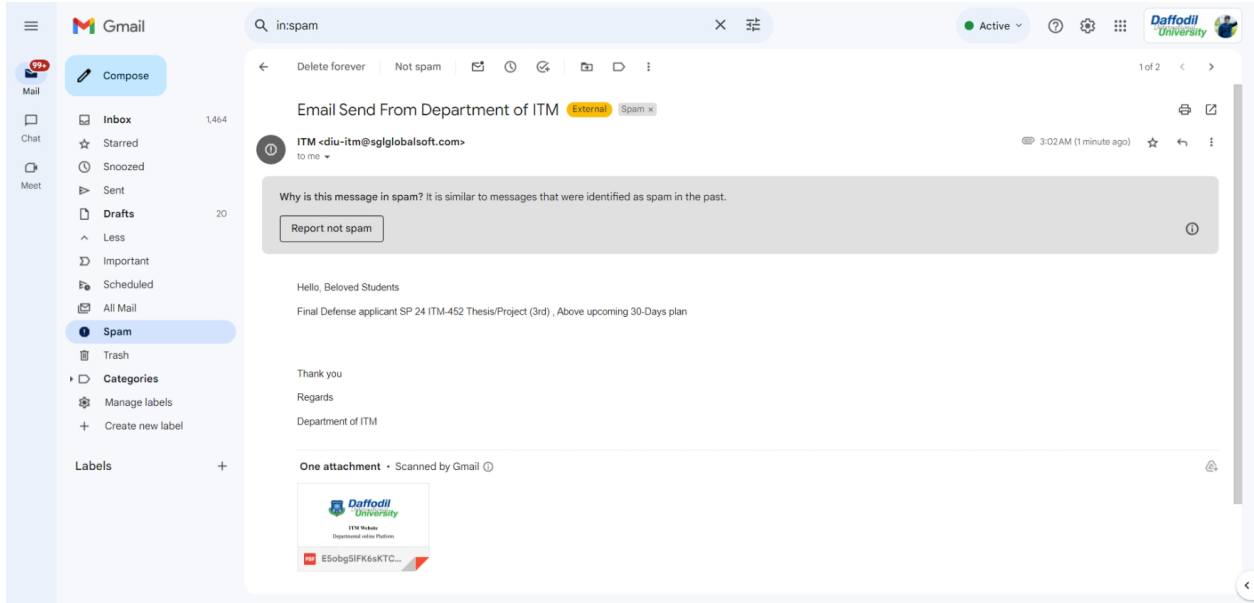


Figure 6.1.2.18 : **Display** Departmental Email Address and Message also Attachment

Access Flow: Check Before Host , Search google MailTrap → Open MailTrap → Inbox (**Option**)

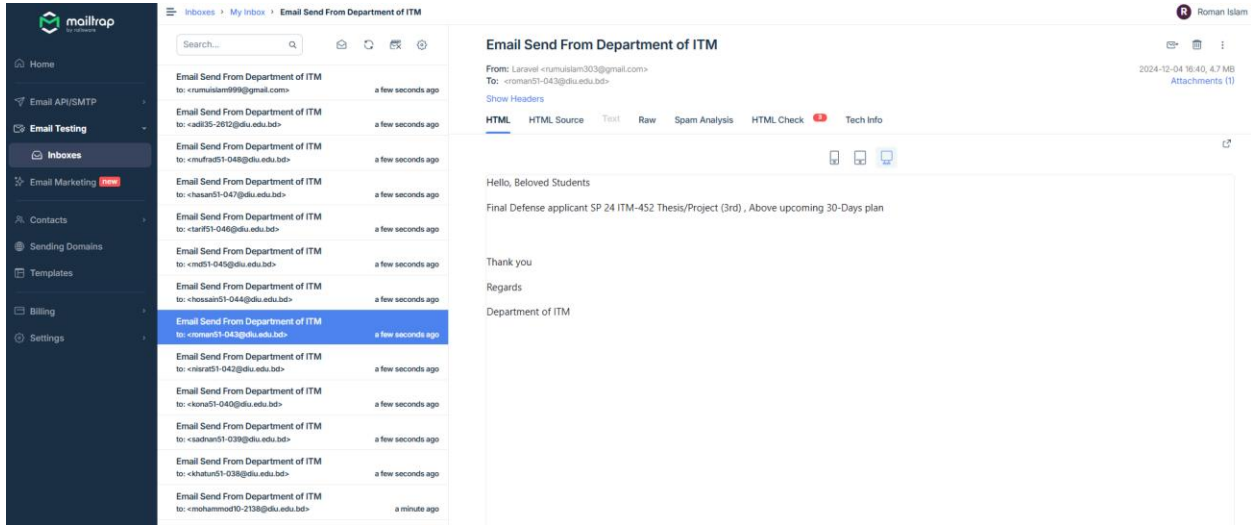


Figure 6.1.2.19 : **Display** and Message also Attachment

Access Flow: Admin can access **Routine**→ **Index** page

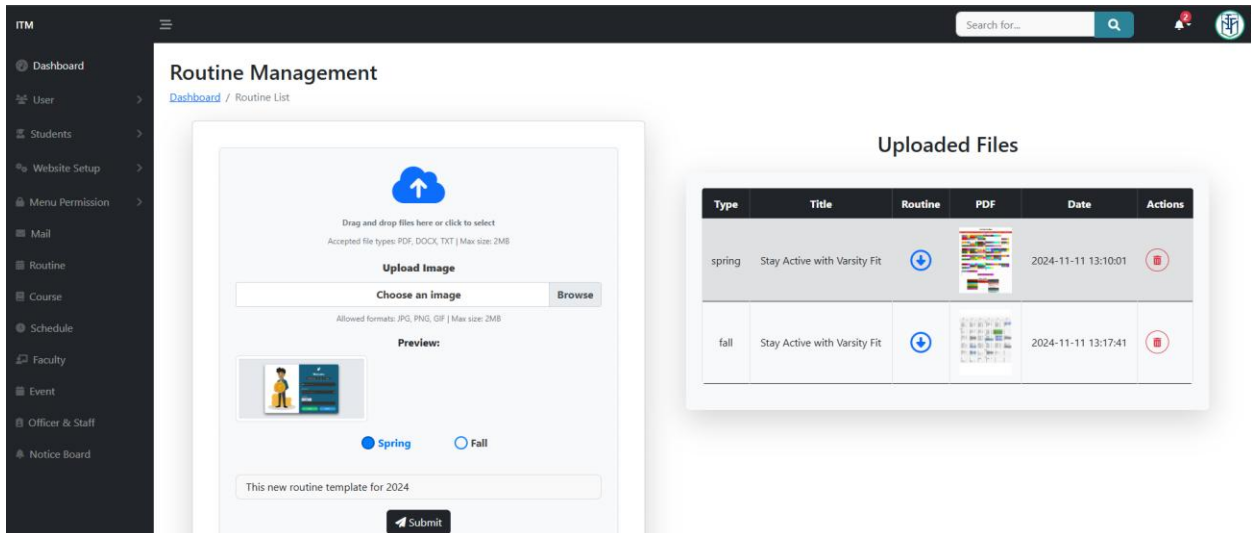


Figure 6.1.2.20: Role-Based View or Role-Based Upload of Routine PDF and Image on a Single Page

Access Flow: Routine module, including the Index Page and the Add Routine functionality.

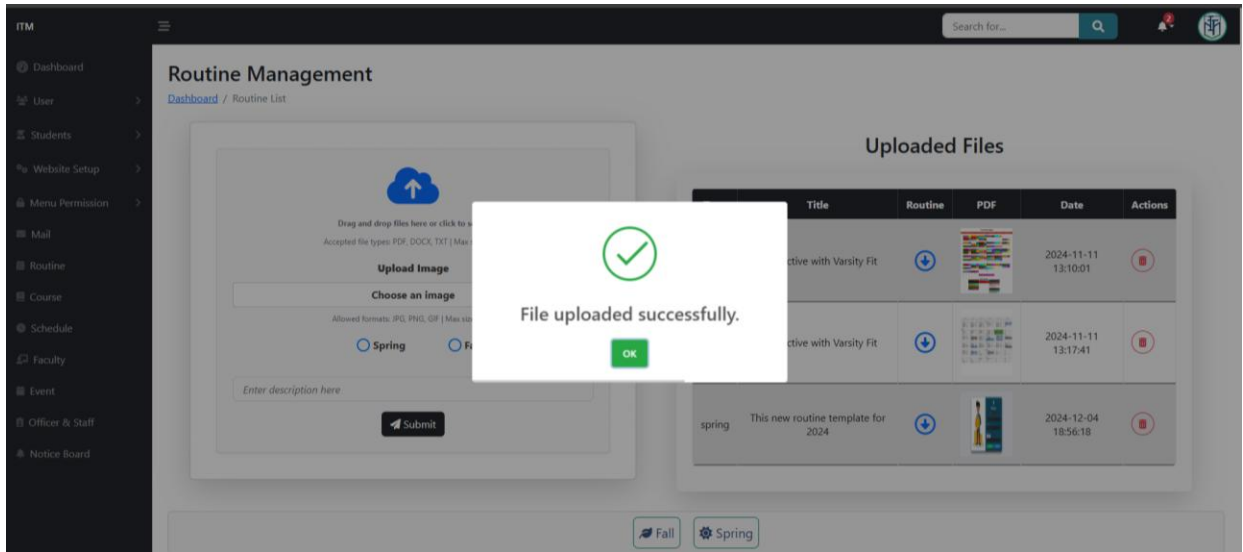


Figure 6.1.2.21 : Only admin can Upload Routine PDF and Image **Display:** File Uploaded Successfully!

Access Flow: Admin can access Routine→ Index page

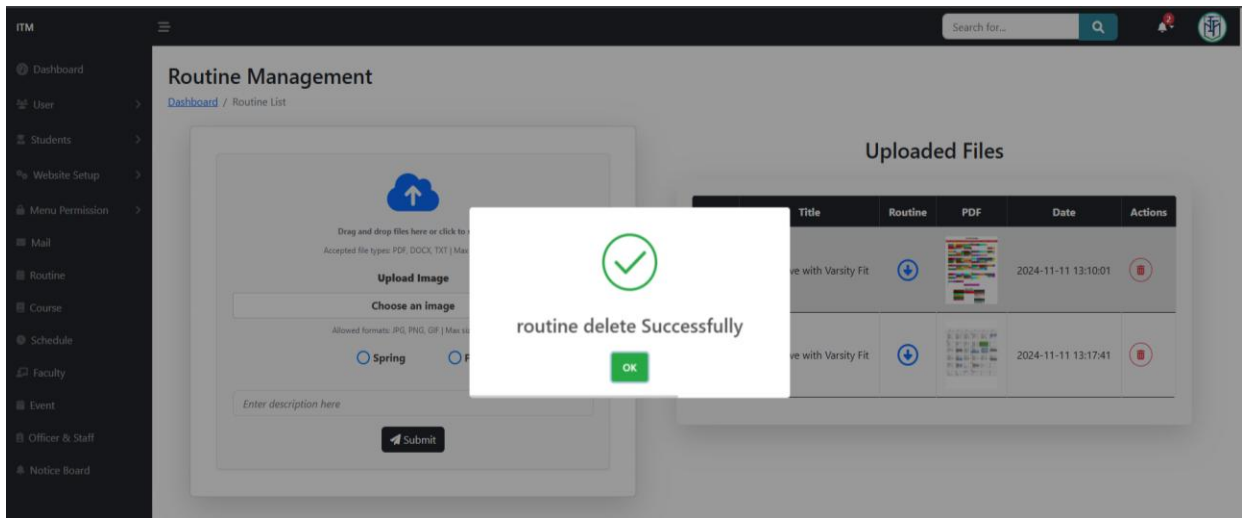


Figure 6.1.2.22 : Only admin can Delete Routine PDF and Image **Display :** Routine Delete Successfully !

Access Flow: Admin can access Course → Index page

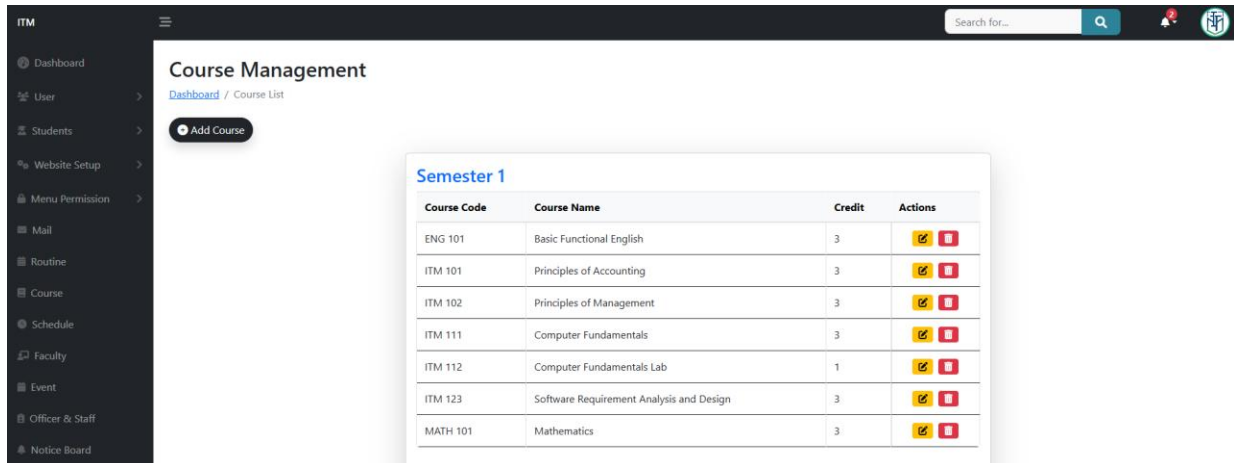


Figure 6.1.2.23 : User Can view Only Admin can access Edit / Delete

Access Flow: Admin can access Course → Index page → Click → Edit Option

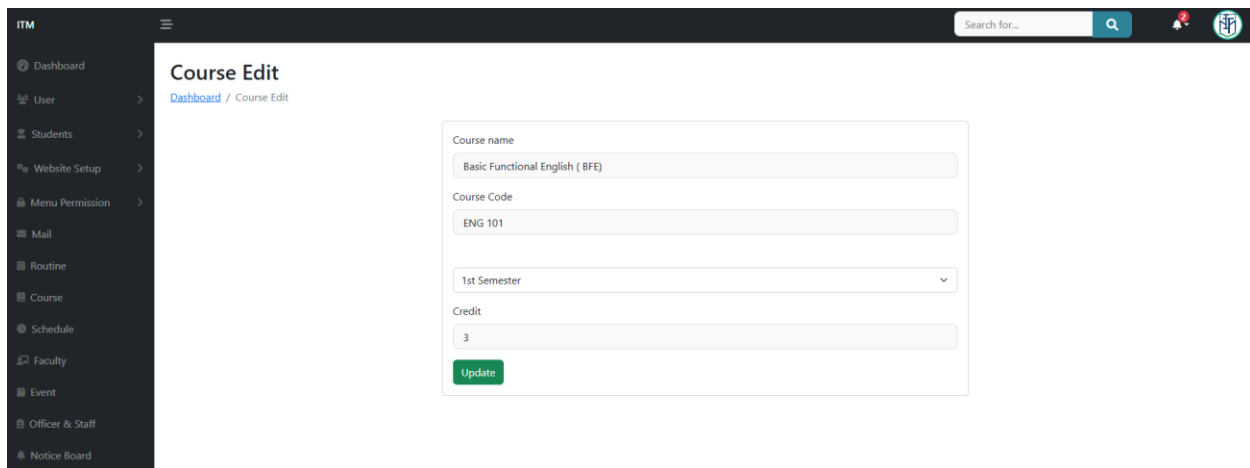


Figure 6.1.2.24 : Only admin can access update Course details

Access Flow: Admin can access Course → Index page → Click → Add Course Option

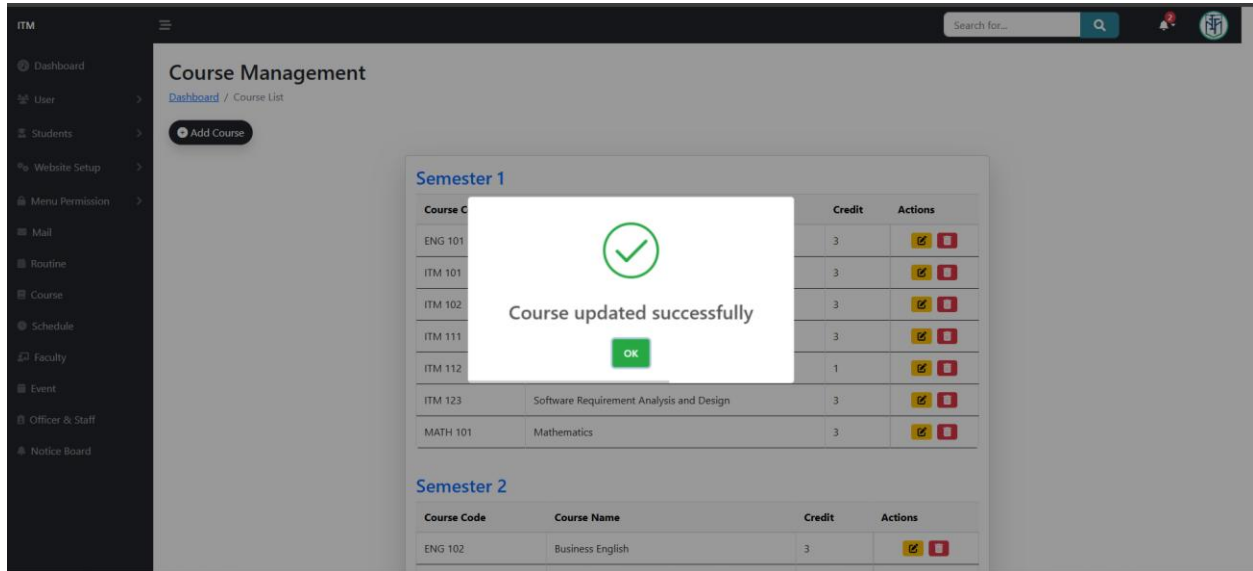


Figure 6.1.2.25 : Index page will be update also Database **Display** Course Update Successfully

Access Flow: Admin can access Schedule → Index page

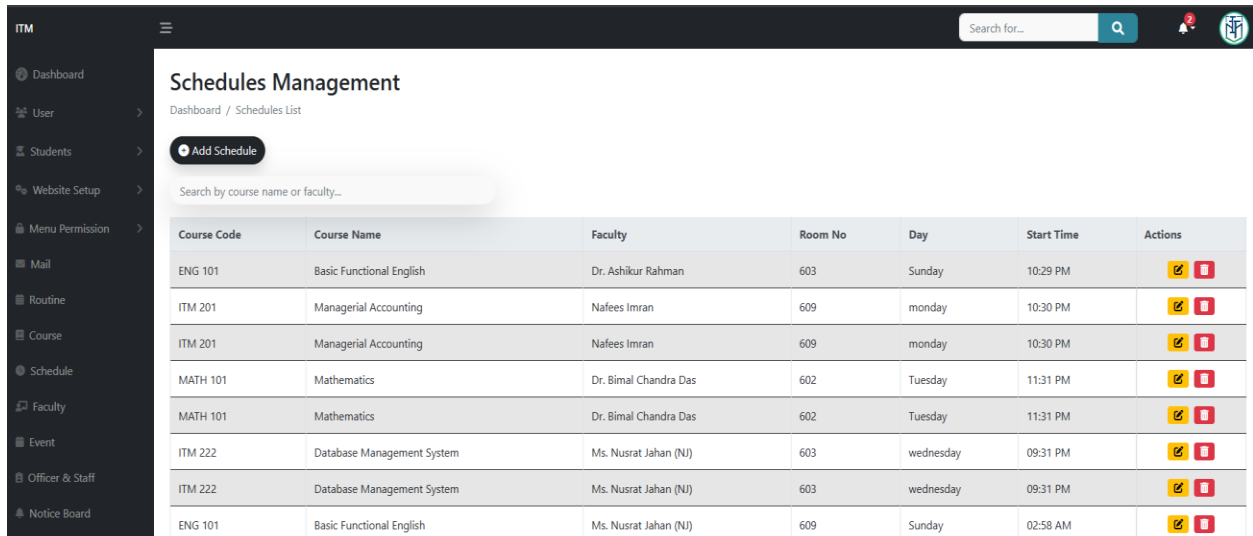


Figure 6.1.2.26 : User Can view Only Admin can access **Edit / Delete**

Access Flow: Admin can access **Schedule** → **Index page** → **Click** → **Add Schedule page**

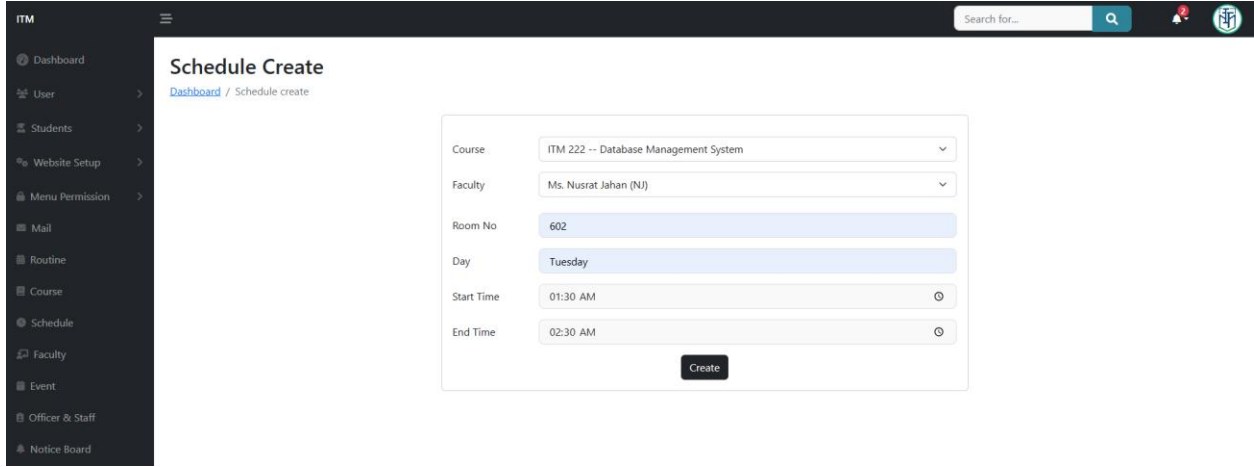


Figure 6.1.2.27 : Only Admin can Add Course ,Faculty ,RoomNo,Day,Start-Time,End-Time **Click Save**

Access Flow: Admin can access **Schedule** → **Index page**

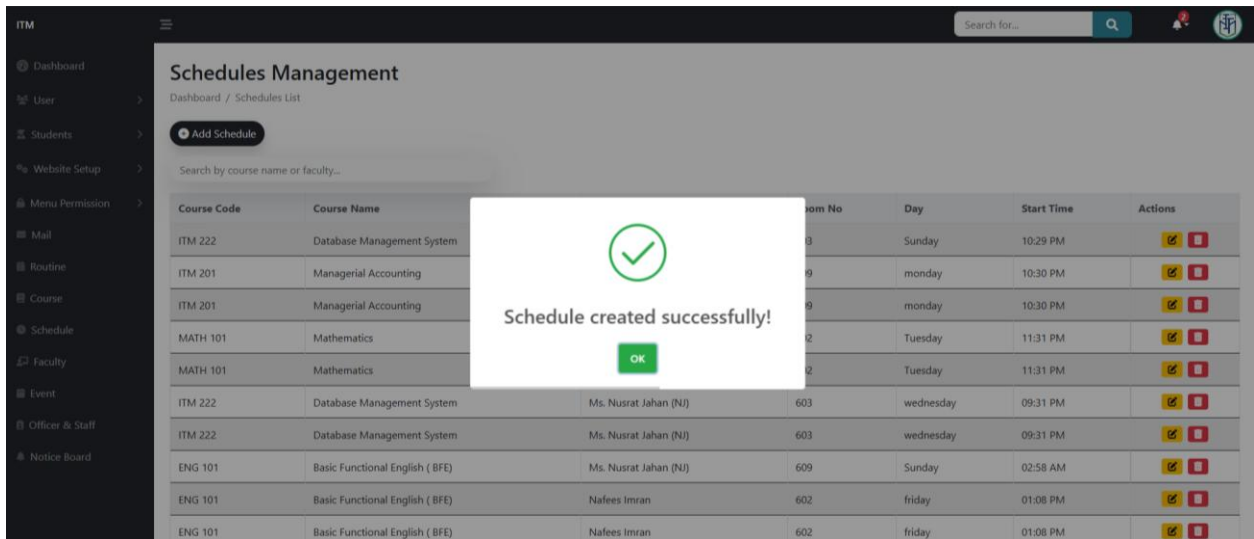


Figure 6.1.2.28 : Index page will be Add Schedule also Database **Display** Schedule Create Successfully !

Access Flow: Role base can access Event→ Index page

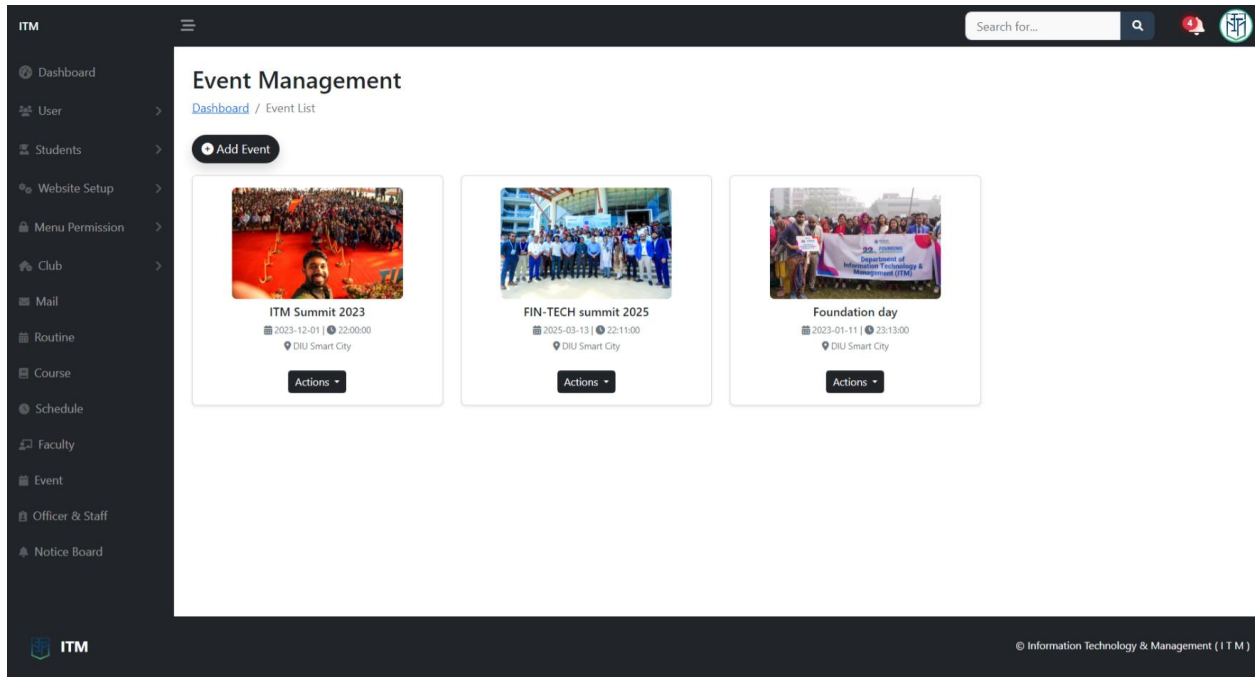


Figure 6.1.2.29 : Only Admin can access [Edit](#) / [Delete](#)

Access Flow: Admin can access Event→ Index page →Click→ Add Event page

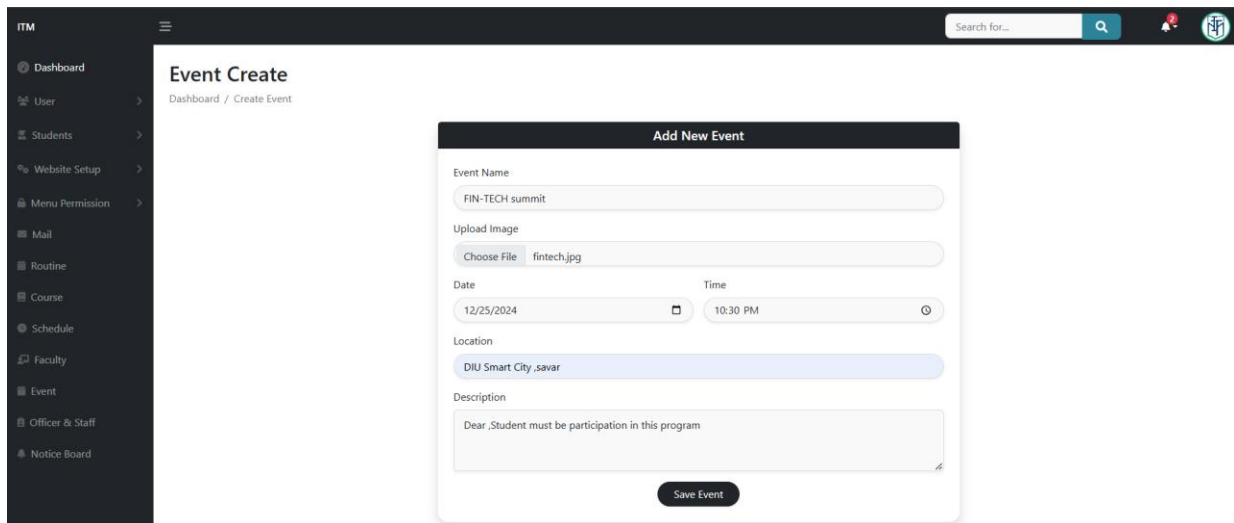


Figure 6.1.2.30 : Only Admin can Add Event Details then **Click Save**

Access Flow: Admin can access Event → Index page

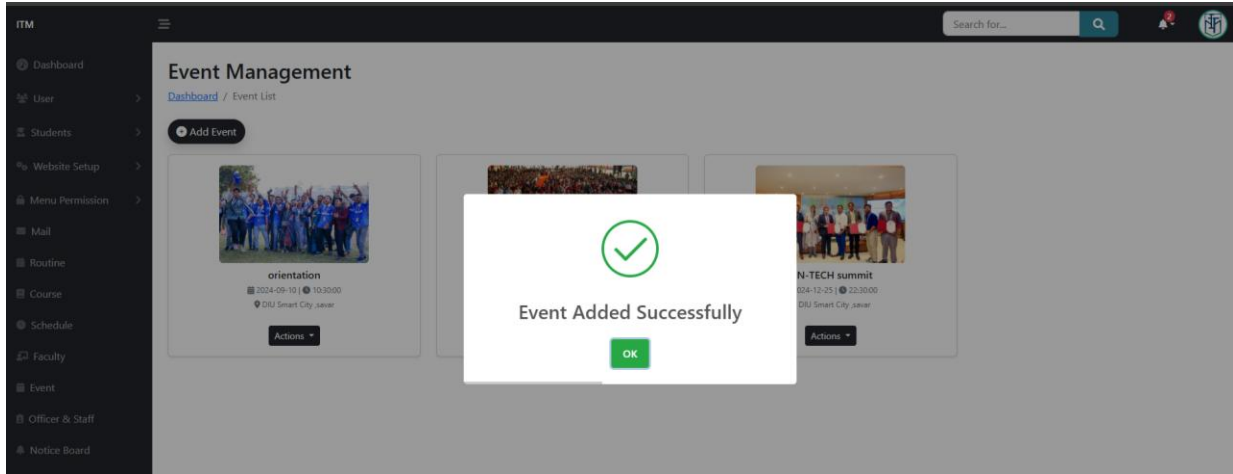


Figure 6.1.2.31 : Add in Index page also Database **Display** Event added Successfully

Access Flow: Admin can access Officer & Staff → Index page

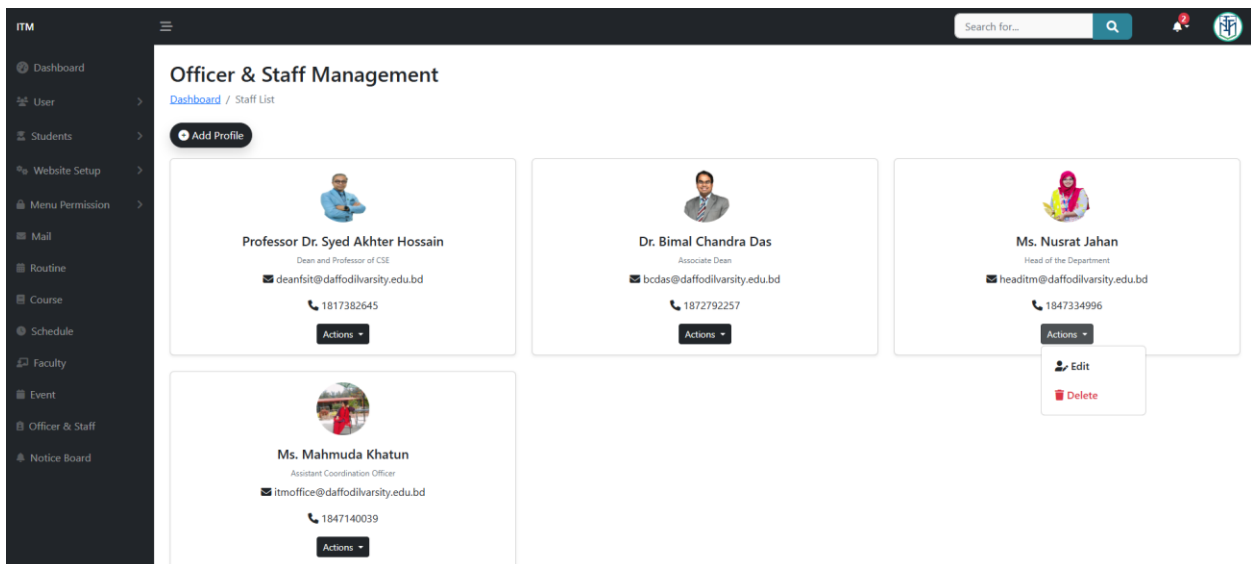


Figure 6.1.2.32 : Only Admin can access **Edit / Delete**

Access Flow: Admin can access Notice → Index page

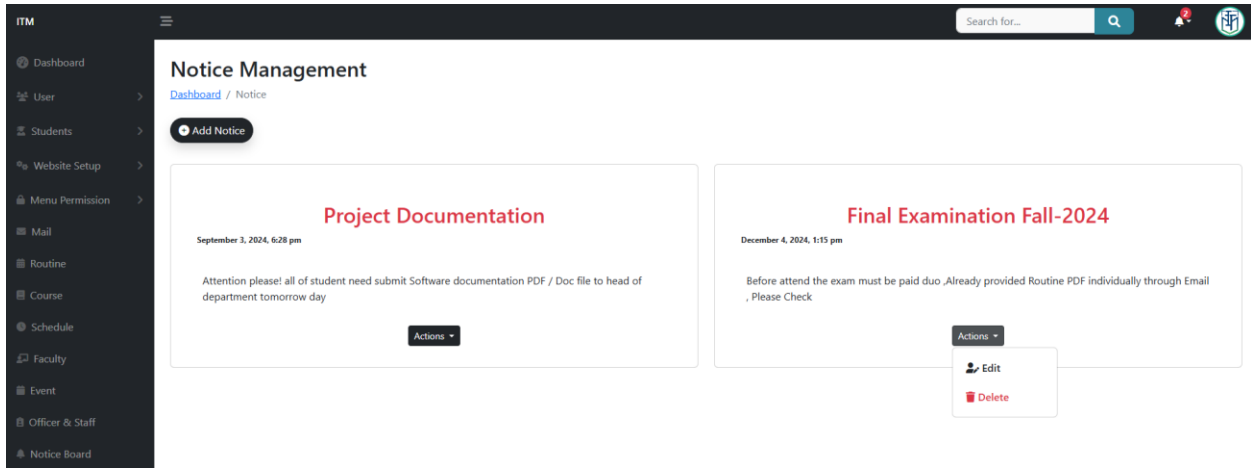


Figure 6.1.2.33 : User Can view Only Admin can access [Edit](#) / [Delete](#)

Access Flow: Admin can access Officer & Staff → Index page →Edit Option

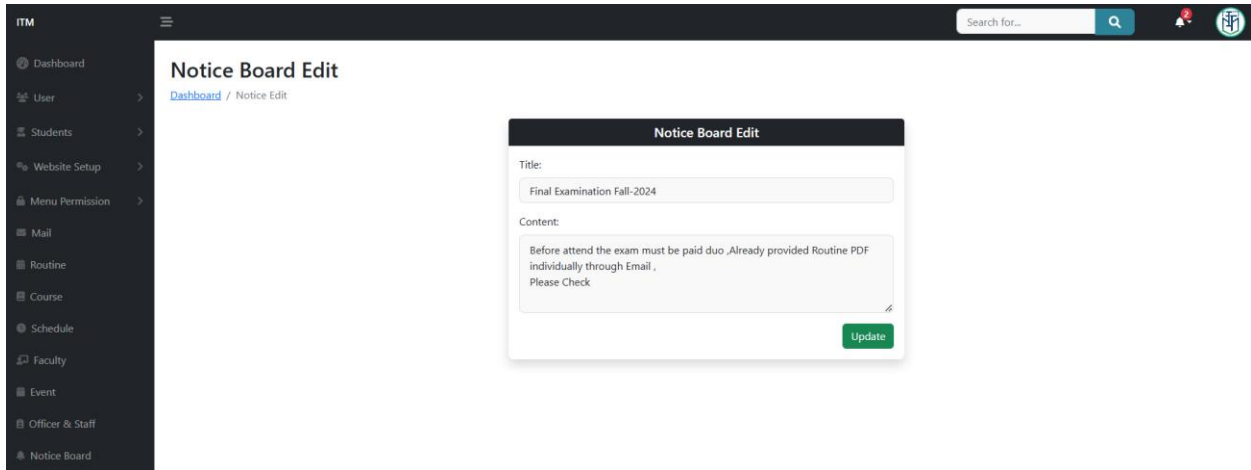


Figure 6.1.2.34 : Index page will be update also Database Display Notice Board UpdateSuccessfully

6.2 Database System

MY SQL Access: Admin can access Database and all of Table List Below

The screenshot displays the phpMyAdmin interface for a MySQL database named 'itm'. The left sidebar shows a tree view of the database structure, including 'information_schema' and 'itm'. The main area shows a table list for the 'itm' database. The table list has columns for 'Table', 'Action', 'Rows', 'Type', 'Collation', 'Size', and 'Overhead'. The table list includes 34 tables, such as 'admins', 'alumnis', 'batches', 'club_photo', 'committee', 'courses', 'events', 'failed_jobs', 'features', 'footers', 'gallery', 'herosections', 'jobs', 'menu', 'menu_permissions', 'migrations', 'model_has_permissions', 'model_has_roles', 'notice_boards', 'notifications', 'password_reset_tokens', 'permissions', 'personal_access_tokens', 'roles', 'role_has_permissions', 'routines', 'schedules', 'scholarships', 'semesters', 'services', 'staffs', 'students', 'teachers', and 'users'. A summary row at the bottom shows '34 tables', 'Sum', '640 InnoDB utf8mb4_general_ci', '1.3 MiB', and '0 B'. The interface also includes a top navigation bar with options like 'Structure', 'SQL', 'Search', 'Query', 'Export', 'Import', 'Operations', 'Privileges', 'Routines', 'Events', 'Triggers', and 'Designer'.

Table	Action	Rows	Type	Collation	Size	Overhead
admins	✱ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
alumnis	✱ Browse Structure Search Insert Empty Drop	6	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
batches	✱ Browse Structure Search Insert Empty Drop	10	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
club_photo	✱ Browse Structure Search Insert Empty Drop	9	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
committee	✱ Browse Structure Search Insert Empty Drop	6	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
courses	✱ Browse Structure Search Insert Empty Drop	54	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
events	✱ Browse Structure Search Insert Empty Drop	6	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
failed_jobs	✱ Browse Structure Search Insert Empty Drop	24	InnoDB	utf8mb4_unicode_ci	432.0 KiB	-
features	✱ Browse Structure Search Insert Empty Drop	8	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
footers	✱ Browse Structure Search Insert Empty Drop	1	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
gallery	✱ Browse Structure Search Insert Empty Drop	7	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
herosections	✱ Browse Structure Search Insert Empty Drop	1	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
jobs	✱ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
menu	✱ Browse Structure Search Insert Empty Drop	29	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
menu_permissions	✱ Browse Structure Search Insert Empty Drop	80	InnoDB	utf8mb4_unicode_ci	48.0 KiB	-
migrations	✱ Browse Structure Search Insert Empty Drop	42	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
model_has_permissions	✱ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
model_has_roles	✱ Browse Structure Search Insert Empty Drop	19	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
notice_boards	✱ Browse Structure Search Insert Empty Drop	2	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
notifications	✱ Browse Structure Search Insert Empty Drop	5	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
password_reset_tokens	✱ Browse Structure Search Insert Empty Drop	2	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
permissions	✱ Browse Structure Search Insert Empty Drop	12	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
personal_access_tokens	✱ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	48.0 KiB	-
roles	✱ Browse Structure Search Insert Empty Drop	4	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
role_has_permissions	✱ Browse Structure Search Insert Empty Drop	19	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
routines	✱ Browse Structure Search Insert Empty Drop	2	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
schedules	✱ Browse Structure Search Insert Empty Drop	19	InnoDB	utf8mb4_unicode_ci	48.0 KiB	-
scholarships	✱ Browse Structure Search Insert Empty Drop	3	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
semesters	✱ Browse Structure Search Insert Empty Drop	8	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
services	✱ Browse Structure Search Insert Empty Drop	4	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
staffs	✱ Browse Structure Search Insert Empty Drop	4	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
students	✱ Browse Structure Search Insert Empty Drop	239	InnoDB	utf8mb4_unicode_ci	96.0 KiB	-
teachers	✱ Browse Structure Search Insert Empty Drop	7	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
users	✱ Browse Structure Search Insert Empty Drop	8	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
34 tables	Sum		640 InnoDB	utf8mb4_general_ci	1.3 MiB	0 B

Figure 6.2.1 :Only Admin can access Edit / Delete

MY SQL Access: Admin can access Database →Click →Roles (Table)

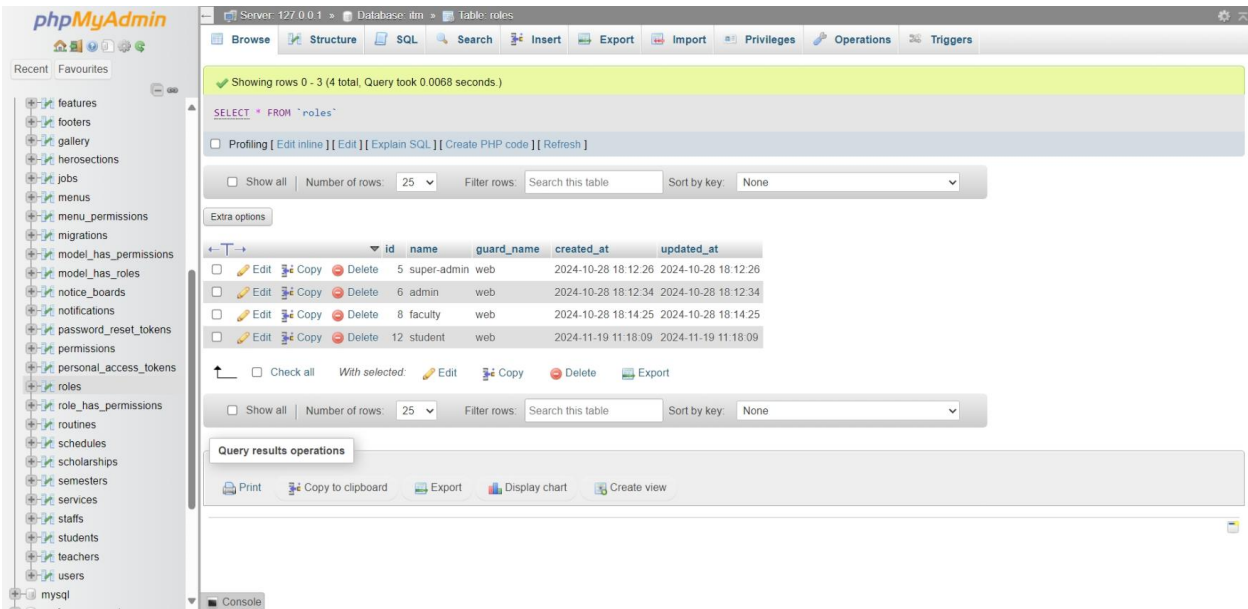


Figure 6.2.2 :Only Admin can access [Edit](#) / [Delete](#)

MY SQL Access: Admin can access Database →Click →Users (Table)

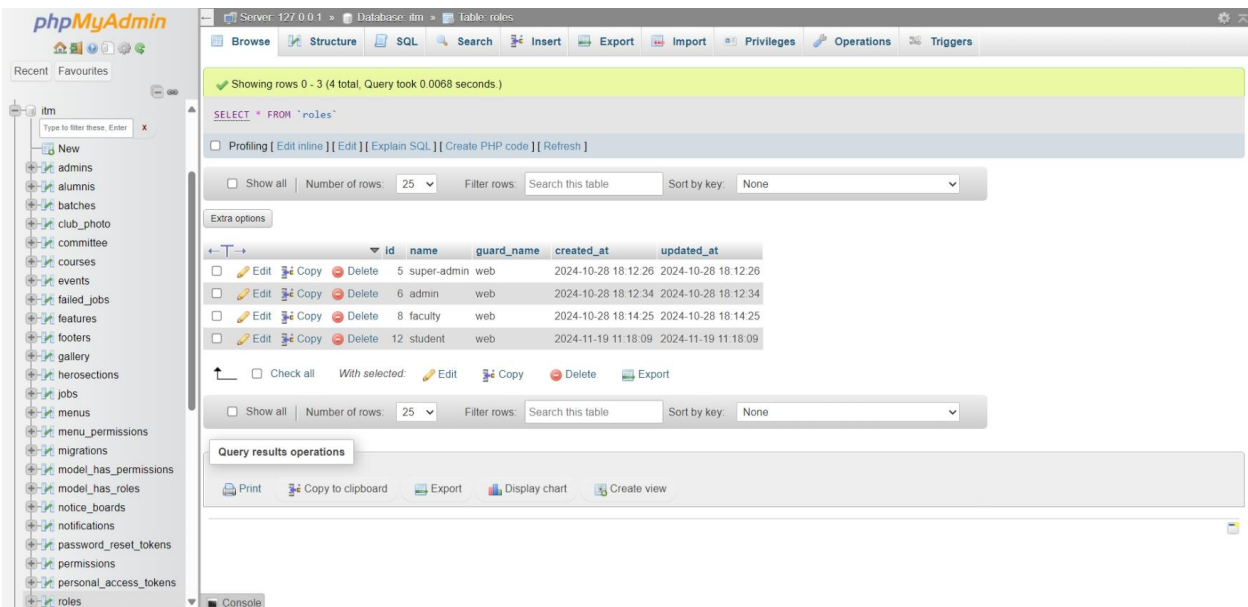


Figure 6.2.3 :Only Admin can access [Edit](#) / [Delete](#)

MY SQL Access: Admin can access Database → Click → Students (Table)

SELECT * FROM `students`

Number of rows: 25

id	name	roll	email	blood	address	mobile	type	batch_id	created_at	updated_at
1	Rejuan Islam Alif	201-51-001	rejuan51-001@diu.edu.bd	B+	dhaka	01759676488	inactive	1	NULL	2024-12-06 12:24:53
2	Md. Sojol Khan	201-51-002	sojol51-002@diu.edu.bd	NULL	NULL	8 80171E+12	inactive	1	NULL	2024-12-06 12:25:33
3	Mahfuzur Rahman	201-51-003	mahfuzur51-003@diu.edu.bd	NULL	NULL	8 80172E+12	inactive	1	NULL	2024-12-06 12:25:34
4	Md. Nazmus Sakib	201-51-004	nazmus11-6555@diu.edu.bd	NULL	NULL	8 80191E+12	inactive	1	NULL	2024-12-06 12:24:58
5	Md Al Hasibur Rahman	201-51-005	hasibur51-005@diu.edu.bd	NULL	NULL	8 80131E+12	inactive	1	NULL	2024-12-06 12:25:32
6	Md. Amir Hamza	201-51-006	amir51-006@diu.edu.bd	NULL	NULL	8 80178E+12	inactive	1	NULL	2024-12-06 12:25:35
7	Md. Nahidul Islam	201-51-007	nahidul51-007@diu.edu.bd	NULL	NULL	8 80178E+12	inactive	1	NULL	2024-12-06 12:25:21
8	Farzana Fartheha Mishu Sarkar	201-51-008	farzana51-008@diu.edu.bd	NULL	NULL	8 80164E+12	inactive	1	NULL	2024-12-06 12:25:42
9	Aniful Islam	201-51-009	aniful51-009@diu.edu.bd	NULL	NULL	8 80178E+12	inactive	1	NULL	2024-12-06 12:25:36
10	Shariful Alam Hridoy	201-51-010	shariful51-010@diu.edu.bd	NULL	NULL	8 80161E+12	inactive	1	NULL	2024-12-06 12:25:26
11	Md. Zayed Iqbal Fahim	201-51-011	zayed51-011@diu.edu.bd	NULL	NULL	8 80186E+12	active	1	NULL	NULL
12	Joy Bagchi	201-51-012	joy51-012@diu.edu.bd	NULL	NULL	8 80163E+12	active	1	NULL	NULL
13	Md. Tunshin Shabab	201-51-013	tunshin51-013@diu.edu.bd	NULL	NULL	1953608282	active	1	NULL	NULL
14	Sekh Saadi	201-51-014	sekh51-014@diu.edu.bd	NULL	NULL	8 80184E+12	active	1	NULL	NULL
15	REHNUM MEHRAB IMTIAZ	201-51-015	rehnum51-015@diu.edu.bd	NULL	NULL	8 80183E+12	active	1	NULL	NULL

Figure 6.2.4 :Only Admin can access Edit / Delete

MY SQL Access: Admin can access Database → Click → Faculty (Table)

SELECT * FROM `teachers`

Showing rows 0 - 6 (7 total. Query took 0.0006 seconds.)

teacher_id	image	name	designation	fb	linked	email	phone	created_at	updated_at
1	faculty1723730913_itm.png	Ms. Nusrat Jaham	Head of ITM Department	https://www.facebook.com/momo.nusrat	https://www.facebook.com/momo.nusrat	nusrat.swe@diu.edu.bd	01681745350	NULL	NULL
2	faculty1733152347_itm.png	Dr. Bimal Chandra Das	Dean of ITM Department	https://www.facebook.com/bimal.c.das.9	https://www.facebook.com/bimal.c.das.9	bcdas@daifodiversity.edu.bd	01872792257	NULL	NULL
3	faculty173316229_itm.png	Dr. Ashikur Rahman	Lecturer (Senior Scale)	https://www.facebook.com/ashik.rahman.370515	https://www.facebook.com/ashik.rahman.370515	ashikur.itm@diu.edu.bd	01312075927	NULL	NULL
4	faculty173316108_itm.png	Nafees Imran	Lecturer	https://www.facebook.com/nafees.imran.7	https://www.facebook.com/nafees.imran.7	nafees.itm@diu.edu.bd	01880829404	NULL	NULL
5	faculty1723731516_itm.jpg	Raisul Kabir News	Lecturer	https://www.facebook.com/raisul.kabir.31	https://www.facebook.com/raisul.kabir.31	raisul.itm007.c@diu.edu.bd	01402052440	NULL	NULL
6	faculty1723731619_itm.jpg	Ms. Moni Akter	Lecturer	https://www.facebook.com/tajmiron.tasfm	https://www.facebook.com/tajmiron.tasfm	akter.im@diu.edu.bd	01617378602	NULL	NULL
12	faculty1733286928_itm.jpg	Roman student	student	https://github.com/Roman-oze	https://github.com/Roman-oze	roman51-043@diu.edu.bd	01759676488	NULL	NULL

Figure 6.1.2.5 :Only Admin can access Edit / Delete

Chapter 7: References

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