Final Report on

E-Filing System of NSTU of NSTU

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1. Project Description

1.1 Introduction

The Web-Based Document Tracking and Transfer System is a comprehensive digital platform designed to streamline and automate the process of managing official documents within a university setting. The system aims to replace traditional paper-based workflows with an efficient, secure, and user-friendly digital solution.

Through this system, users, including teachers, department heads, and administrators, can initiate, submit, review, and track various types of documents such as applications, financial forms, and certificates. The system facilitates seamless collaboration, ensuring that documents move through the necessary departments and individuals for verification, approval, and other required actions.

Key features of the system include document initiation, secure file attachment, automated routing based on departmental workflows, real-time tracking of document status, user notifications, and electronic approval processes. Additionally, the system maintains an audit trail to ensure accountability and compliance with document handling procedures.

By centralizing document management, the system enhances transparency, reduces manual errors, and accelerates the document lifecycle. It enables stakeholders to easily access, review, and take necessary actions on documents from any location, enhancing productivity and reducing processing times. Through its user-friendly interface and customizable workflows, the Web-Based Document Tracking and Transfer System optimizes the way documents are created, processed, and tracked within the university, contributing to improved efficiency and organization-wide collaboration.

1.2 Objective

Automate the process of tracking official documents within a university to ensure efficient and timely delivery.

Implement a system for commenting, signing, and verifying documents to ensure that all necessary steps are taken in the document processing.

Create a centralized repository of documents that can be easily accessed and searched by authorized users.

Provide a user-friendly interface that allows users from different departments to access and manage documents.

Implement a notification system to keep users informed of the status of their documents.

Develop a secure and reliable web-based file transfer system that can handle large volumes of documents.

1.3 Motivation

Efficiency and Productivity Enhancement: Traditional paper-based document handling and filing systems can be cumbersome and time-consuming. The E-Filing System of NSTU aims to streamline administrative processes, reducing the time and effort required for document submission, review, and approval.

Paperless Initiative: Many institutions, including universities, are increasingly adopting paperless and environmentally friendly practices. The project aligns with the university's commitment to sustainability by reducing paper usage and waste.

Improved Document Tracking: In a complex university environment with multiple departments and stakeholders, tracking the status and location of documents can be challenging. The E-Filing System of NSTU provides real-time tracking and transparency, ensuring that documents move smoothly through the approval process.

Enhanced Communication: The system facilitates communication among departments, faculty, staff, and students by providing a platform for comments, feedback, and document-related discussions. This improves collaboration and reduces the risk of miscommunication.

Reduction of Errors: Automating document workflows reduces the likelihood of errors that can occur in manual processes, such as data entry mistakes or lost documents. This ensures the accuracy and integrity of university records.

Remote Access: With the rise of remote work and online learning, having an E-Filing System of NSTU allows authorized users to access and manage documents from anywhere with an internet connection, providing flexibility and convenience.

User Experience:

Providing a user-friendly interface for document submission and tracking enhances the overall user experience for students, faculty, and staff, making it easier for them to interact with university processes.

Resource Optimization: By reducing the time spent on manual document handling, user can redirect their efforts toward more value-added tasks, such as research, teaching, and student support.

Scalability: As the university grows, the E-Filing System of NSTU can scale to accommodate increasing document volumes and additional departments or campuses.

1.4 Target Users

There are 3 target users in our application. The target users for our system are teachers, department heads system administrator.

1.4.1 Teachers

They may need to initiate document submissions, such as vacation requests or research proposals. They also participate in document reviews and approvals.

1.4.2 Section Officer
They select a form or initiate a new form. They select the destination and submit the form.

1.4.3 Department Heads
They are responsible for approving documents related to their departments, such as budgets or staffing requests. They may also initiate documents for higher-level approvals.

1.4.4 Section Officer of Registrar Office
S/HE gets the notification and check the notification and checks the file and verifies the file. S/HE can comment or attach file if needed and selects the destination and submit the file.

1.4.5 Deputy Registrar
S/HE gets the notification and check the notification and checks the file and verifies the file. S/HE can comment or attach file if needed and selects the destination and submit the file.

1.4.6 Registrar
S/HE gets the notification and check the notification and checks the file and verifies the file. S/HE can comment or attach file if needed and selects the destination and submit the file.

1.4.7 Treasurer
S/HE gets the notification and check the notification and checks the file and verifies the file. S/HE can comment or attach file if needed and selects the destination and submit the file.

1.4.8 Vice Chancellor
S/HE gets the notification and check the notification and checks the file and verifies the file. S/HE can comment or attach file if needed and selects the destination and submit the file.

1.5 Requirements

1.5.1 Functional

- Role Based Access Control
- Document Initiation
- Select Destination
- Attach File
- Add Comment
- Document Submission
- Document Routing
- Document Review and Processing
- Document Tracking and Status Update

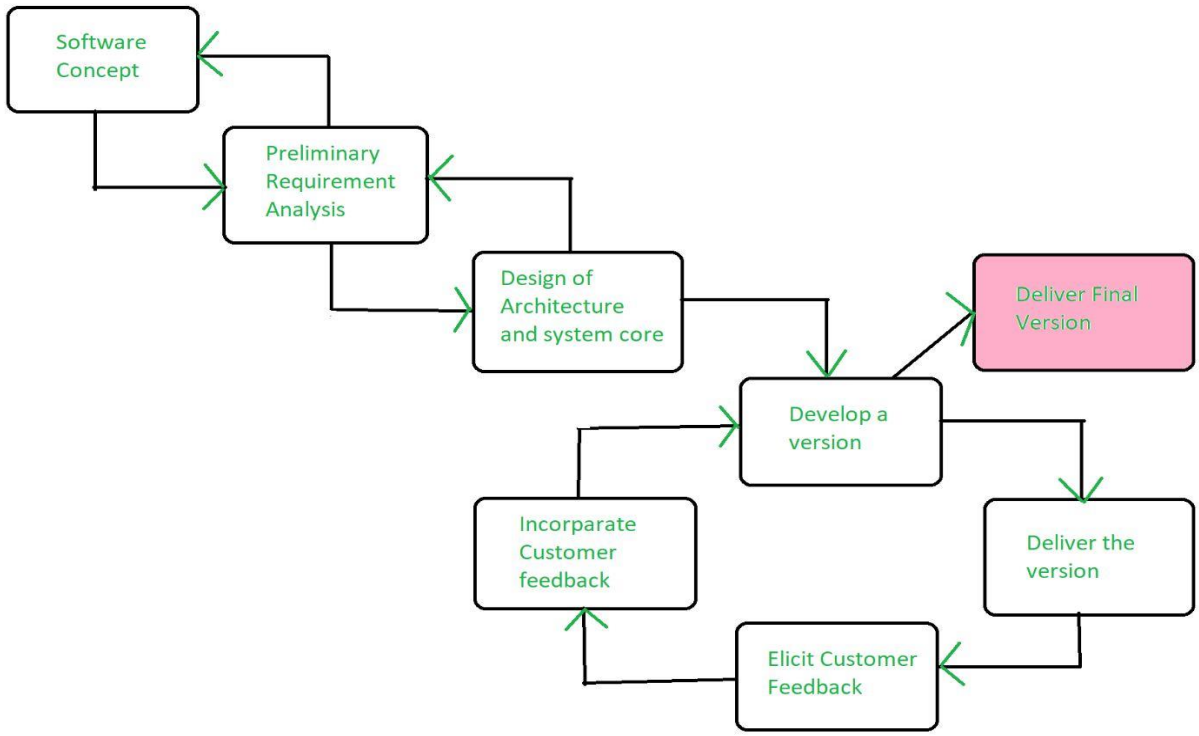
1.5.2 Non-Functional

- Users' password will be protected
- Privacy Requirements
- The system provides security strategies.

1.6 Models, Tools and Resources

1.6.1 Models

In our SPL-II project we used evolutionary model. Using this model, it made our job a lot easier. Since the code is tested at the end of each cycle, at the end of the project we able to create an error free project. Evolutionary model is a combination of iterative and incremental approach to software development. Evolutionary model is commonly used when the client wants to start using the core features instead of waiting for the full project. Evolutionary model is also used in object-oriented software development because the system can be easily portioned into units in terms of object. The Evolutionary development model divides the development cycle into smaller, incremental waterfall models in which users are able to get access to the product at the end of each cycle. This time also taking experience from the previous year project, we want to implement evolutionary model. One of the main reasons we want to use this model is, it reduces the error because the core modules get tested thoroughly. And a user gets a chance to experiment partially developed system.



1.6.2 Tools

Text editor	:	Visual Studio Code
Local Server	:	Xampp Control Panel
RDBMS	:	MySQL
Technologies	:	HTML, CSS, Bootstrap 5, PHP, JavaScript, SQL

1.6.3 Resources

Learning resources :
1. https://www.w3schools.com/
2. https://getbootstrap.com/
3. https://www.udemy.com/

Booking resources :
1. Software Engineering 9th Edition by Lan Sommerville
2. Requirements Engineering Fundamentals by Klaus Pohl
3. Database System Concepts 6th Edition by Abraham Silberschatz

Online resources :
1. https://github.com
2. https://stackoverflow.com/
3. https://getbootstrap.com/

Paper resources :
1. Semiz, G. & Berger, P. D. (2017). Determining the Factors that Drive Twitter Engagement-Rates. Archives of Business Research,5(2).

1.7 Project Information

Project Name : E-Filing System of NSTU

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2. User Guide

2.1 User Side

The user side architecture is shown in figure 2. Click a button it will go to the related page. What is on that page and what can be done from the page is shown in tree form. By seeing this, the user will get a complete guide on how to use the entire application. After the architecture everything is pictured with details.

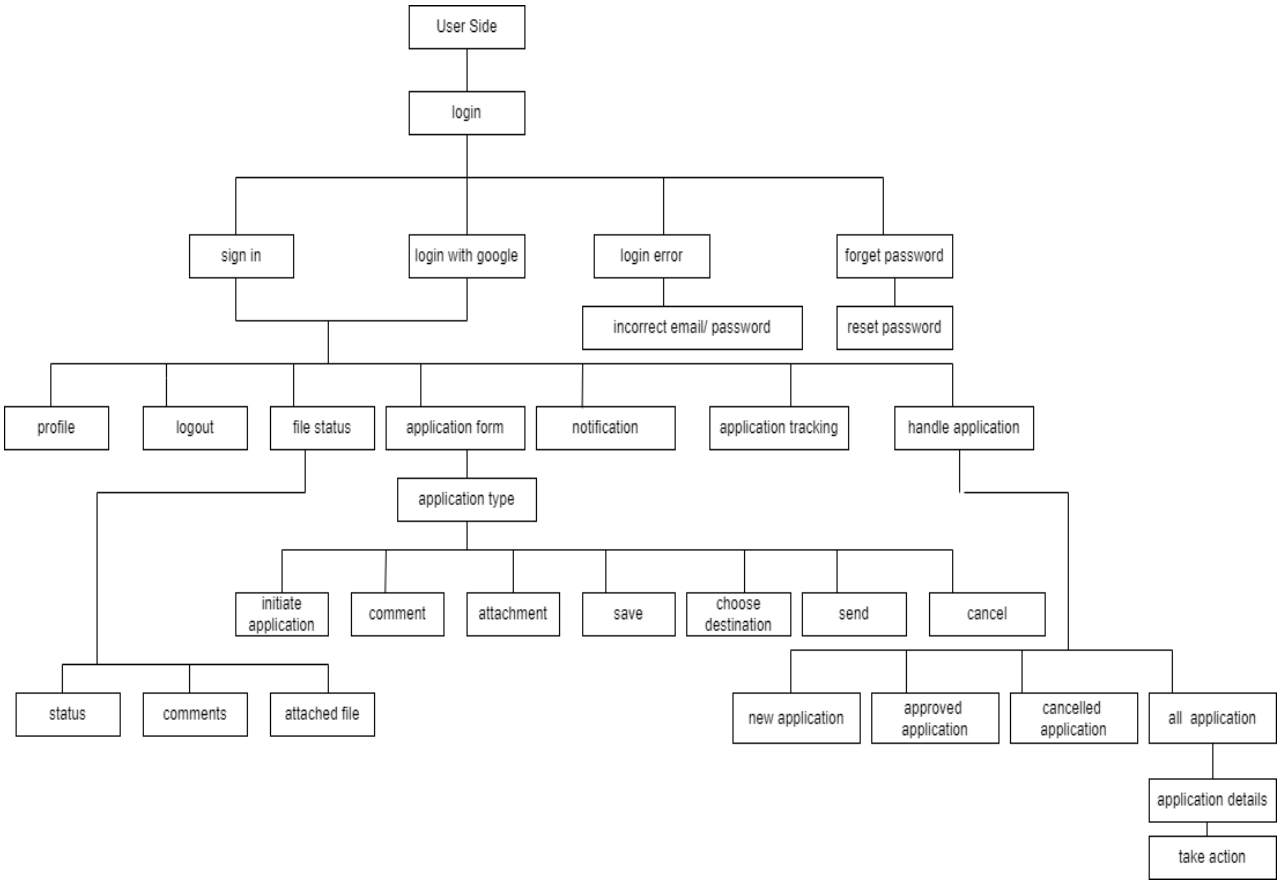

Figure 1: User Guide

2.1.1 Log in Page

Clicking on the login button with correct email and password will take you to the role based Dashboard. Figure-3 shows the login page of our application.

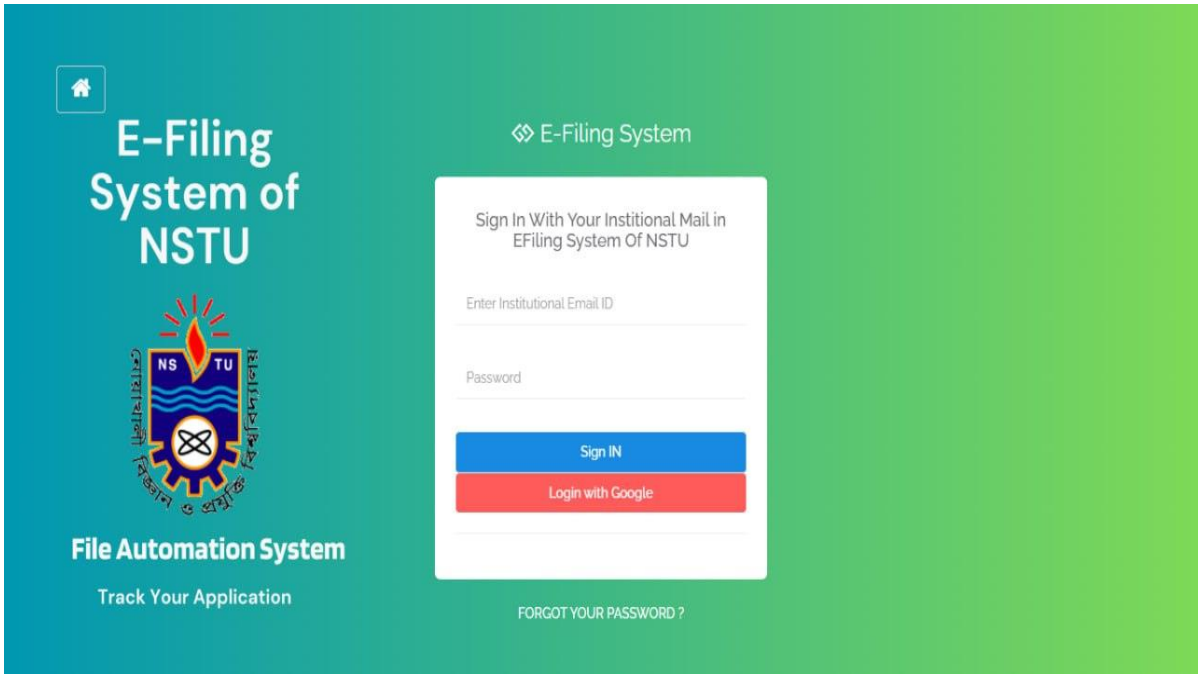

Figure 2: Login Page

2.1.2 Error Message

If user enter wrong email (edu mail is required) or password then error message will show like the figure 12.

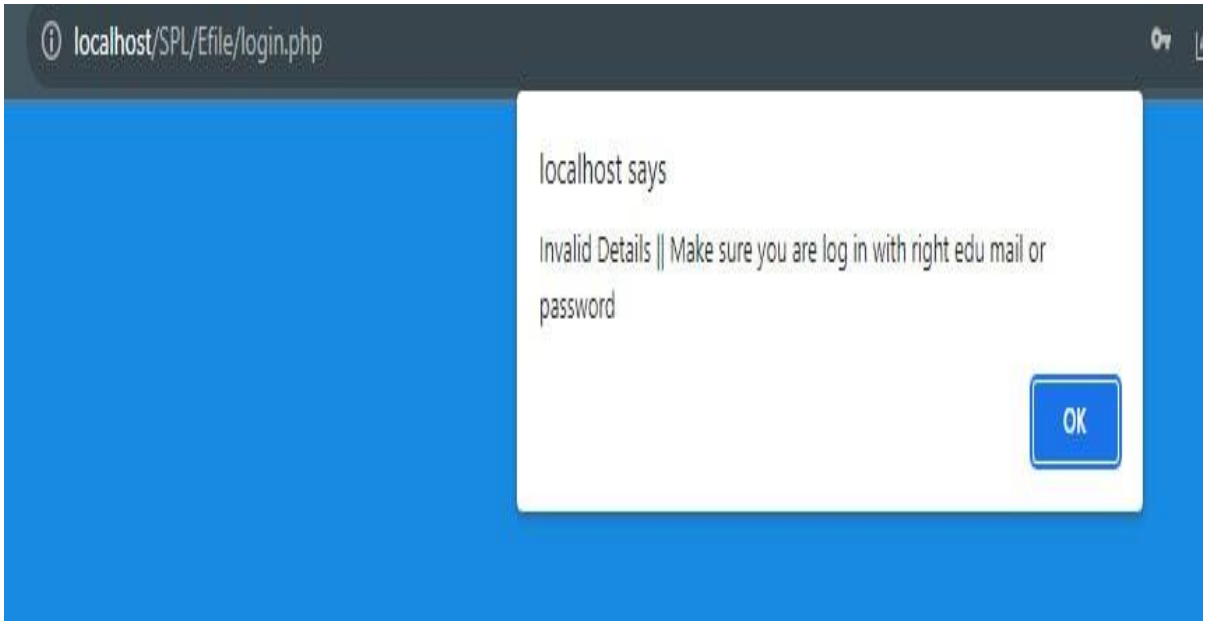

Figure 3: Login Error Message

2.1.3 Reset Password

If user forget password then they can reset his/her password.

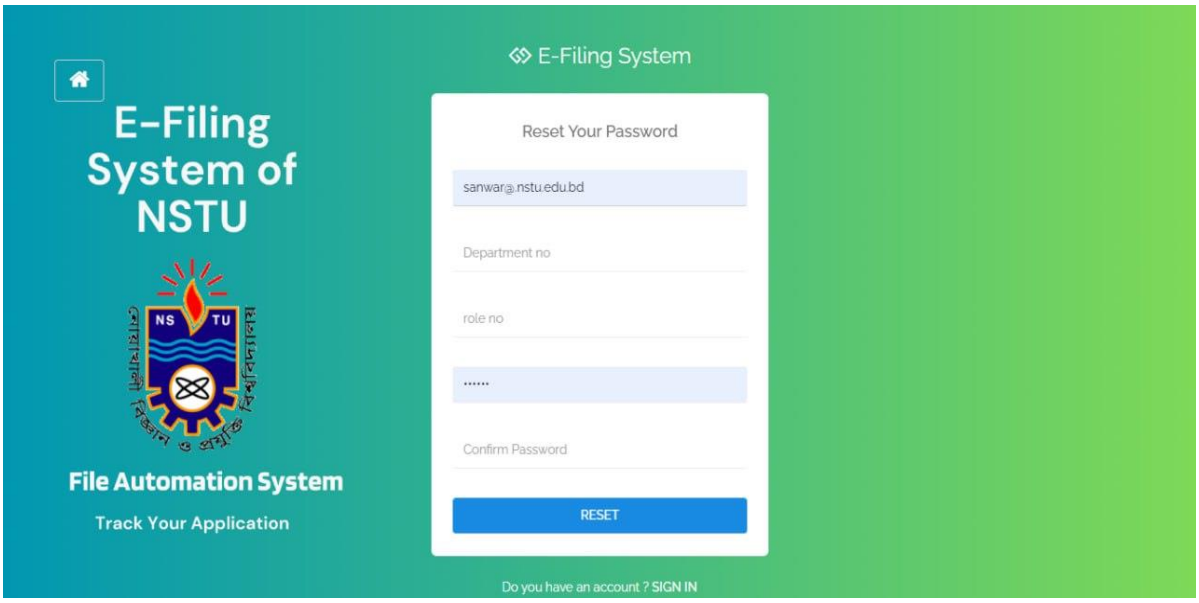

Figure 4: Reset Password

2.1.4 Log in With Google

Clicking on the login with google button with correct email and password will take you to the role based Dashboard.

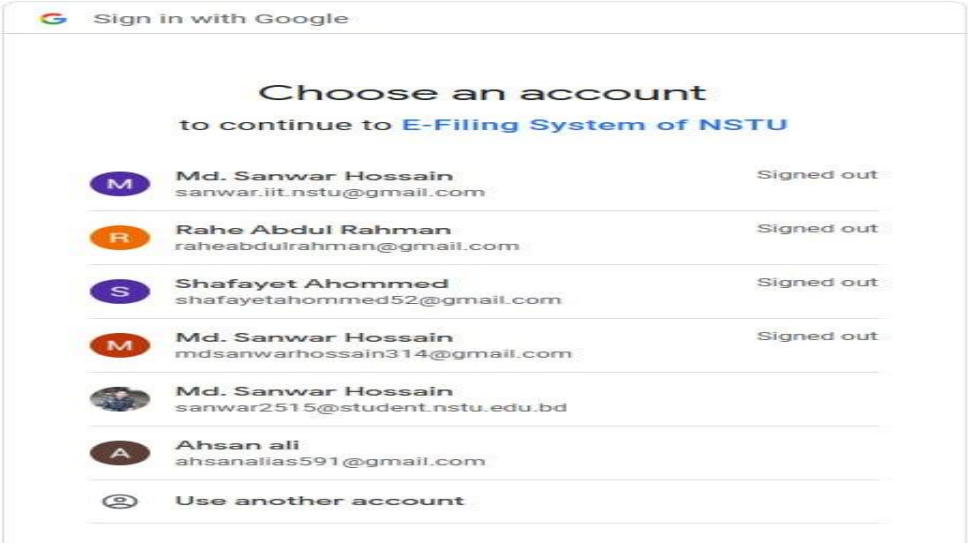

Figure 5: Login With Google

2.1.5 Home Page

This is our landing page. After logging in, users can see the Dashboard from where they can select application form, go to the file status and they can also see form list.

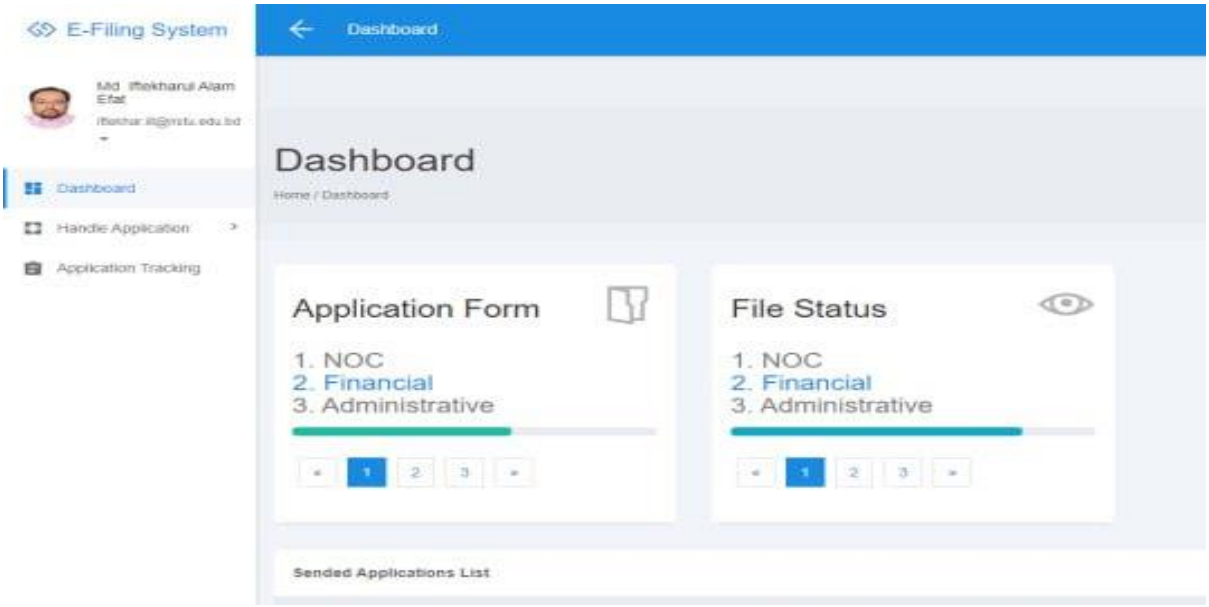

Figure 6: Home Page

Figure 7: Application List

2.1.6 Application Type

Users can choose application type from different types of application for initiate a application.

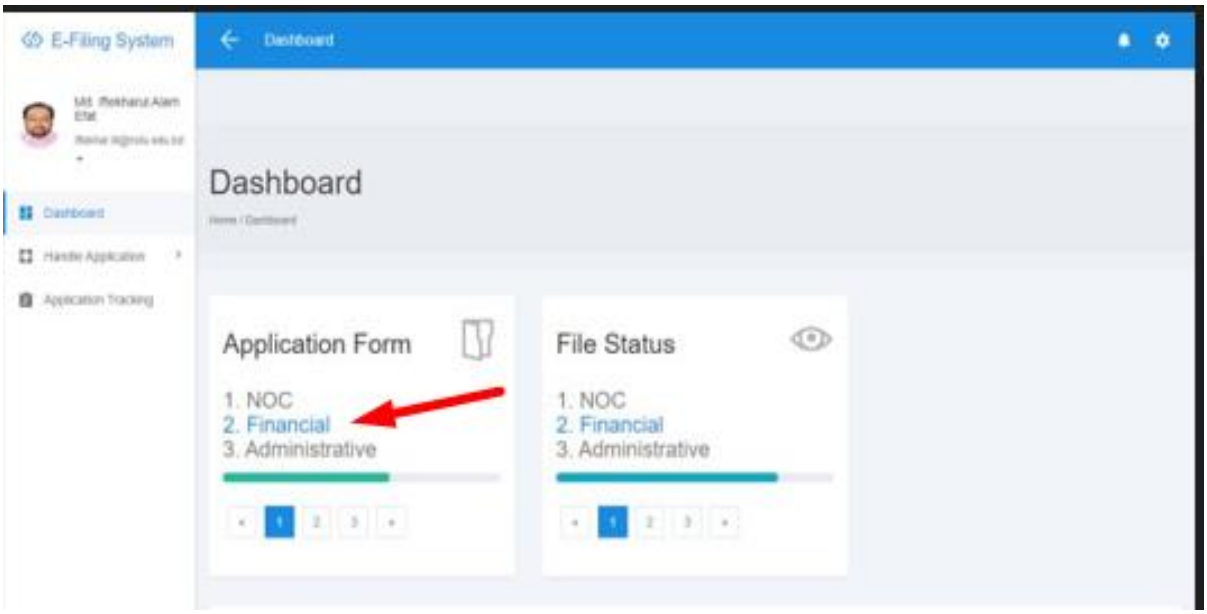

Figure 8: Application Type

2.1.7 Initiate Application

If a user wants to initiate a application they have this format for initiate application they also can attach one or more files, select destination and send application to the desired destination.

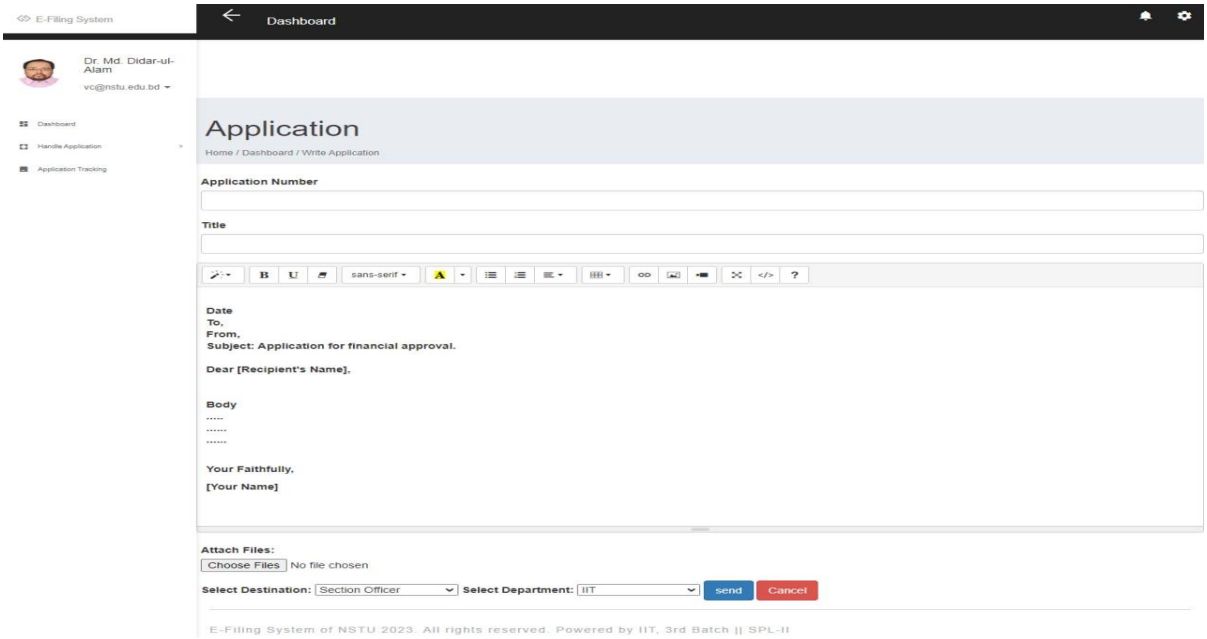

Figure 9: Initiate Application

2.1.8 Attach File

Application initiator can attach one or more file in as attachment.

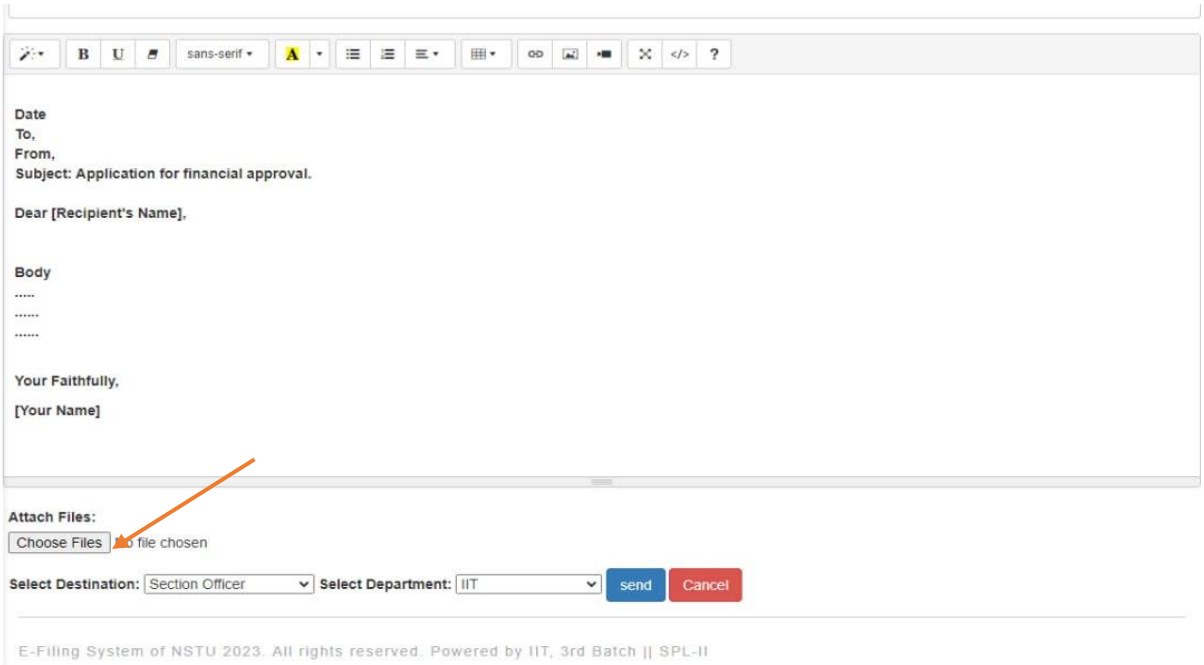

Figure 10: Attach File

2.1.9 Send File

By selecting destination and department user can send file to the desired department.

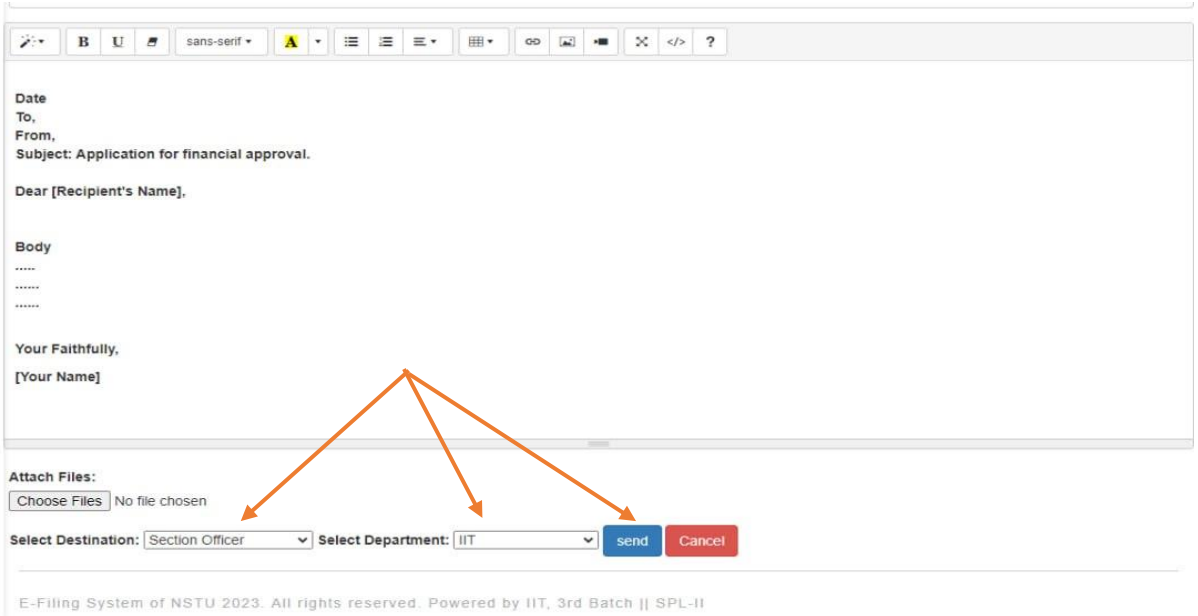

Figure 11: Send File

2.1.10 Application Tracking

User can see the status of the file who created it, source of the file, issued date and the file is accepted or rejected etc.

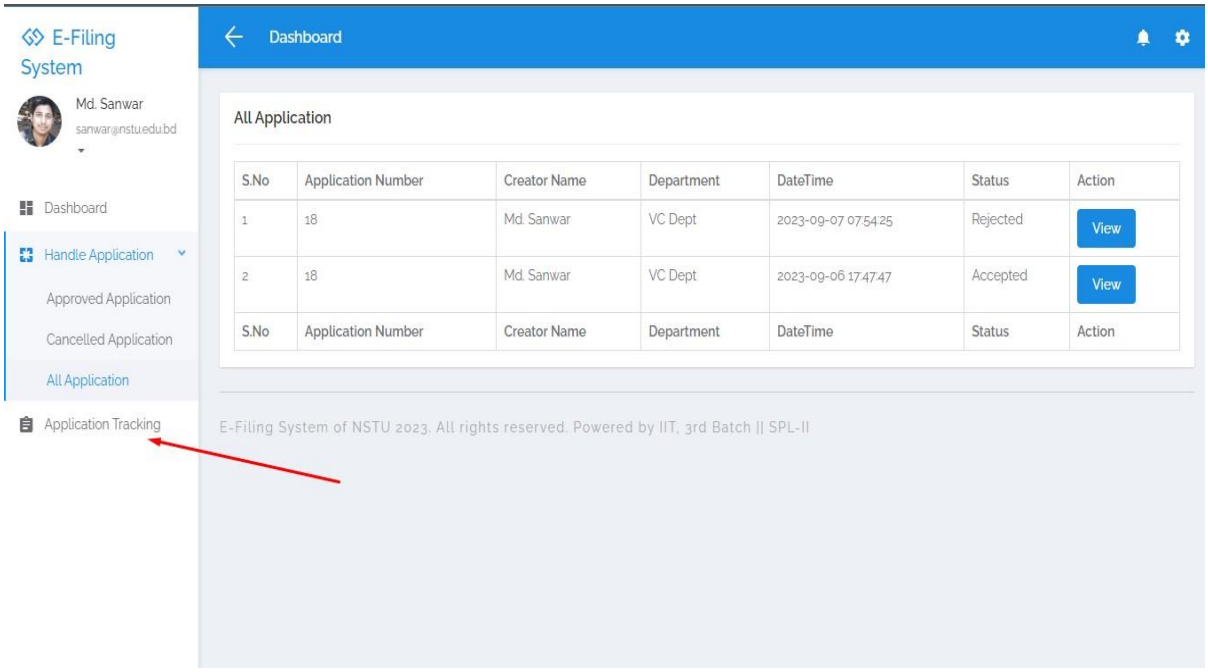

Figure 12: Application Track

2.1.11 Handle Application

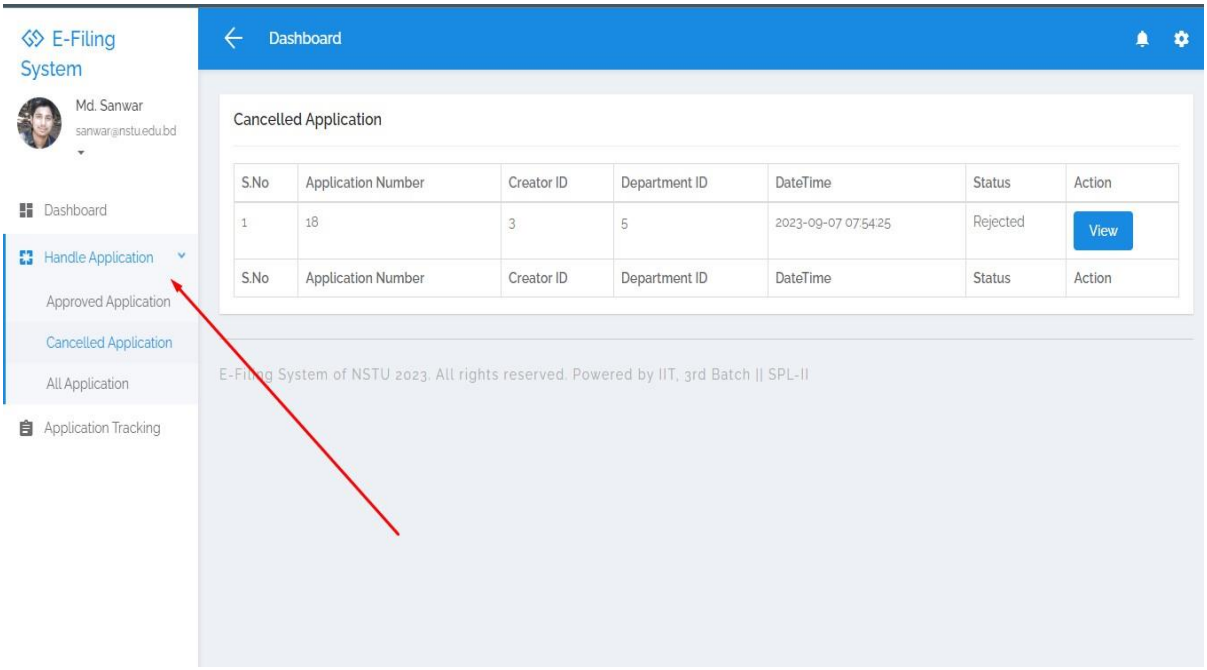

Figure 13: Handle Application

2.1.12 New Application

List of new application.

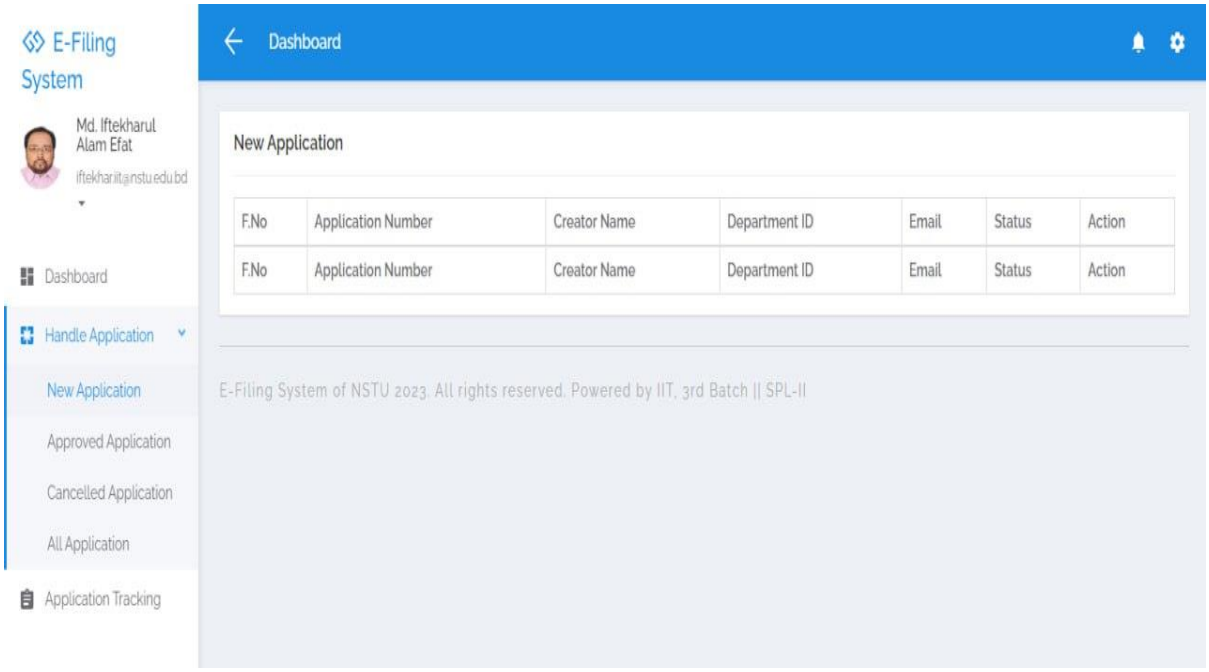

Figure 14: New Application

2.1.13 Approve Application

List of approved application.

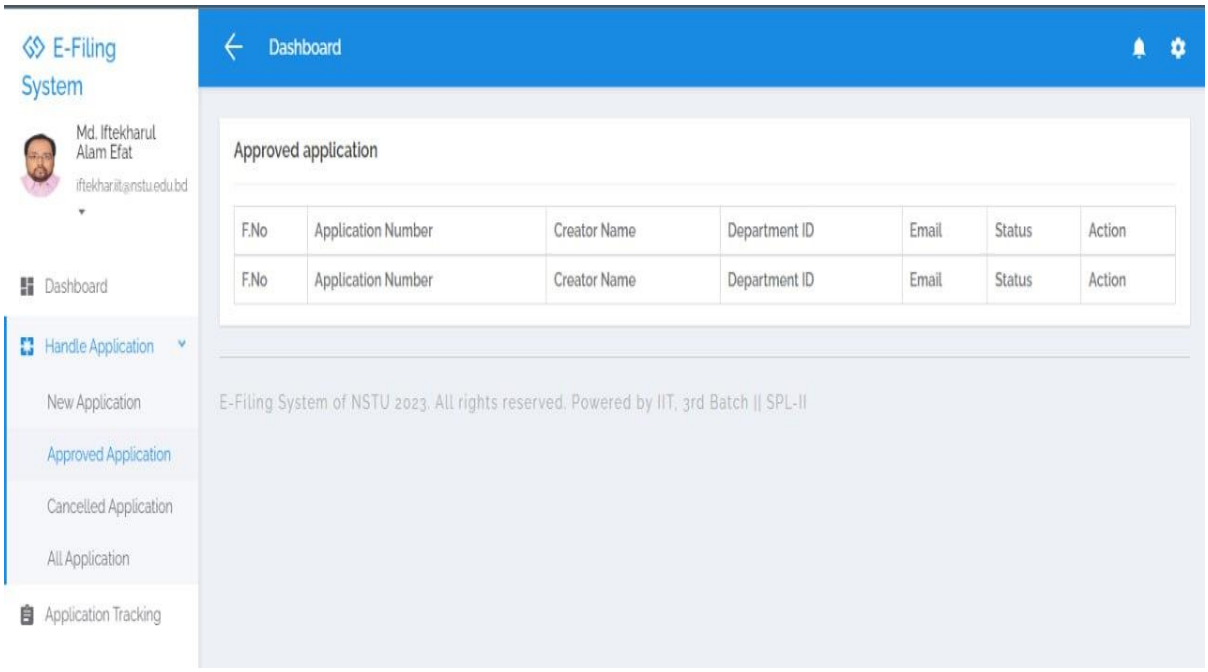

Figure 15: Approve Application

2.1.14 Cancelled Application

List of cancelled application.

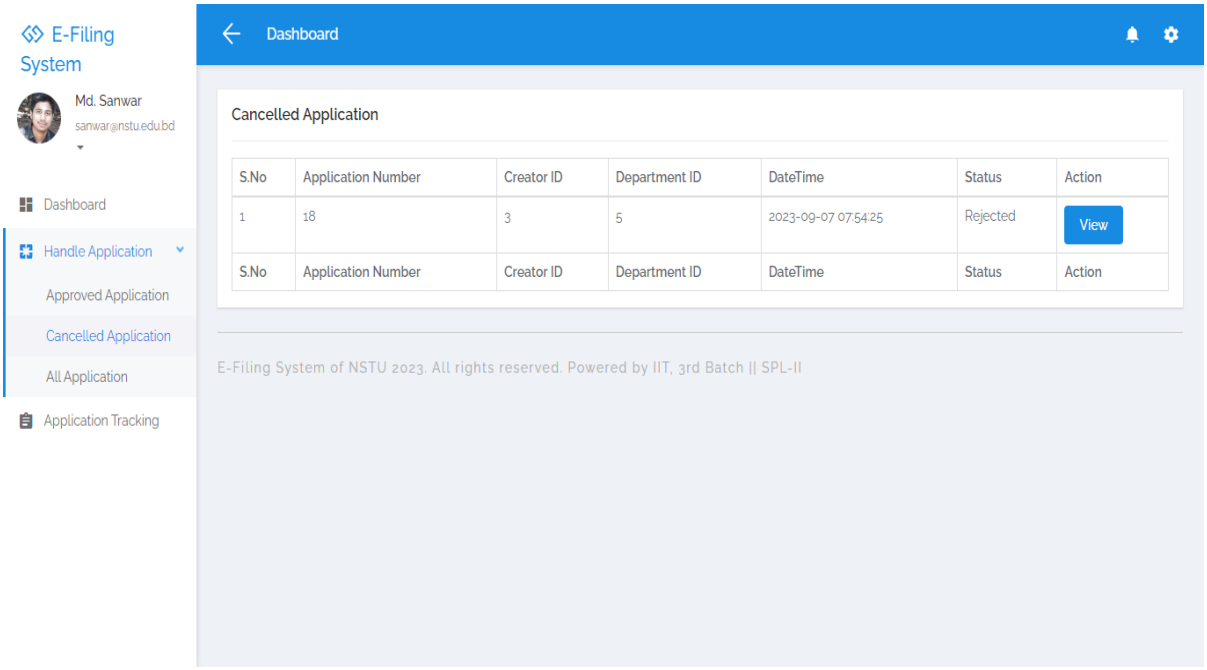

Figure 16: Cancelled Application

2.1.15 All Application

List of all application from here user can see application details by clicking on view button.

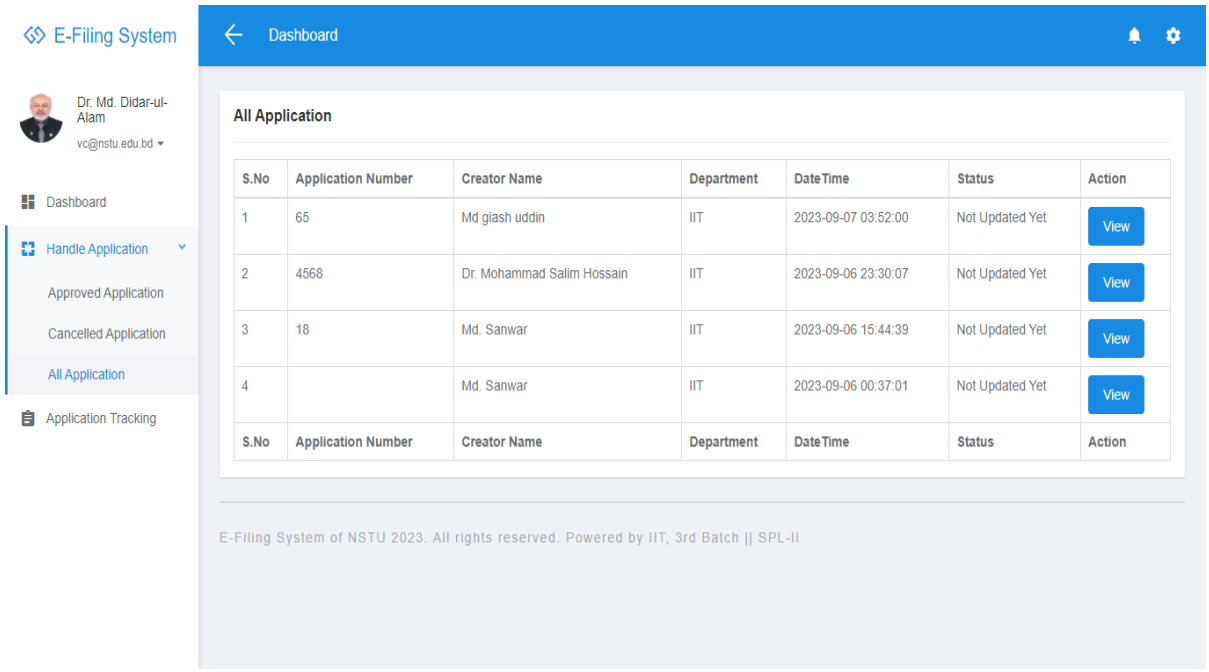

Figure 17: All Application

2.1.16 Application Details

Details of an application such as application number, title, date, final satus and comments.

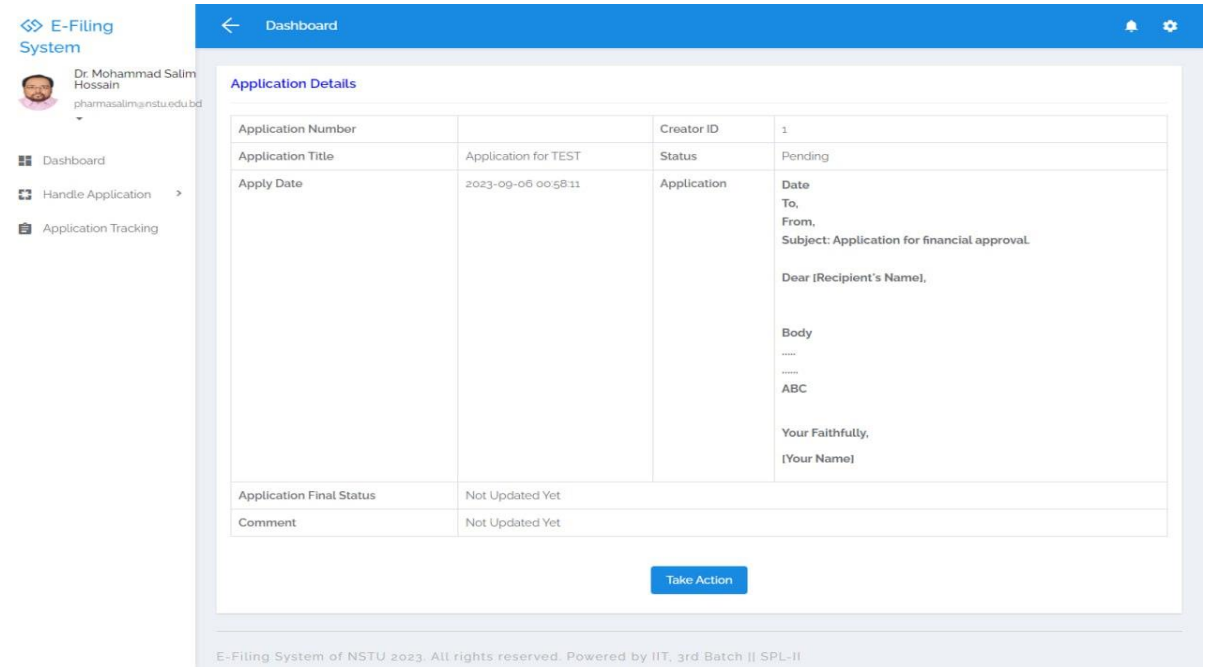

Figure 18: Application Details

2.1.17 Take Action

From here users can send application to another department and before sending they can add comment, attach file.

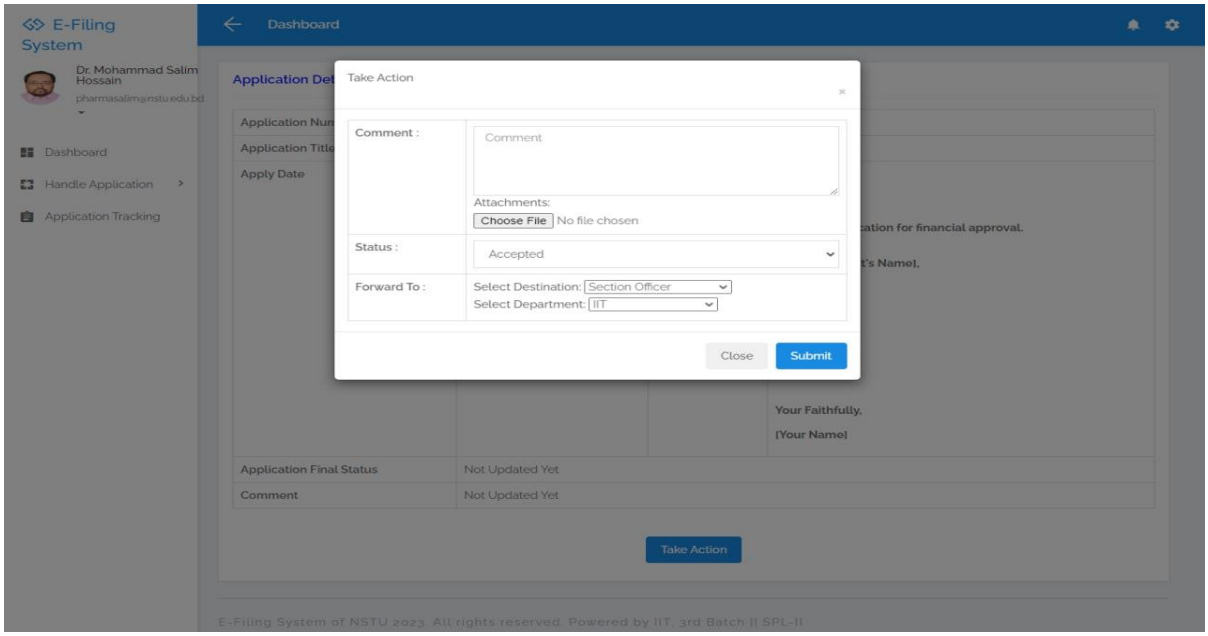

Figure 19: Take Action

2.1.18 Settings

From here users can go his/her profile, should be able to change password and logout.

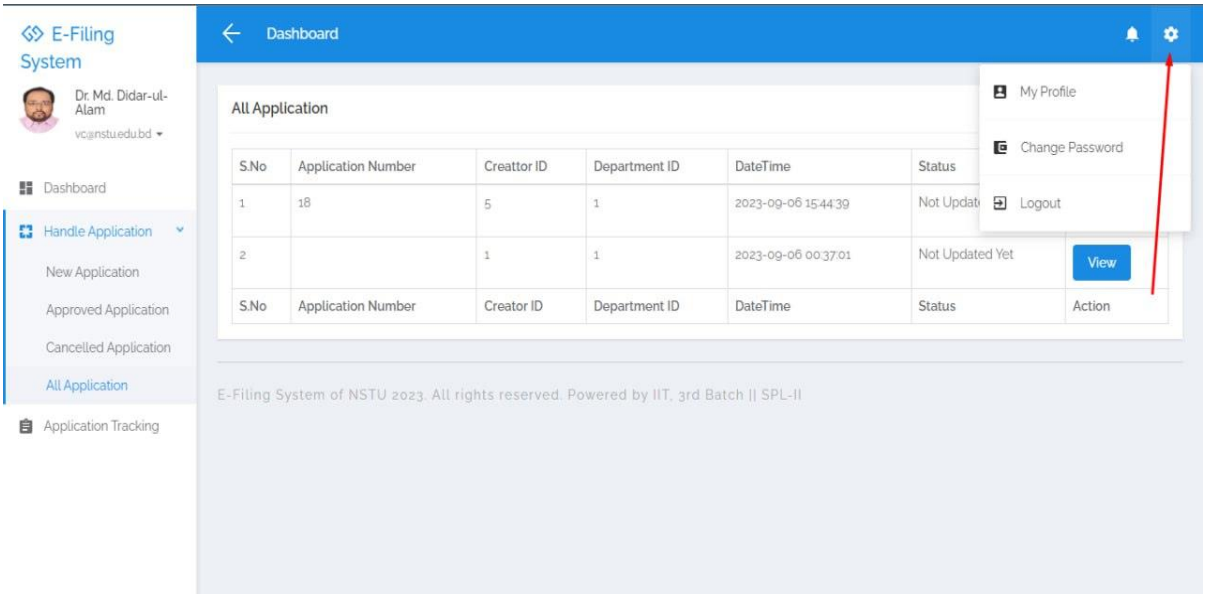

Figure 20: Settings

2.1.19 Profile

Show details of a users.

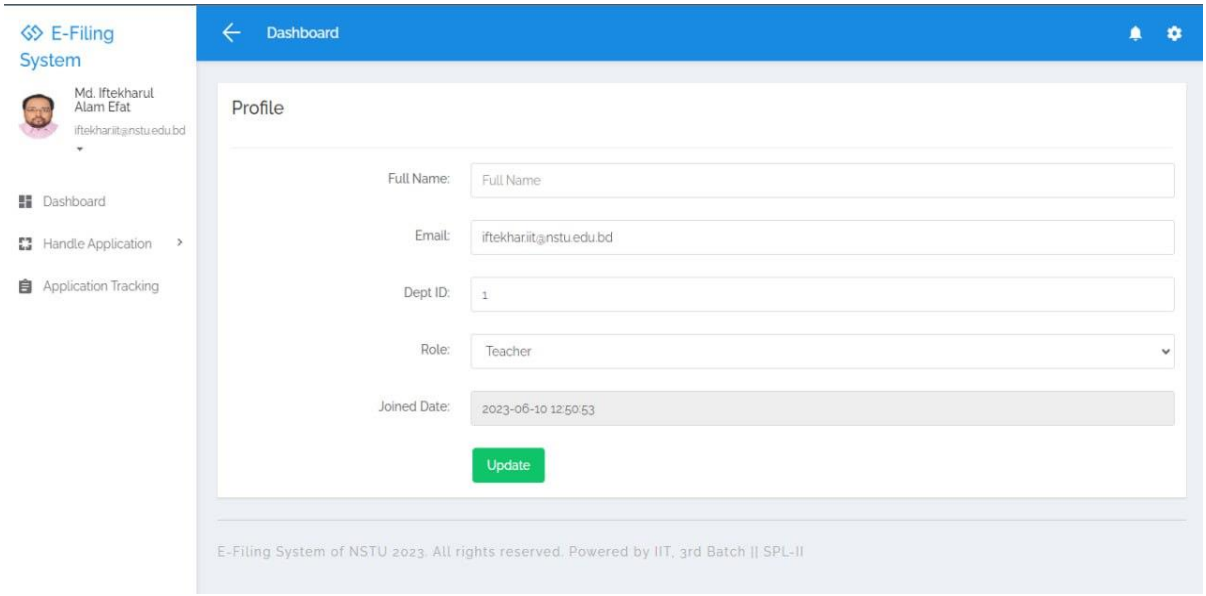

Figure 21: Profile

2.1.20 Change Password

User can change his/her password from here.

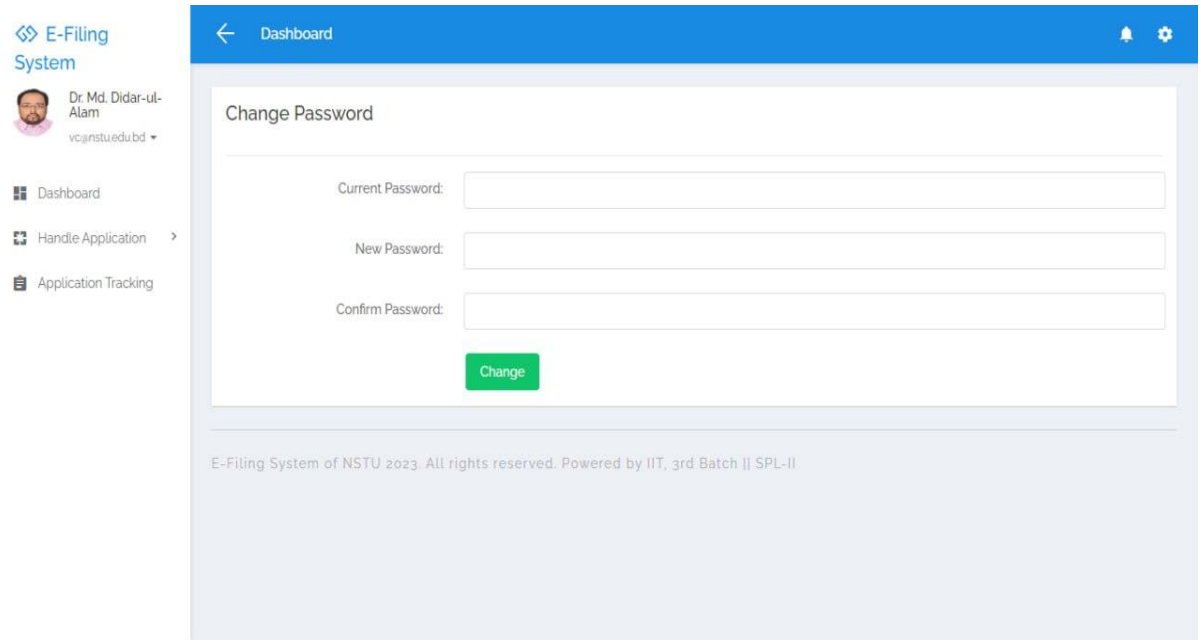

Figure 22: Change Password

3. Usecase Diagram

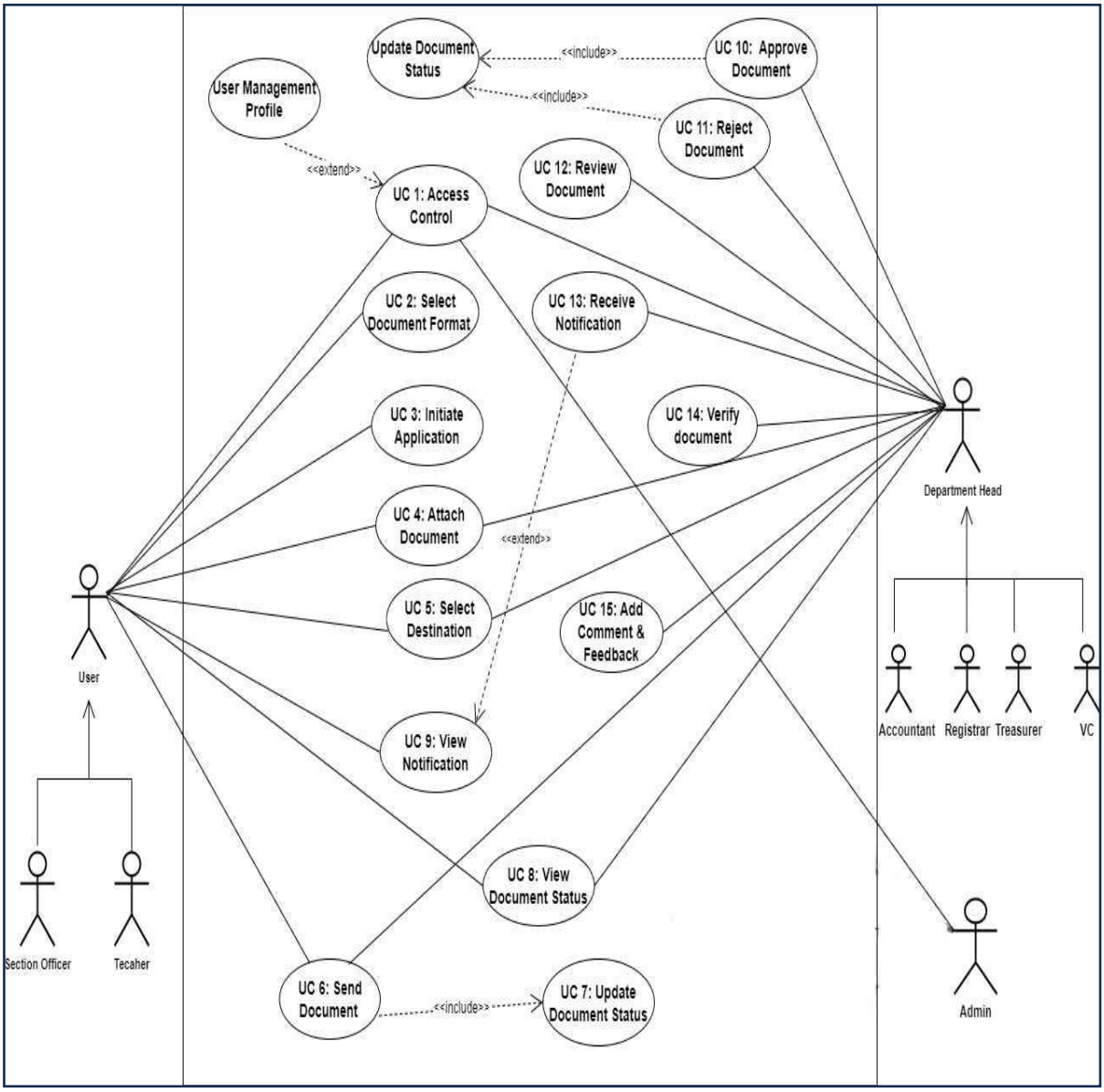

Figure 23: Usecase Diagram

4. Activity Diagram

4.1 Activity Diagram (Access Control)

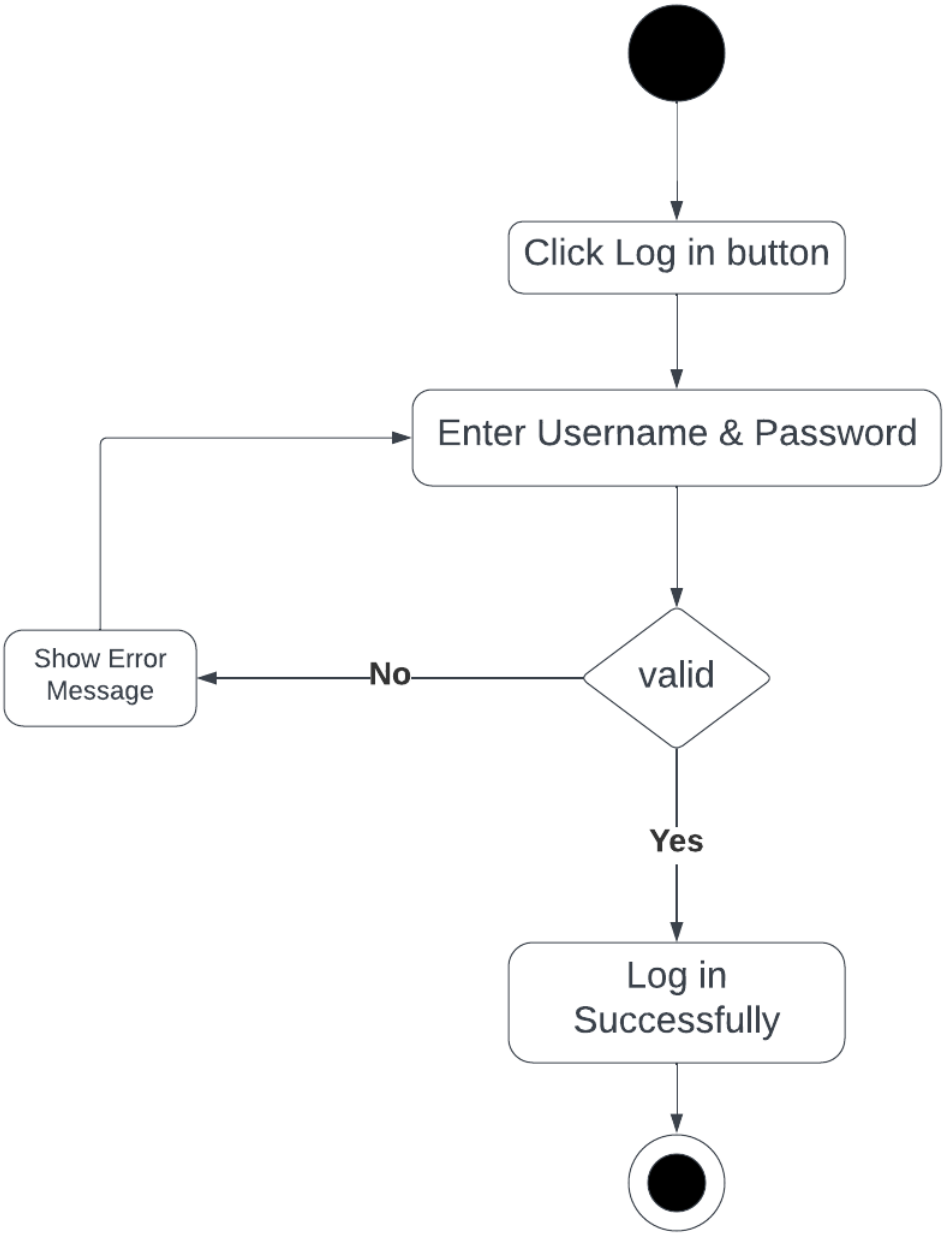

Figure 24: Access Control

4.2 Activity Diagram (Select Document Format)

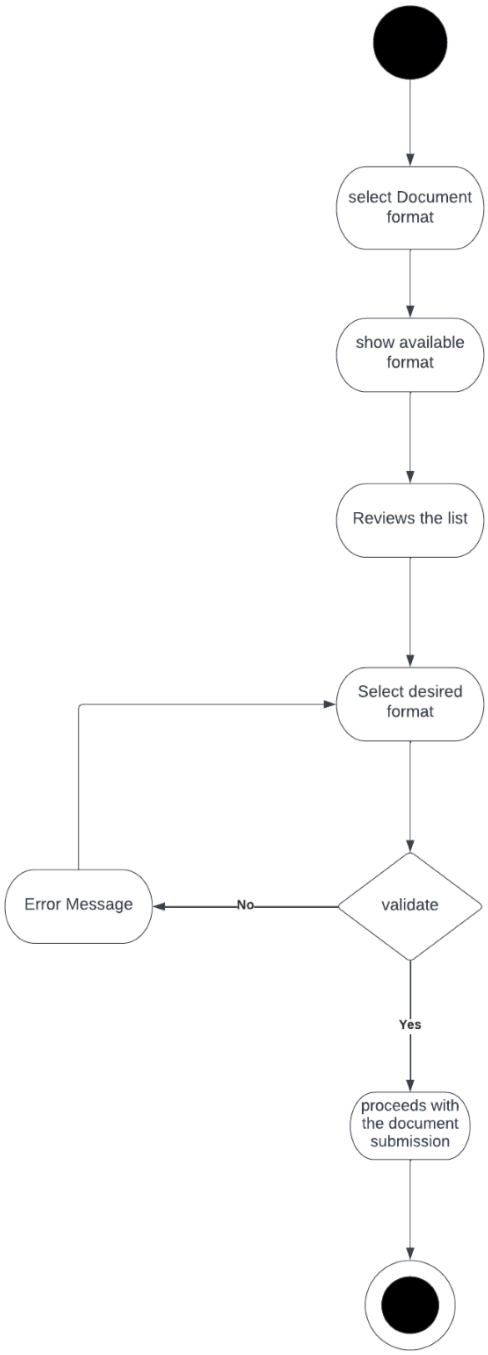

Figure 25: Select Destination

4.3 Activity Diagram (Initiate Document)

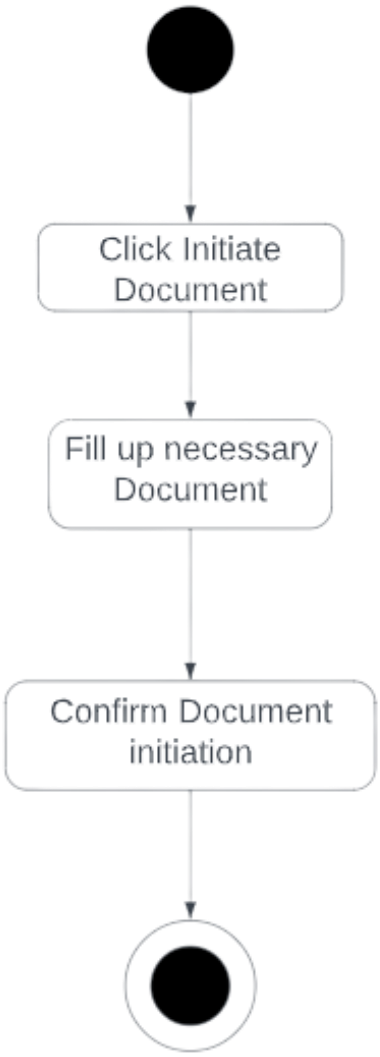

Figure 26: Initiate Document

4.4 Activity Diagram (Attach Document)

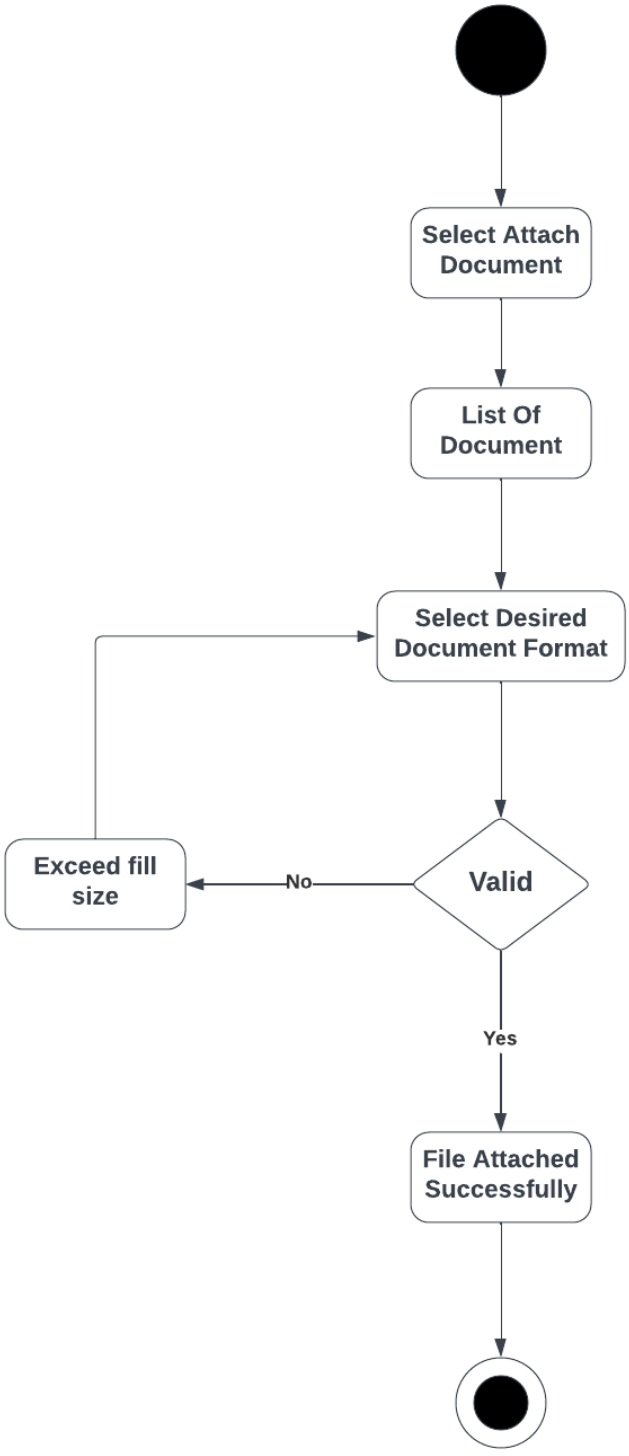

Figure 27: Attach Document

4.5 Activity Diagram (Update Document Status)

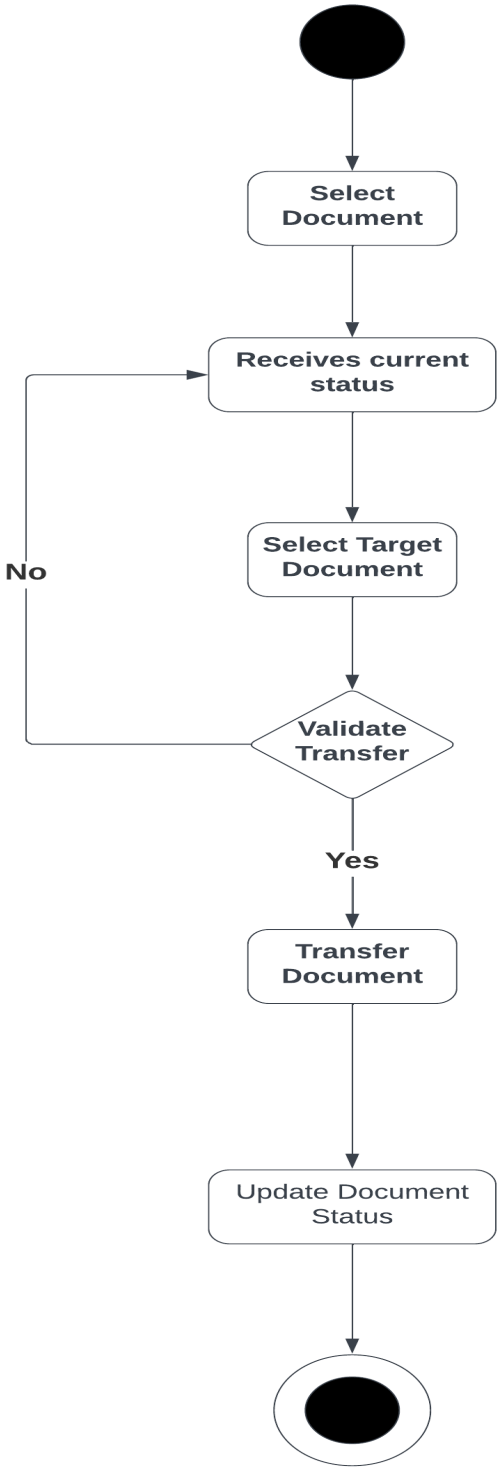

Figure 28: Update Document Status

4.6 Activity Diagram (View Document Status)

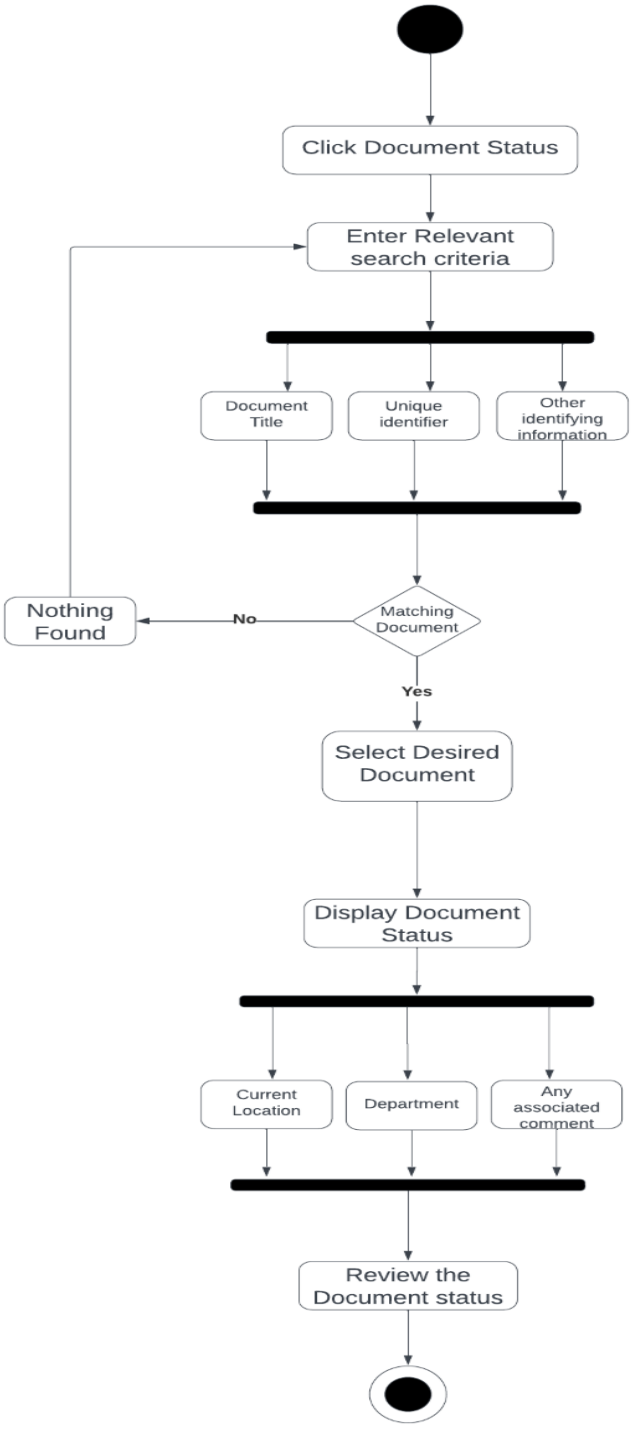

Figure 29: View Document Status

4.7 Activity Diagram (Approve Document)

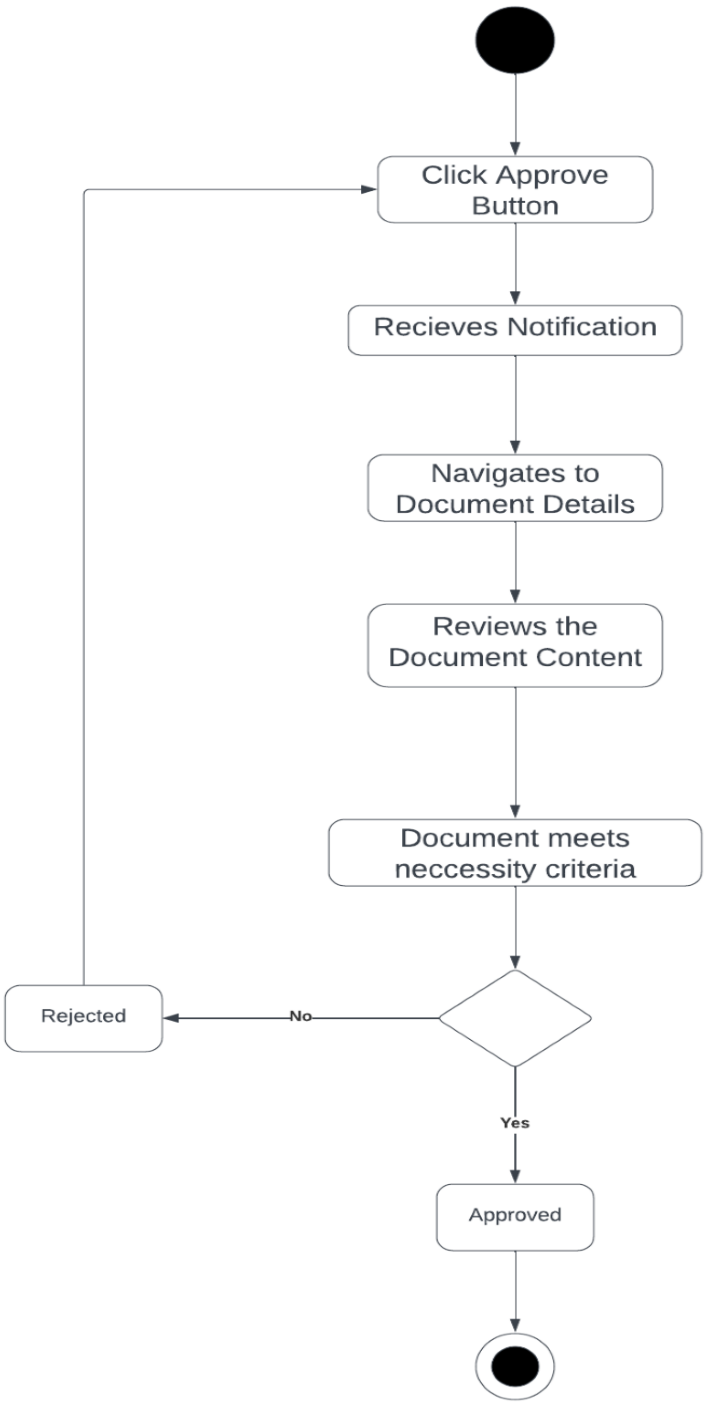

Figure 30: Approve Document

4.8 Activity Diagram (Review Document)

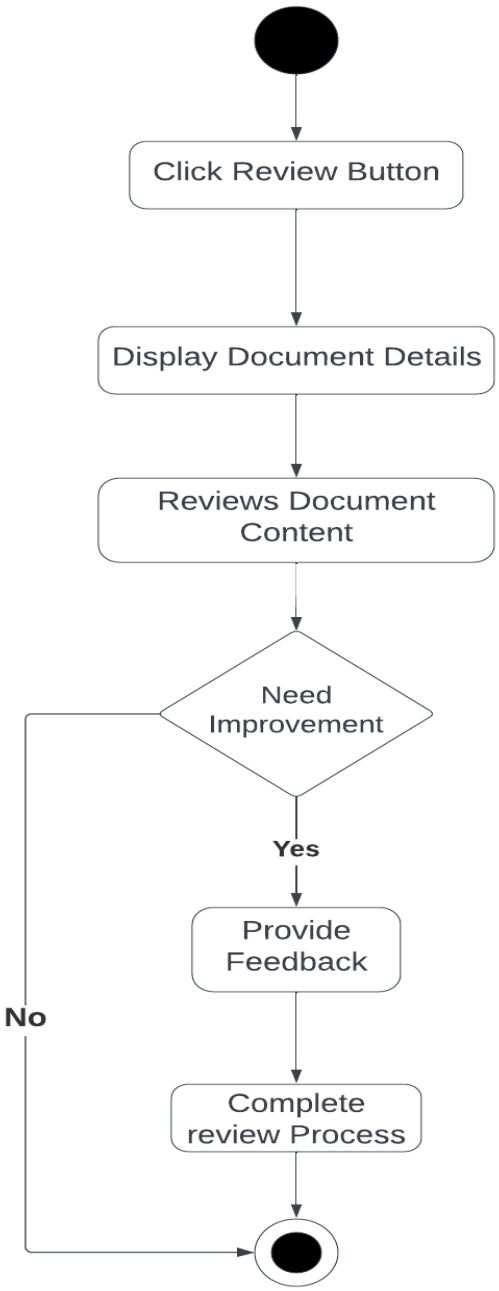

Figure 31: Review Document

4.9 Activity Diagram (Verify Document)

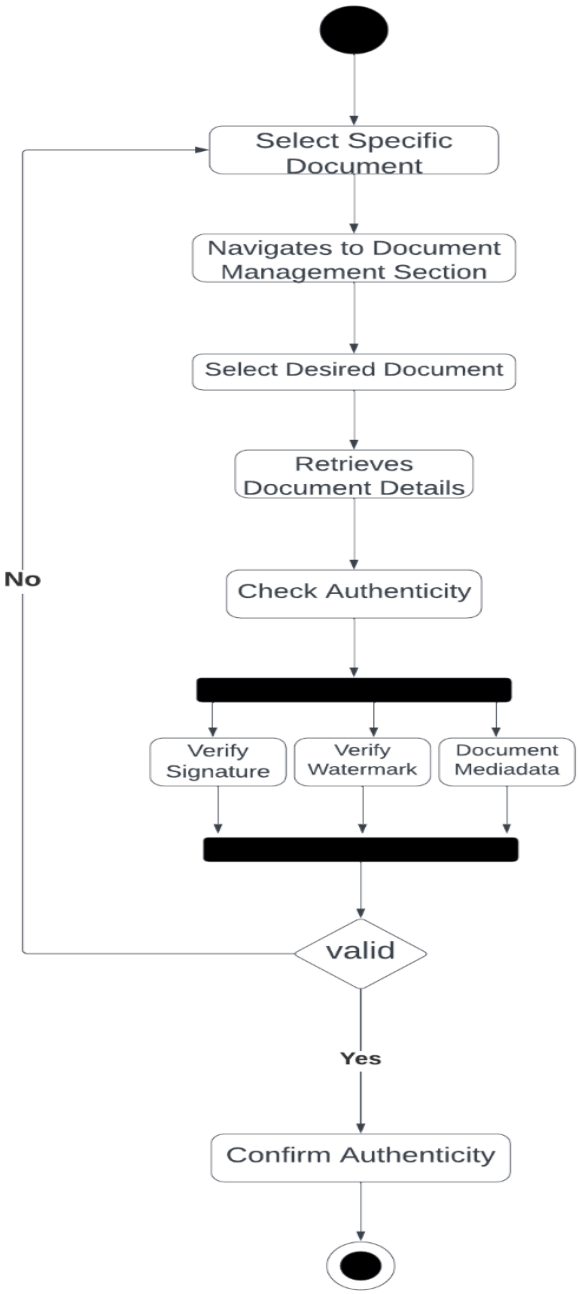

Figure 32: Verify Document

4.10 Activity Diagram (Add Comment and Feedback)

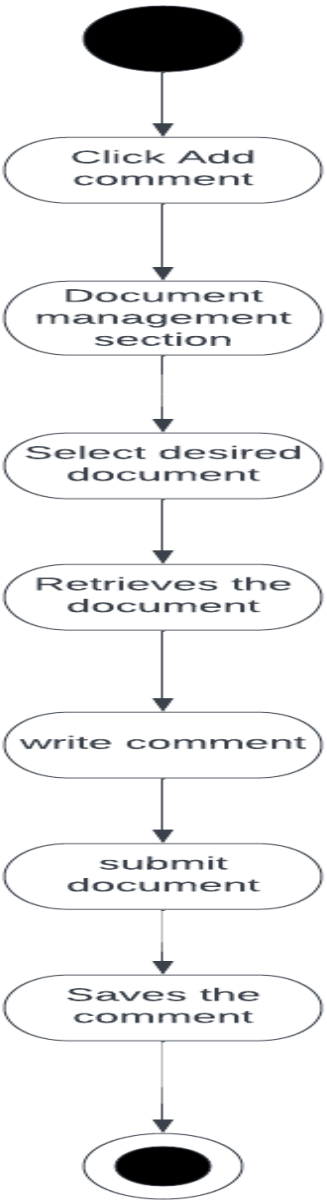

Figure 33: Add Comment

4.11 Activity Diagram (View Notification)

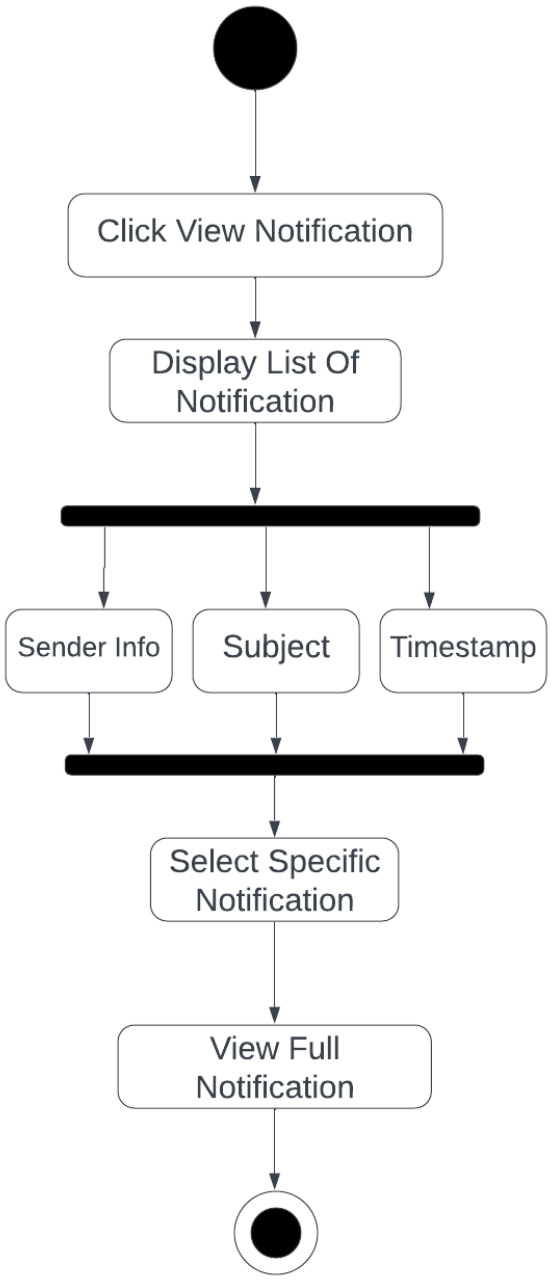

Figure 34: View Notification

5. Database Schema

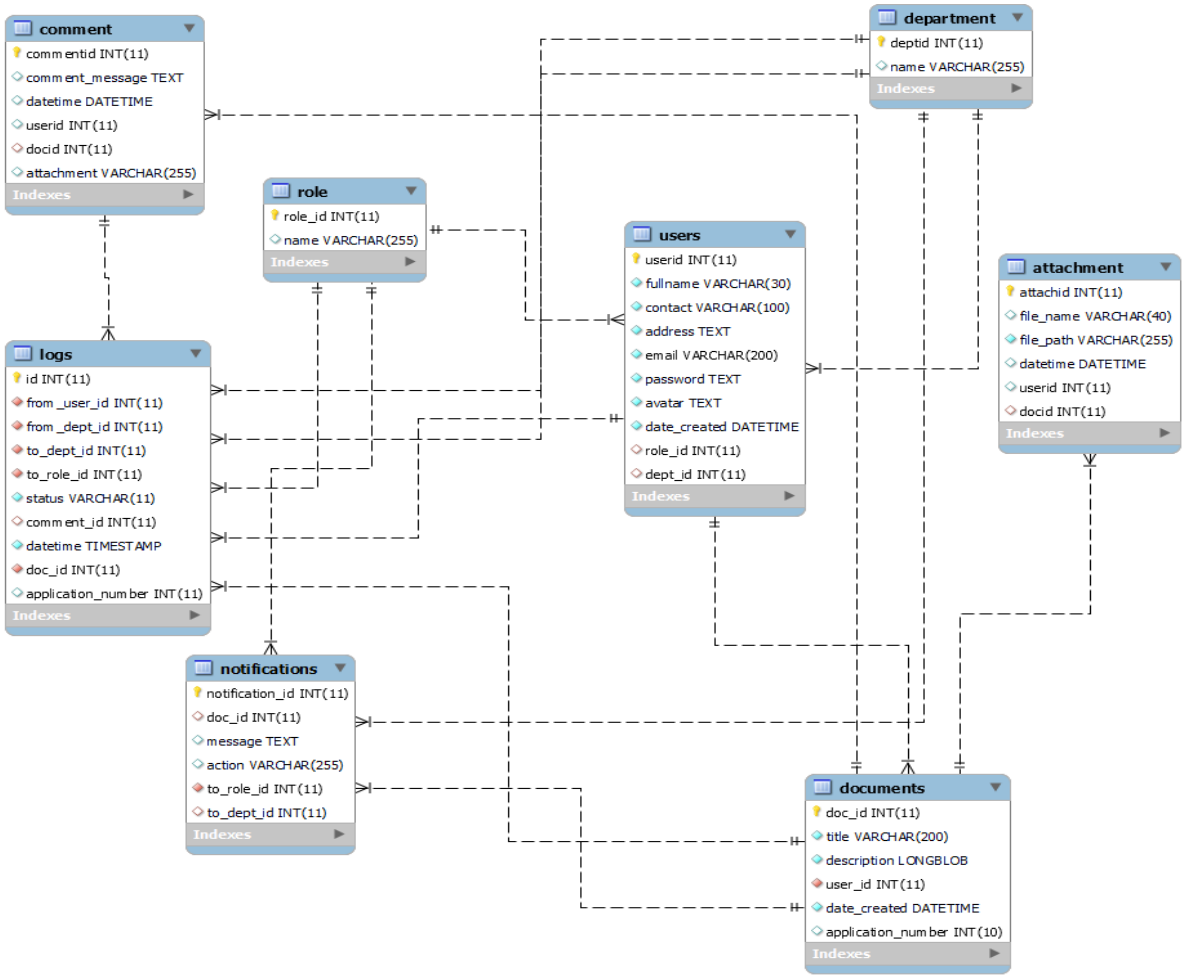

Figure 35: Database Schema

6. E-R Diagram

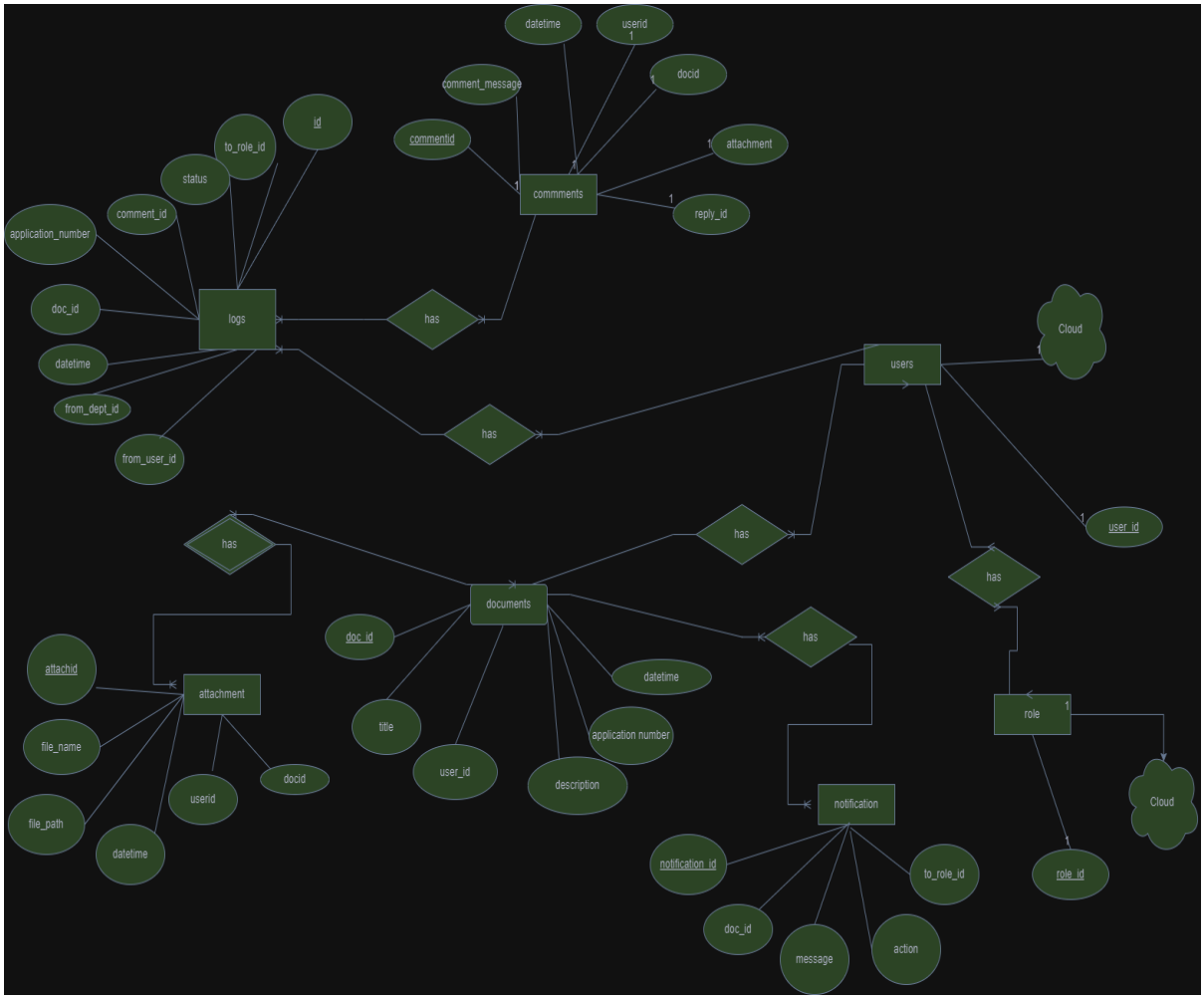

Figure 36: E-R diagram

7. SRS & Development Mapping

Use case no:	Use Case	Implementation
UC 01	*Access control*	*Login.php*
UC 02	*Select document format*	*Dashboard.php*
UC 03	*Initiate application*	*Application_write.php*
UC 04	*Attach document*	*Application_write.php*
UC 05	*Select destination*	*submitfile.php*
UC 06	*Send document*	*Application_write.php*
UC 07	*Update document status*	*Status.php*
UC 08	*View document status*	*Status.php*
UC 09	*View notification*	*Notification.php*
UC 10	*Approve document*	*View-application-details.php*
UC 11	*Reject document*	*Status.php*
UC 12	*Review document*	*View-application-details.php*
UC 13	*Receive document*	*Dashboard.php*
UC 14	*Verify document*	*View-application-details.php*
UC 15	*Add comment and feedback*	*View-application-details.php*

8. Challenges, Limitation and Future Work

8.1 Challenges

- Making a web application for the first time was a big challenge for us.
- Completing the project in time was challenges for us.
- The calculation for the Top solved and unsolved problem was a challenge for us
- Find out the same types of problem was a big challenge for us.

8.2 Limitation

- Dependency on Technology
- Integration Complexity
- User Adoption

8.3 Future work

- Integration with External Systems: Consider integrating the E-Filing System with other university systems.
- Electronic Signatures: Integrate electronic signature capabilities to enable users to digitally sign documents, enhancing the legality and security of electronic documents.