



CSE 6124 - SOFTWARE ENGINEERING FUNDAMENTALS

**LECTURE :TC3L
TUTORIAL SECTION : T11L
GROUP NUMBER : G6
VERSION:3.0**

ASSIGNMENT TOPIC :

Digital Scholarship Application and Tracking System

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Revisions

Version	Primary Author(s)	Description of Version	Date Completed
1.0.0	Nur Athirah binti Ishak Law Chin Xuan Amalina Saffieya binti Hamdan Nelson Ng Yaohan	Documentation part one about Digital Scholarship Application and Tracking System for Group 6. Added all the actors and use cases with the necessary diagrams such as activity diagram, class diagram and use case diagram.	14/12/25
2.0.0	Nur Athirah binti Ishak Law Chin Xuan Amalina Saffieya binti Hamdan Nelson Ng Yaohan	Documentation Part Two for Digital Scholarship Application and Tracking System for Group 6. Added system design models including subsystem design, interface design, component design, behavioral modeling (sequence diagrams and state diagrams), and deployment diagram. Updated data dictionary, data structures, and functional descriptions to align with Part One use cases.	25/1/26
3.0.0	Nur Athirah binti Ishak Law Chin Xuan Amalina Saffieya binti Hamdan Nelson Ng Yaohan	Information about the revision. This table does not need to be filled in whenever a document is touched, only when the version is being upgraded.	08/02/26

1 Project Management

1.1 Team Members

Name	Actor
Nur Athirah binti Ishak	Student
Nelson Ng Yaohan	Scholarship Committee
Law Chin Xuan	Reviewer
Amalina Saffieya binti Hamdan	Admin

1.2 Problem statement

The current scholarship application and tracking system is mostly done manually and spread across different tools such as paper forms, emails, and spreadsheets. This makes it hard for the administrator to manage the information properly and keeps everything organized in one place. As the process depends heavily on manual work, there is a higher chance of mistakes, missing data, or loss of information, which can affect the overall efficiency of managing scholarship applications.

Also, students often feel confused during the application process because there is no proper system to guide them clearly. Information about eligibility requirements, documents needed, and important deadlines is sometimes unclear or difficult to access. As a result, many students submit incomplete applications, miss deadlines, or are unsure about the status of their application. This situation can be frustrating and time-consuming for applicants.

For administrators and reviewers, handling applications manually takes a lot of time and effort, especially when applications are submitted in different formats and through different channels. It becomes difficult to track applications, check eligibility, and make fair decisions quickly. The lack of a proper digital system slows down the evaluation process and creates unnecessary delays. Therefore, there is a strong need for a centralized digital scholarship application and tracking system to make the whole process more organised, efficient, and fair for everyone involved.

1.3 Project Plan

WEEK/ PROGRESS	W 1	W 2	W 3	W 4	W 5	W 6	W 7	W 8	W 9	W 10	W 11	W 12	W 13	W 14
PLANNING 1.Define project objectives and scope 2.Assign team roles 3.Research similar systems or references 4.Identify project objectives and scope														
ANALYSIS 1.Gather use cases for all actors 2.Document assumptions and dependencies														
DESIGN 1.Design Diagrams (activity, use case, class)														

IMPLEMENTATION													
1.Consult with lecturer 2.Fix issues, get feedback, and adjust design													
TESTING													
1.Prepare final documentation 2.Collect team feedback for improvements													

2 System Overview

2.1 Description

Actors	Major Processes
Student	<ol style="list-style-type: none"> 1. Student logs into the system using secure credentials 2. Student accesses the student dashboard 3. Student views available scholarship listings 4. Student reviews scholarship details, requirements, and deadlines 5. Student selects a scholarship and starts a new application 6. Student fills in personal information and academic details 7. Student uploads required supporting documents 8. Student enters family background and involvement in activities 9. Student writes and submits a personal statement 10. Student submits the scholarship application 11. Student tracks application status (Submitted / Under Review / Accepted / Rejected) 12. Student updates profile information when needed
Reviewer	<ol style="list-style-type: none"> 1. Reviewer login into the system using secure credentials 2. Reviewer accesses the reviewer dashboard 3. Reviewer views assigned scholarship applications

	<ol style="list-style-type: none"> 4. Reviewer reviews student application details and uploaded documents 5. Reviewer evaluates applications based on eligibility criteria 6. Reviewer provides scores and review comments 7. Reviewer updates application status (Eligible / Rejected / Pending) 8. Reviewer submits application review decisions 9. Reviewer tracks reviewed and pending applications
Admin	<ol style="list-style-type: none"> 1. Admin login into the system using secure credentials 2. Admin accesses the dashboard 3. Admin manage the user accounts 4. Admin creates scholarship listing 5. Admin monitors and updates application stages. 6. Admin assign reviewers to applications 7. Admin review system activity logs 8. Admin generates system report

2.2 Tasks

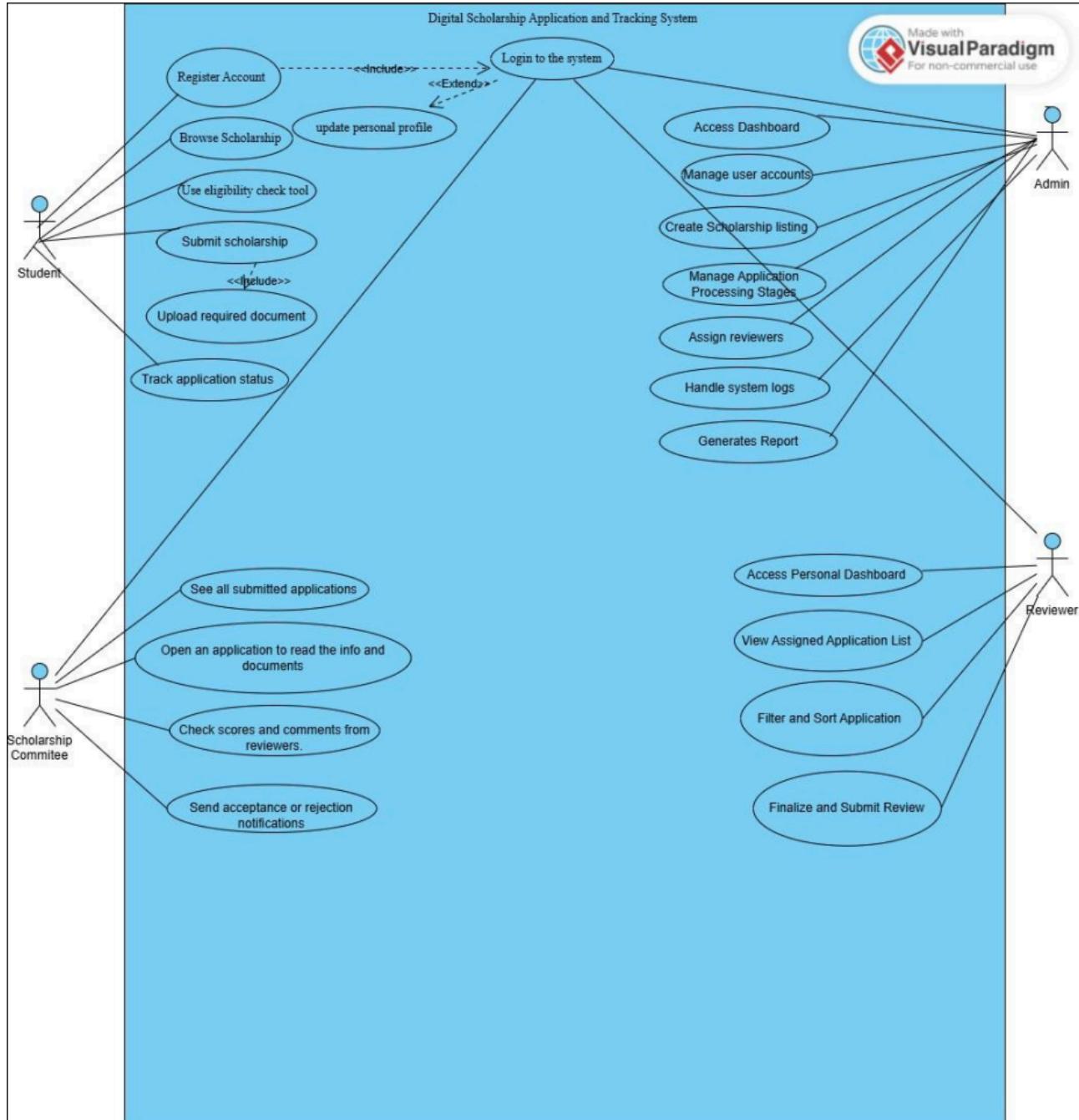
Team Member	Tasks
Nur Athirah binti Ishak	Designed and developed the student module, implemented student dashboard functionalities, enabled application of scholarships, handled document uploads and eligibility checking, implemented application submission and status tracking features, and prepared documentation for testing and system description.
Law Chin Xuan	Designed and developed the reviewer module, reviewed assigned scholarship applications, evaluated student eligibility and documents, provided scores and comments, updated application status, and prepared documentation for testing and system description.
Amalina Saffieya binti Hamdan	Designed and developed the admin module, managed scholarship creation, monitored applications, assigned reviewers, generated reports, maintained system logs and prepared documentation for testing and system description.

2.3 Modules Developed

Team member	Modules Developed	Assumptions
Nur Athirah binti Ishak	<ul style="list-style-type: none"> ● Login and registration module ● Student dashboard module ● Profile management module ● Scholarship browsing module ● Scholarship application module ● Eligibility checking module ● Document upload module ● Application status tracking module 	<p>Authenticated Access: Students must be registered and logged in to access the system features.</p> <p>Accurate Information: Students are assumed to provide truthful and accurate personal, academic, and financial information.</p> <p>Document Validity: Uploaded documents are assumed to be valid, clear, and in the required format (e.g., PDF).</p> <p>Eligibility Awareness: Students are expected to understand and meet the scholarship eligibility criteria before applying.</p> <p>Stable Internet Access: Students are assumed to have stable internet access during application submission.</p>
Law Chin Xuan	<ul style="list-style-type: none"> ● Login module ● Dashboard module ● Application review module ● Student detail viewing module ● Scoring and comments module ● Application status update module 	<p>Assigned Applications: Reviewers only review applications assigned to them.</p> <p>Eligibility Evaluation: Reviewers are assumed to have basic knowledge to evaluate student eligibility and documents.</p> <p>Stable System Access: Reviewers always have stable access to the system during reviews.</p> <p>Data Integrity: Application data and uploaded documents are assumed to be complete and accurate.</p>
Amalina Saffieya binti Hamdan	<ul style="list-style-type: none"> ● Login module ● Dashboard module ● User management module ● Scholarship management module ● Application management module 	<p>Limited Number of Admins The system assumes there are fewer than 10 administrators.</p> <p>Proper Training Admins are assumed to have basic</p>

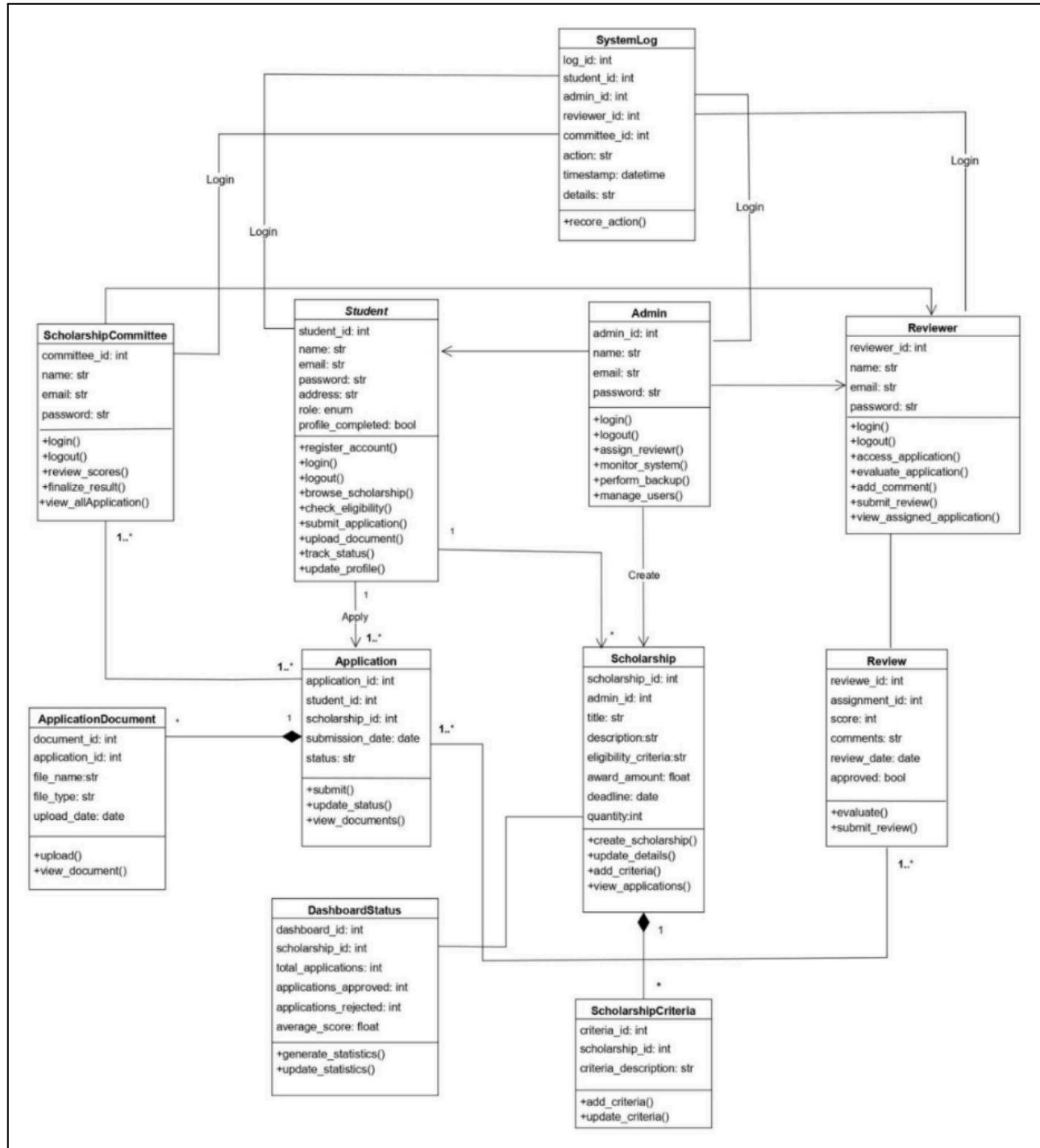
	<ul style="list-style-type: none">● Reviewer assignment module● System log module● Report generation module	system training. Database Reliability The database system is assumed to be stable and secure. Internet Access Admins always have stable internet access.
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2.4 Use Case Diagram



3 Requirements

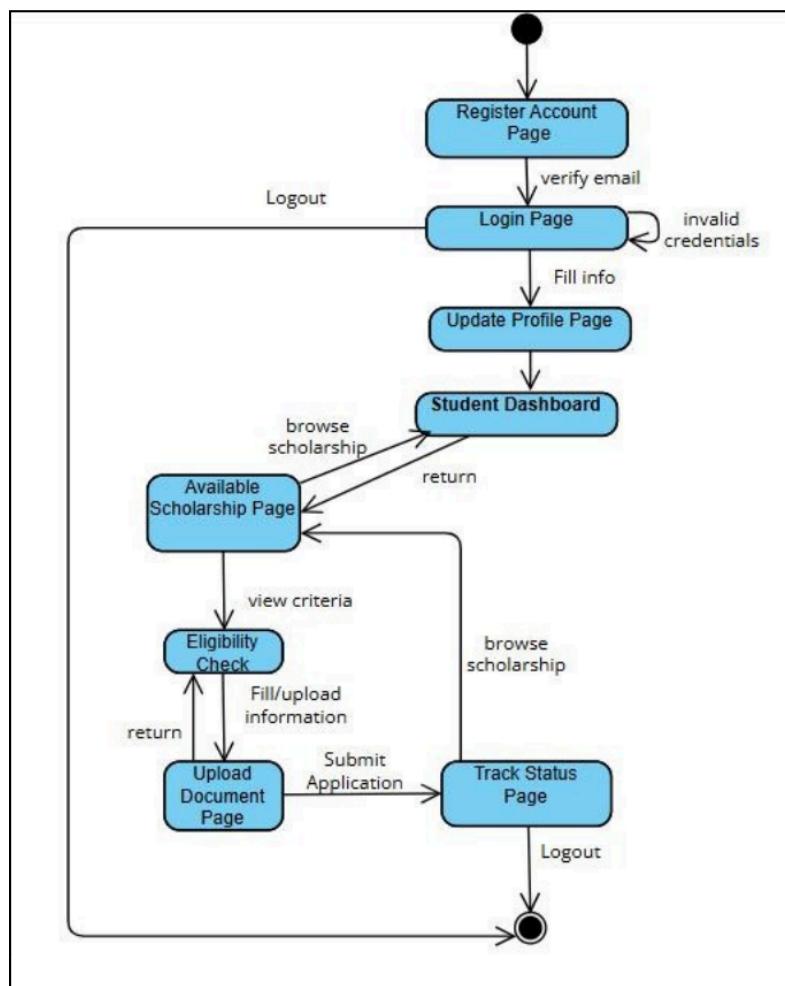
3.1 Class Diagrams / ERD



3.2 State Diagrams

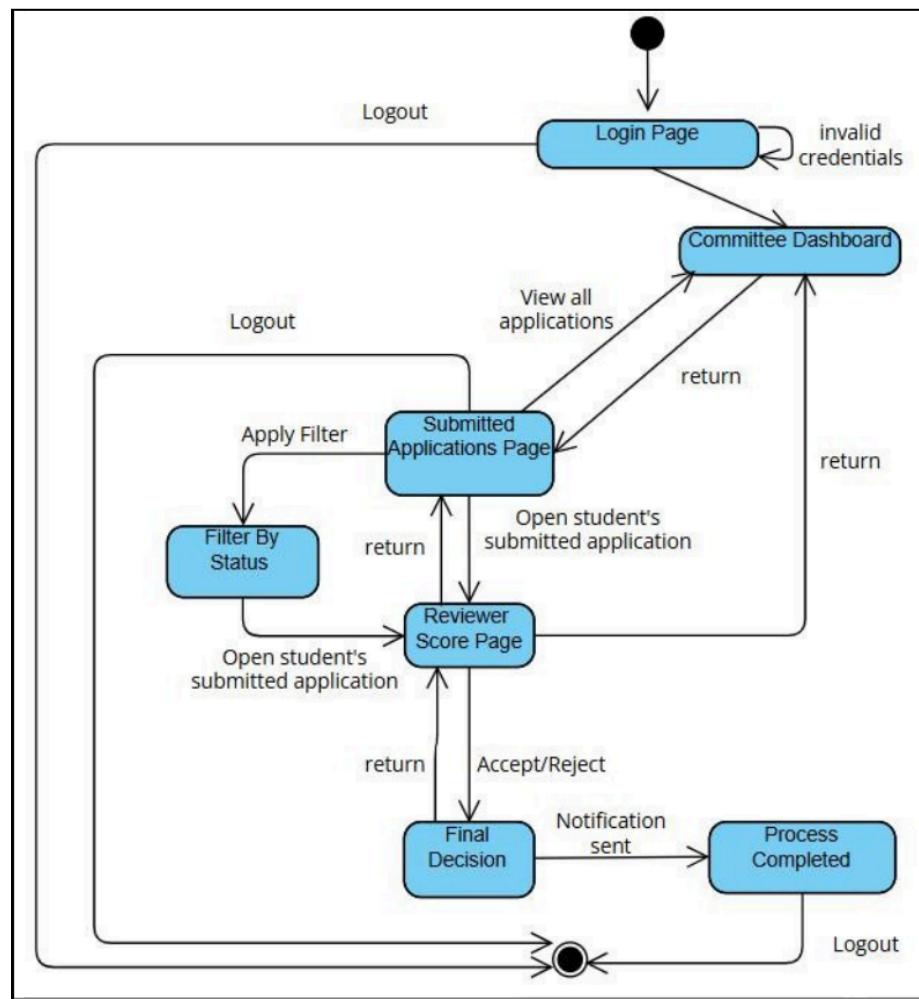
3.2.1 Student

After students register and log into the system, they are directed to the student dashboard. From the dashboard, students can browse available scholarships, view scholarship criteria, use the eligibility check tool, update their profile, upload required documents, submit applications, and track application status. Each completed action returns the student to the dashboard. Once an application is submitted, the application enters the review process and the student can only track its status until a final decision is made.



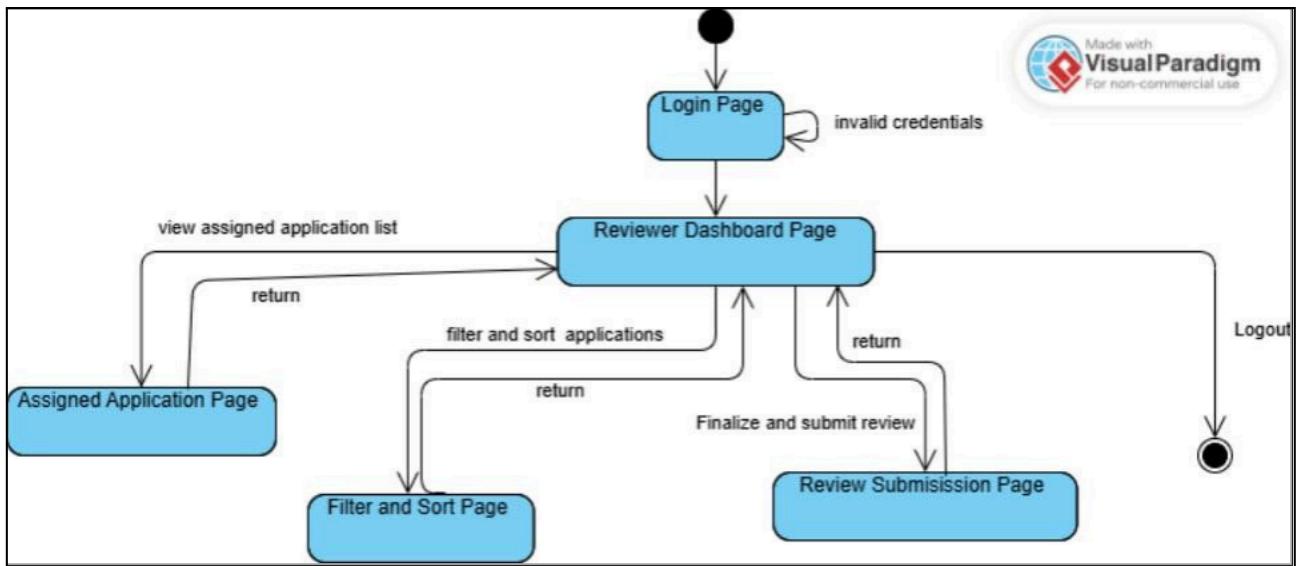
3.2.2 Scholarship Committee

After scholarship committee members log into the system, they are directed to the committee dashboard. From the dashboard, they can view all submitted applications, open individual applications to review student details and documents, check reviewer scores and comments, decide final results, and send acceptance or rejection notifications. Each action returns to the dashboard upon completion, and the process ends when the committee logs out.



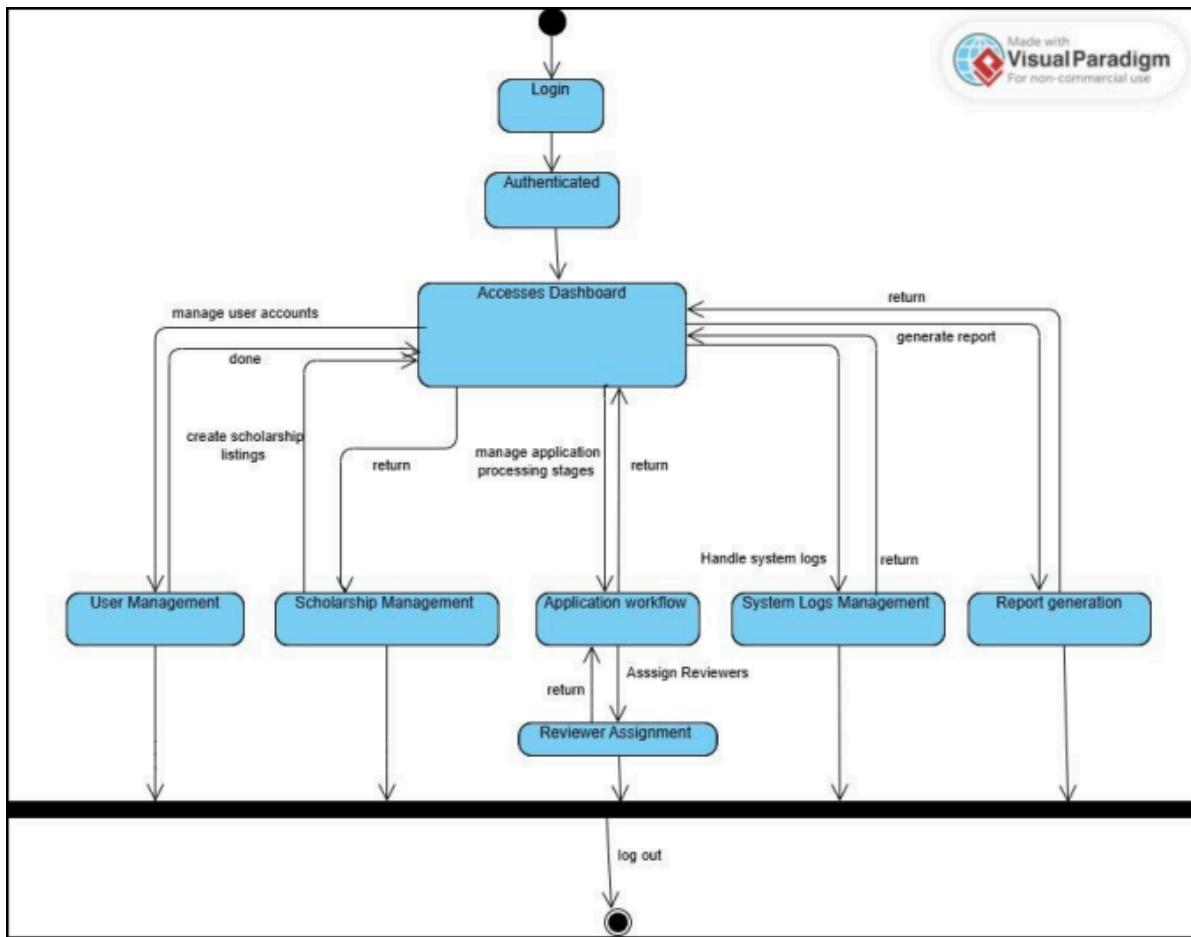
3.2.3 Reviewer

After reviewers log into the system, they access their personal dashboard which serves as the home page. From here, they can access the 5 reviewer use cases which are view assigned application list, filter and sort applications, and finalize and submit review. Each function returns to the dashboard upon completion.



3.2.4 Admin

Administrators log into the system and are directed to the admin home page with access to comprehensive management tools. From here, they can access all 9 admin use cases which are Manage User Accounts, Create Scholarship Listings, Assign Reviewers, Manage Application Processing Stages, Access Dashboard, Handle System Logs, and Generate Reports. Each function returns to the dashboard upon completion.



4 Design

4.1 Data Dictionary

Student						
Attribute Name	Data Type	Length	PK/FK	Required?	Null/ Not Null	Description
student_id	int	11	PK	Yes	Not Null	Unique identifier for student
name	string	100	-	Yes	Not Null	Student full name
email	string	100	-	Yes	Not Null	Student email address
password	string	255	-	Yes	Not Null	Encrypted password
address	string	255	-	No	Null	Student home address
role	enum	20	-	Yes	Not Null	User role (student)
Profile_completed	boolean	1	-	Yes	Not Null	Indicates whether profile is completed

Admin						
Attribute Name	Data Type	Length	PK/FK	Required?	Null/ Not Null	Description
admin_id	int	11	PK	Yes	Not Null	Unique identifier for admin
name	string	100	-	Yes	Not Null	Admin full name
email	string	100	-	Yes	Not Null	Admin email
password	string	255	-	Yes	Not Null	Encrypted password

Reviewer						
Attribute Name	Data Type	Length	PK/FK	Required?	Null/ Not Null	Description
reviewer_id	int	11	PK	Yes	Not Null	Unique identifier for reviewer
name	string	100	-	Yes	Not Null	Reviewer full name
email	string	100	-	Yes	Not Null	Reviewer email
password	string	255	-	Yes	Not Null	Encrypted password

ScholarshipCommittee						
Attribute Name	Data Type	Length	PK/FK	Required?	Null/ Not Null	Description
committee_id	int	11	PK	Yes	Not Null	Unique identifier for Committee
name	string	100	-	Yes	Not Null	committee full name
email	string	100	-	Yes	Not Null	committee email
password	string	255	-	Yes	Not Null	Encrypted password

Scholarship						
Attribute Name	Data Type	Length	PK/FK	Required?	Null/ Not Null	Description
scholarship_id	int	11	PK	Yes	Not Null	Unique identifier for scholarship

Software Design Specification for ABC System (Version 3.0)

admin_id	int	11	FK	Yes	Not Null	Admin who created scholarship
title	string	150	-	Yes	Not Null	Scholarship title
description	string	-	-	Yes	Not Null	Scholarship description
eligibility_criteria	string	-	-	Yes	Not Null	Eligibility rules
award_amount	float	-	-	Yes	Not Null	Award value
deadline	date	-	-	Yes	Not Null	Application deadline
quantity	int	5	-	Yes	Not Null	Number of awards available

Application						
Attribute Name	Data Type	Length	PK/FK	Required?	Null/ Not Null	Description
application_id	int	11	PK	Yes	Not Null	Unique identifier for application

Software Design Specification for ABC System (Version 3.0)

student_id	int	11	FK	Yes	Not Null	Applicant student
Scholarship_id	int	11	FK	Yes	Not Null	Applied scholarship
submission_date	date	-	-	Yes	Not Null	Date submitted
status	string	30	-	Yes	Not Null	Application status

ApplicationDocument						
Attribute Name	Data Type	Length	PK/FK	Required?	Null/ Not Null	Description
document_id	int	11	PK	Yes	Not Null	Unique identifier for document
application_id	int	11	FK	Yes	Not Null	Related application
file_name	string	150	-	Yes	Not Null	Document file name
file_type	string	50	-	Yes	Not Null	Type of document
upload_date	date	-	-	Yes	Not Null	Upload date

Review						
Attribute Name	Data Type	Length	PK/FK	Required?	Null/ Not Null	Description
review_id	int	11	PK	Yes	Not Null	Unique identifier for review
assignment_id	int	11	FK	Yes	Not Null	Assigned application
score	int	10	-	Yes	Not Null	Reviewer score
comments	string	-	-	No	Null	Reviewer comments
reviewer_date	date	-	-	Yes	Not Null	Date reviewed
approved	boolean	1	-	Yes	Not Null	Approval status

ScholarshipCriteria						
Attribute Name	Data Type	Length	PK/FK	Required?	Null/ Not Null	Description
criteria_id	int	11	PK	Yes	Not Null	Unique identifier

Software Design Specification for ABC System (Version 3.0)

						for criteria
scholarship_id	int	11	FK	Yes	Not Null	Related scholarship
Criteria_descriptio n	string	-	-	Yes	Not Null	Criteria details

DashboardStatus						
Attribute Name	Data Type	Length	PK/FK	Required?	Null/ Not Null	Description
Dashboard_id	int	11	PK	Yes	Not Null	Unique identifier for dashboard
scholarship_id	int	11	FK	Yes	Not Null	Scholarship monitored
total_applications	int	5	-	Yes	Not Null	Total applicantions
application_approved	int	5	-	Yes	Not Null	Approved count
application_rejected	int	5	-	Yes	Not Null	Rejected count

average_score	float	-	-	Yes	Not Null	Average review score
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SystemLog						
Attribute Name	Data Type	Length	PK/FK	Required?	Null/ Not Null	Description
log_id	int	11	PK	Yes	Not Null	Unique identifier for log
student_id	int	11	FK	No	Null	Related student
admin_id	int	11	FK	No	Null	related admin
reviewer_id	int	11	FK	No	Null	Related reviewer
committee_id	int	11	FK	No	Null	Related committee
action	string	100	-	Yes	Not Null	action performed
timestamp	datetime	-	-	Yes	Not Null	Action time
details	string	-	-	No	Null	Additional details

4.2 Software Architecture

<TO DO: Describe the software architecture and place the architecture diagram here.>

<TO DO: Describe the separation of the system into subsystems and how the subsystems are assigned to team members.>

Subsystem	Team members

4.2.1 Subsystem 1

<TO DO: Describe the subsystem and place the architecture diagram here.>

4.2.2 Subsystem 2

<TO DO: Describe the subsystem and place the architecture diagram here.>

4.3 Main Screens

4.3.1 Register

The Register screen allows new users to create an account in the Scholarship System. Users are required to provide a username, email address, identification number, role, and password. The role selection determines the user's access level within the system, such as Student, Reviewer, Scholarship Committee, or Administrator. A password confirmation field is included to prevent input errors and ensure account security. Upon successful registration, users can proceed to the login screen to access the system.

Register

Username

Email

ID

Role
 Student

Password

Confirm Password

Create Account

Already have an account? [Login](#)



4.3.2 Login

The Login screen allows registered users to access the Scholarship System by entering their email address and password. It provides a secure authentication mechanism to ensure that only authorised users can access role-specific dashboards. A link to the registration page is also provided for new users who do not yet have an account.

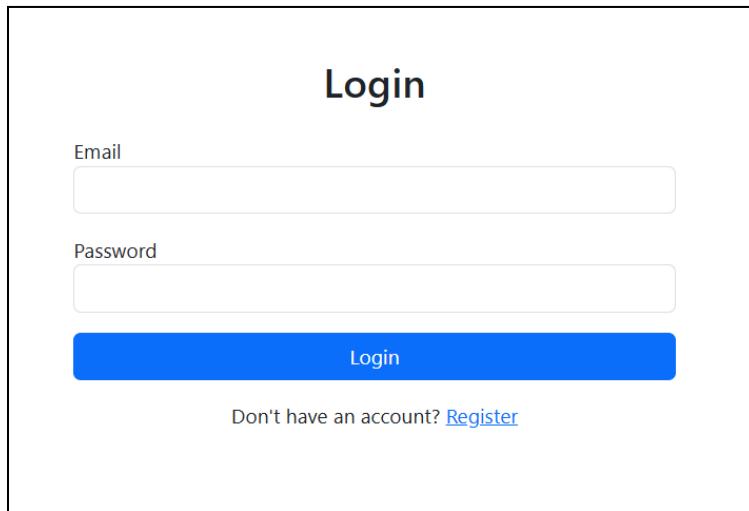
Login

Email

Password

Login

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



4.3.3 Student Dashboard

The Student Dashboard serves as the main interface for students after logging into the system. It displays a welcome message along with quick access options such as Browse Scholarships and Edit Profile. The dashboard also includes a Your Applications section, which shows the student's scholarship application status. If no applications have been submitted, a clear message is displayed to inform the student. This screen provides a simple and organized overview, allowing students to easily navigate scholarship listings and manage their application activities.

Scholarship System

Welcome, athirahishak

Browse Scholarships

Your Applications

You have not applied for any scholarships yet.

Edit Profile

Logout

4.3.4 Reviewer Dashboard

The Reviewer Dashboard serves as the main interface for reviewers after logging into the system. It provides an overview of assigned scholarship applications, including the total number of applications assigned, pending, and reviewed. A table is displayed to list application details such as student name, scholarship title, application deadline, current status, and score. Reviewers can also sort applications by date to prioritize reviews. When no applications are assigned, the dashboard clearly indicates an empty state. This screen enables reviewers to efficiently manage and track their review tasks in an organized manner.

Scholarship System

Reviewer Dashboard

Total assigned: 0, Pending: 0, Reviewed: 0

Sort by Date

Student	Scholarship	Application Deadline	Status	Score	Action
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Logout

4.3.5 Scholarship Committee Dashboard

The Scholarship Committee Dashboard provides committee members with an overview of the overall status of scholarship applications. Summary cards display key statistics, including the total number of applications received, the number of pending applications, accepted applications, and rejected applications. These visual indicators allow committee members to quickly assess the current progress of the evaluation process. A “See All Applications” button is provided to allow committee members to access the detailed application list for further review and decision-making. This dashboard supports efficient monitoring and management of scholarship outcomes.

Scholarship System

Scholarship Committee Dashboard

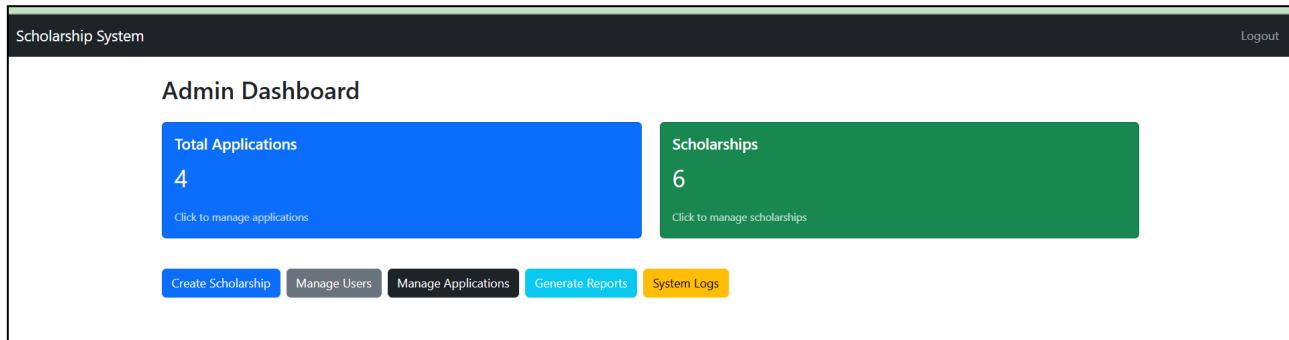
Total Applications	4	Pending	3	Accepted	0	Rejected	1
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See All Applications

Logout

4.3.6 Admin Dashboard

The Admin Dashboard provides an overview of the system's overall status and key administrative functions. It displays summary statistics such as the total number of scholarship applications and the total number of available scholarships to give administrators a quick snapshot of system activity. From this dashboard, administrators can easily access core management functions through dedicated buttons, including creating new scholarships, managing user accounts, managing applications, generating reports, and viewing system logs. This screen serves as the main control panel for administrators, enabling efficient navigation and effective system administration.



4.4 Student Subsystem

4.4.1 Update Personal Profile

This screen allows users to view and update their account information. The username and user ID are displayed for identification purposes. Users can update their details by clicking the **Update Account Details** button. A Change Password option is provided to enhance account security. This feature ensures user information remains accurate and up to date.

A screenshot of the "Customize Your Profile" page. At the top, there is a dark header bar with the text "Scholarship System" on the left and "Logout" on the right. Below the header is a title "Customize Your Profile". The page contains two input fields: "Username" with the value "athirahishak" and "Your ID" with the value "018". Below these fields are two buttons: a red button labeled "Change your password" and a blue button labeled "Update Account Details".

4.4.2 Browse Available Scholarship

This screen displays a list of scholarships currently open for application. Each scholarship includes its name, description, eligibility requirements, and application deadline. Students can review the details to determine suitability before applying. The Apply button allows eligible students to submit an application directly. This screen helps students easily explore and apply for relevant scholarships.

Available Scholarships		Logout		
Name	Details	Requirements	Deadline	Action
Merit Scholarship	This scholarship is awarded to students with outstanding academic performance to support their education and encourage excellence.	<ul style="list-style-type: none"> • Minimum CGPA: 3.5 • Full-time undergraduate student • Malaysian citizen 	30 Mar 2026	Apply
B40 Financial Assistance Scholarship	This scholarship provides financial support to students from low-income families to help reduce the burden of education expenses.	<ul style="list-style-type: none"> • Minimum CGPA: 2.0 • Maximum Household Income: RM3999 • Malaysian citizen • Enrolled in diploma or degree programme 	15 Apr 2026	Apply
Leadership & Community Service Award	Awarded to students who demonstrate strong leadership skills and active involvement in community service activities.	<ul style="list-style-type: none"> • Minimum CGPA: 3.0 • Active participation in student organisations • At least 1 year of leadership experience 	10 Apr 2026	Apply
Sports Excellence Scholarship	This scholarship recognises students who have represented their institution or country in sports competitions.	<ul style="list-style-type: none"> • Minimum CGPA: 2.75 • Represented university, state, or national level • Active athlete 	05 Apr 2026	Apply

4.4.3 Apply Scholarship & Eligibility Check Screen

This screen allows students to apply for a selected scholarship by filling in personal, academic, and financial information. Students are required to upload supporting documents such as income proof and academic transcripts in PDF format. All mandatory fields must be completed before proceeding to the next step. When the Next button is clicked, the system automatically checks the applicant's eligibility based on scholarship requirements. Eligibility criteria include CGPA, household income, and other specified conditions. Only eligible applicants are allowed to proceed with the application submission process.

Scholarship System		Logout
Multimedia University Scholarship Form		
Scholarship: Merit Scholarship		
Application Deadline: 30 Mar 2026		
Personal Information		
Passport Size Photo	<input type="file" value="Choose File"/> No file chosen	<input type="button" value="Browse"/>
Name (as in NRIC / Passport)	<input type="text"/>	
Home Address	<input type="text"/>	
IC / Passport Number	<input type="text"/>	
Date of Birth	<input type="text" value="mm/dd/yyyy"/>	<input type="button" value="Age"/>
Intake	<input type="text"/>	

Foundation	
Course e.g. Bachelor of Computer Science	Race
Nationality	
Sex <input type="radio"/> Male <input type="radio"/> Female	
Contact Number	
Home Contact Number	
Household Monthly Income (RM)	
Please upload latest true copy of income proof (salary slip / employer letter / statutory declaration). PDF format only.	
<input type="button" value="Choose File"/>	No file chosen
Current CGPA	
Please upload your latest academic transcript or CGPA statement . PDF format only.	
<input type="button" value="Choose File"/>	No file chosen
Email Address	
<input type="button" value="Next"/>	

4.4.4 Fill in Family Background

This screen allows students to provide details of their family members as part of the scholarship application. Information collected includes relationship, age, occupation, and monthly income. These details are used to assess the applicant's financial background and eligibility. Multiple family members can be recorded in the provided fields. The **Back** button allows users to return to the previous section. Clicking **Next** saves the information and proceeds to the next application step.

Scholarship System		Logout																									
Multimedia University Scholarship Form Scholarship: Merit Scholarship Application Deadline: 30 Mar 2026 Family Background <table border="1"> <thead> <tr> <th>Name</th> <th>Relationship</th> <th>Age</th> <th>Occupation</th> <th>Monthly Income (RM)</th> </tr> </thead> <tbody> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>			Name	Relationship	Age	Occupation	Monthly Income (RM)																				
Name	Relationship	Age	Occupation	Monthly Income (RM)																							
<input type="button" value="Back"/>	<input type="button" value="Next"/>																										

4.4.5 Education Background Information

This screen collects the applicant's educational background details. Students enter the name of their school or institution and highest academic qualification. A certified true copy of the qualification document must be uploaded for verification. The uploaded document supports academic eligibility assessment. The Back button allows users to review previous sections. Clicking Next saves the information and continues the application process.

The screenshot shows a web-based application for a scholarship form. At the top, it says "Scholarship System" and "Logout". Below that, the title "Multimedia University Scholarship Form" is displayed, along with the scholarship type "Merit Scholarship" and the deadline "30 Mar 2026". The "Education Background" section contains fields for "Name of School / Institution" (with an empty input field), "Highest Academic Qualification" (with an input field containing "SPM"), and a file upload section for "Attach Certified True Copy" (with a "Choose File" button and a message "No file chosen"). At the bottom are "Back" and "Next" buttons.

4.4.6 Involvement in Activities

This screen allows applicants to record their involvement in extracurricular and co-curricular activities. Students enter the activity type, participation level, year, and achievement obtained. Multiple entries can be added to reflect different activities and experiences. These details help evaluate leadership, participation, and overall student engagement. The Back button allows users to review previous sections. Clicking Next saves the information and proceeds to the next stage of the application.

The screenshot shows the continuation of the scholarship application form. It includes the same header and title as the previous screen. The "Involvement in Activities" section features a table with four columns: "Type", "Level", "Year", and "Achievement". There are five rows of this table, each with an empty "Type" field and a dropdown menu for "Level" set to "None". At the bottom are "Back" and "Next" buttons.

4.4.7 Personal Statement

This screen allows applicants to write a personal statement explaining why they deserve the scholarship. Students may enter up to 1000 words highlighting their achievements, goals, and motivations. The statement provides reviewers with insight into the applicant's background and aspirations. Applicants

can review and edit their statement before final submission. The Back button returns to the previous section for revisions. Clicking Submit Application finalizes and submits the scholarship application for review.

The screenshot shows a web-based application form titled "Multimedia University Scholarship Form". At the top left is the system name "Scholarship System" and at the top right is a "Logout" link. The main content area contains the following information:

- Scholarship:** Merit Scholarship
- Application Deadline:** 30 Mar 2026
- Personal Statement:** A text input field with the placeholder "State briefly why you are deserving of this scholarship (Max 1000 words)".

At the bottom of the form are two buttons: a grey "Back" button and a green "Submit Application" button.

4.5 Reviewer Subsystem

4.5.1 View Assigned Application List

This screen displays an overview of the reviewer's workload, including the total number of assigned, pending, and reviewed applications, which are all shown as zero at this stage. The application list table is empty because no assignments have been made by the administrator yet.

The dashboard also provides filtering and sorting functionality, such as sorting applications by date, to help reviewers manage their assigned applications efficiently. However, these features are inactive when no applications are available in the list.

Once applications are assigned, reviewers will be able to view application details, evaluate submissions, enter scores and comments, and finalize reviews through this interface. This screen demonstrates the initial system state before the review process begins.

The screenshot shows the "Reviewer Dashboard" page. At the top left is the system name "Scholarship System" and at the top right is a "Logout" link. The main content area includes:

- A summary message: "Total assigned: 0, Pending: 0, Reviewed: 0".
- A "Sort by Date" button.
- A table header with columns: Student, Scholarship, Application Deadline, Status, Score, and Action.

The table body is currently empty.

4.6 Scholarship Committee Subsystem

4.6.1 See All Submitted Application

This screen displays a list of all submitted scholarship applications for the scholarship committee. Key details such as application ID, student ID, scholarship name, status, average score, and fail count are shown in a table for easy review. Filtering and sorting options are provided to help committee members quickly analyse applications based on status and performance. The Open button allows access to detailed application information for further evaluation and decision-making.

ID	Student ID	Scholarship	Status	Avg Score	Fail Count	Action
4	12345678	Sports Excellence Scholarship	Pending	0.00	0	<button>Open</button>
3	12345678	Merit Scholarship	Pending	0.00	0	<button>Open</button>
2	01	Merit Scholarship	Rejected	60.00	0	<button>Open</button>
1	12345678	Merit Scholarship	Pending	0.00	0	<button>Open</button>

[← Back to Dashboard](#)

4.6.2 Open an Application to Read Info and Documents

This screen allows the scholarship committee to view detailed information of a selected application. Key details such as application status, submission date, student ID, and scholarship ID are displayed for reference. All documents uploaded by the applicant are listed and can be opened for verification purposes. The screen also shows reviewer scores and comments, including the given score, to support fair evaluation. Action buttons are provided to allow the committee to accept or reject the application and notify the student accordingly.

[Back to List](#)
[Dashboard](#)

Application Info

Status: Pending
Submitted At: 2026-02-03 06:06:31.942873
Student: ID 7
Scholarship: ID 4

Documents

- [T_1770098791_photo_2024-05-28_22-32-34.jpg](#)
- [T_1770098791_Lab_6_7.pdf](#)
- [T_1770098791_MMU-ACADEMIC-CALENDAR-2026.pdf](#)
- [T_1770098791_MMU-ACADEMIC-CALENDAR-2026.pdf](#)

Reviewer Scores & Comments

Average Score: 0.0

Reviewer ID: 8
Score: None
Comment:
No comment

Send Decision

[Accept + Notify](#) [Reject + Notify](#)

Notification is implemented as an in-app status update (for assignment demonstration).

4.7 Admin Subsystem

4.7.1 Manage User Accounts

This screen allows the administrator to view and manage all registered user accounts in the scholarship system. A table is displayed showing key user information, including user ID, username, email address, and assigned role (student, reviewer, committee, or admin). The view-only mode ensures administrators can monitor user registrations and role assignments without modifying data at this stage. This screen helps maintain proper role management, user accountability, and system organisation by providing a clear overview of all system users.

ID	Username	Email	Role
1	sc1@gmail.com	sc1@gmail.com	committee
2	re1@gmail.com	re1@gmail.com	reviewer
3	st1@gmail.com	st1@gmail.com	student
4	st2@gmail.com	st2@gmail.com	student
5	st3@gmail.com	st3@gmail.com	student
6	admin@gmail.com	admin@gmail.com	admin
7	ali	abc@gmail.com	student
8	aaaa	abcc@gmail.com	reviewer
9	st001@gmail.com	st001@gmail.com	student
10	student01@gmail.com	student01@gmail.com	student
11	student02@gmail.com	student02@gmail.com	student
12	student03@gmail.com	student03@gmail.com	student
13	reviewer1@gmail.com	reviewer1@gmail.com	reviewer

4.7.2 Create Scholarship Listings

This screen allows the administrator to create new scholarship listings in the system. The administrator is required to enter essential scholarship information, including the scholarship title and a detailed description to inform students about the scholarship objectives. Optional eligibility criteria such as minimum CGPA and maximum household income can be specified to automatically filter eligible applicants. Additional requirements can be listed line by line to define specific conditions. The administrator also specifies the required supporting documents and sets the application deadline. Upon submission, the scholarship listing is created and made available for students to view and apply. This feature ensures structured scholarship management and accurate eligibility enforcement.

Scholarship System

Logout

Create New Scholarship

Title

Description

Requirements (Optional)

Minimum CGPA
e.g. 3.50
Leave empty if not required.

Maximum Household Income (RM)
e.g. 4500
Leave empty to ignore income requirement.

Other Requirements (one per line)
One requirement per line

Documents Required

Comma-separated document names (e.g., transcript, essay)

Application Deadline
mm/dd/yyyy

Create Scholarship

4.7.3 Assigns Reviewer

This screen allows the administrator to assign one or more reviewers to a selected scholarship application. The administrator selects reviewers from the available reviewer list, with support for multiple selections to enable fair and balanced evaluation. Assigned reviewers are displayed below for reference. Once confirmed, the selected reviewers gain access to review the application and submit scores and comments. This functionality ensures structured review allocation and proper distribution of evaluation responsibilities within the system.

Scholarship System

Logout

Assign Reviewers

Application ID: 4

Select Reviewers

re1@gmail.com
aaaa
reviewer1@gmail.com
amalina

Hold Ctrl (Windows) to select multiple reviewers.

Assign Selected Reviewers **Back**

Already Assigned Reviewers

- aaaa (ID: 8)

4.7.4 Manage Application Processing Stage

Scholarship System

Logout

Manage Application Processing Stages

ID	Student	Scholarship	Status	Update Status	Reviewers	Action	
4	ali	Sports Excellence Scholarship	Pending	Submitted	Save	Assign	View
3	ali	Merit Scholarship	Pending	Submitted	Save	Assign	View
2	student01@gmail.com	Merit Scholarship	Rejected	Rejected	Save	Assign	View
1	ali	Merit Scholarship	Pending	Submitted	Save	Assign	View

[Back to Dashboard](#)

4.7.5 Handle System Logs

Admins can see all the history actions to keep track of their progress and to make sure their work done on time. Admin can also filter action to see who has been assigned the reviewer

Scholarship System

Admin Dashboard Logout

System Logs

[Back to Dashboard](#) [Clear Logs](#)

Level	Action	Filter	Reset
All	ASSIGN REVIEWERS	Filter	Reset

ID	Time	Level	Action	Message	User
1	2026-01-22 09:23:21.925503	info	ASSIGN REVIEWERS	Admin assigned 1 reviewer(s) for application #1	admin (ID 3)

4.7.6 Generates Reports

Admin can generate report in excel to show the total number of user and scholarship applied.

Scholarship System
Admin Dashboard | Logo

Admin Reports

[Back to Dashboard](#)
[Export CSV](#)

Totals

- Total Users: 4
- Total Scholarships: 6
- Total Applications: 1

Applications by Status

- Pending: 1

Users by Role

- admin: 2
- reviewer: 1
- student: 1

A	B	C	D	E	F	G	H	I	J	K	L	M
1 ReportType	Key	Value										
2 Totals	Total Users	4										
3 Totals	Total Scholarships	6										
4 Totals	Total Applications	1										
5 Applications by Status	Pending	1										
6 Users by Role	admin	2										
7 Users by Role	reviewer	1										
8 Users by Role	student	1										
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												

admin report

4.8 Main Components

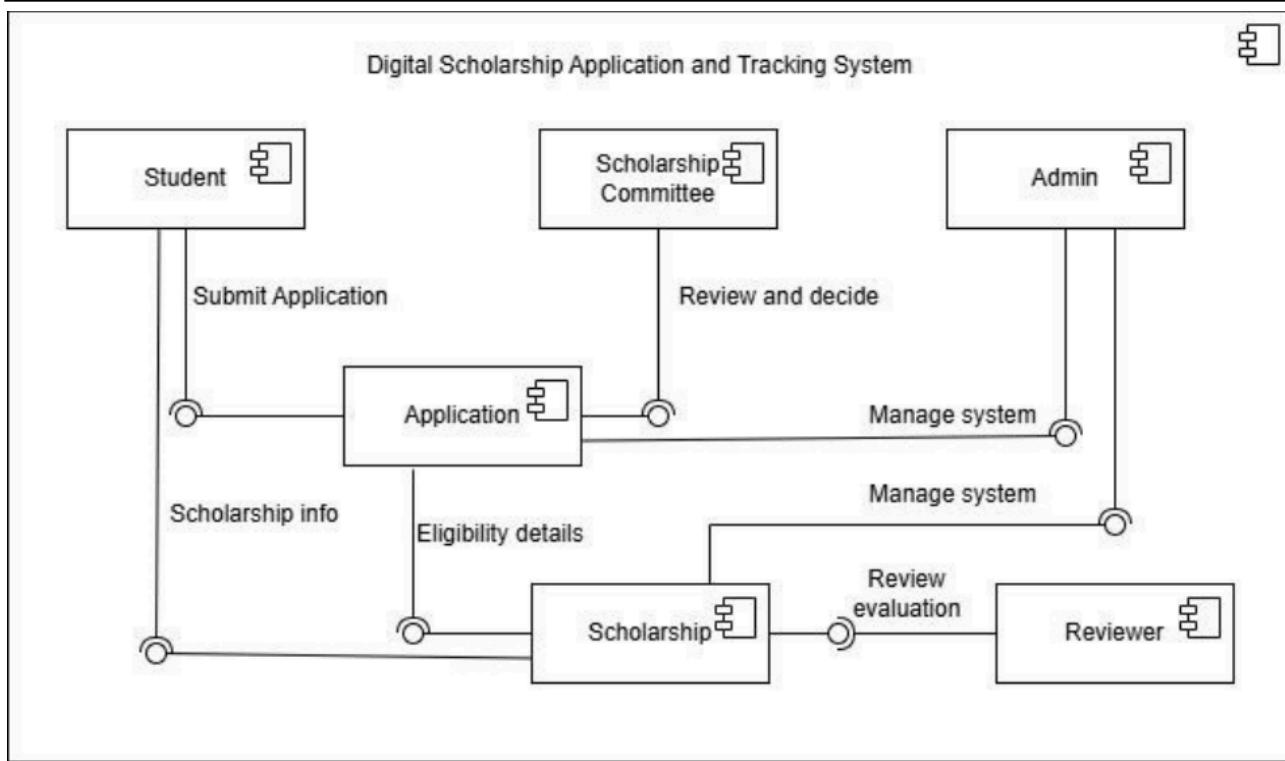
The Digital Scholarship Application and Tracking System is designed using a component-based architecture, where each component is responsible for a specific set of functionalities. Although each component performs an independent task, all components are interlinked and collaborate to complete the overall scholarship application, evaluation, and decision-making process. The system consists of four main user-facing components which are students, scholarship committee, reviewer and admin.

Main Components Table

Main Components	Subcomponents
Student	Register Account
	Login to System
	Update Personal Profile
	Browse Available Scholarship
	Use Eligibility Check Tool
	Upload Required Documents
	Submit Application
	Track Application Status
Schoarship Committee	Committee members log into the system.
	See all submitted applications.
	Open an application to read the info and documents.
	Check scores and comments from reviewers.
	Send acceptance or rejection notifications.
Reviewer	Login
	Access Dashboard

Admin	Application Review
	Filter and Sort Application
	Finalize and Submit Review
User	Login
	Access Dashboard
	User Managements
	Scholarship Managements
	Application Workflow
	Reviewer Assignments
	System Logs Handle
	Generation of Report

Main Component Design



4.8.1 Student

Register Account

```

FUNCTION student_register(request):
    IF request is POST THEN
        GET name, email, password from form
        CHECK if email already exists
        IF email exists THEN
            SHOW duplicate email error RETURN to registration page END
        IF
            CREATE student account with status "not verified" SEND verification email
            SHOW success message ELSE
            DISPLAY registration form END IF
    
```

END FUNCTION

Login to System

This component authenticates students using email and password.

Pseudocode:

```
FUNCTION
    student_login(request): IF
        request is POST THEN
            GET email and password
            FIND account by email
            IF account not found
                THEN SHOW error
                message RETURN to
                login page END IF
            IF password incorrect
                THEN SHOW error
                message RETURN
                to login page END
                IF
            CREATE authenticated session
            REDIRECT to student dashboard
        ELSE
            DISPLAY login
            form END IF
    END FUNCTION
```

Update Personal Profile

This component lets students update personal and academic info.

Pseudocode:

```
FUNCTION
    update_profile(student):
```

VERIFY student is
authenticated

GET submitted profile
fields VALIDATE fields

IF any field invalid
THEN SHOW error
message RETURN to
profile page END IF

SAVE updated
information SHOW
success confirmation END
FUNCTION

Browse Available Scholarship

This component lets students view scholarships that are open for applications.

Pseudocode:

```
FUNCTION browse_scholarships():  
  
    VERIFY user is authenticated  
  
    QUERY active scholarships  
  
    DISPLAY list with details such as title, benefits, and deadline  
  
    IF no scholarships found THEN  
        SHOW "No scholarships  
available" END IF  
  
END FUNCTION
```

Use Eligibility Check Tool

This component evaluates whether students meet scholarship requirements.

Pseudocode:

```
FUNCTION eligibility_check(input_data):
```

GET academic and financial info

COMPARE info with scholarship

criteria

IF meets
criteria THEN
DISPLAY
"Eligible"
ELSE

DISPLAY "Not
Eligible" END IF

END FUNCTION

Upload Required Documents

This component stores student documents for the application.

Pseudocode:

FUNCTION
upload_documents(application):
FOR each required document DO

GET file upload

CHECK file type and size

IF invalid
THEN
SHOW
error
ELSE

SAVE document to
storage END IF

END FOR

SHOW upload success
message END
FUNCTION

Submit Application

This component finalizes submission of scholarship application.

Pseudocode:

```
FUNCTION submit_application(application):
```

```
    VERIFY all fields  
    completed VERIFY all  
    documents uploaded
```

```
    IF incomplete  
        THEN  
            SHOW error  
            message
```

```
    RETURN to application  
    page END IF
```

```
    SET status to "Submitted"  
    LOCK application from  
    editing SHOW  
    confirmation message  
END FUNCTION
```

Track Application Status

This component allows students to view progress and decisions.

Pseudocode:

```
FUNCTION track_status(student):
```

```
    QUERY all applications by student
```

```
    DISPLAY status (Submitted, Under Review, Approved,
```

```
    Rejected) IF none found THEN
```

```
        SHOW "No applications  
        submitted" END IF
```

```
END FUNCTION
```

4.8.2 Scholarship Committee

Committee members log into the system

This component authenticates committee members using email and password.

Pseudocode:

FUNCTION committee_login(request):

IF request is
POST THEN
GET email and
password
FIND account

IF account not found OR role not
committee THEN SHOW error message

RETURN to login
page END IF

IF password
incorrect THEN
SHOW error

RETURN to login
page END IF

CREATE session

REDIRECT to committee
dashboard ELSE

DISPLAY
login form END
IF

END FUNCTION

See all submitted applications

This component displays student applications for the committee to review.

Pseudocode:

FUNCTION

view_submitted_applications():
VERIFY user is committee

QUERY applications with status "Submitted"
or higher DISPLAY application list

IF none found THEN

SHOW "No applications found"

END IF

END FUNCTION

Open an application to read the info and documents

This component shows the applicant details and documents.

Pseudocode:

FUNCTION open_application(application_id):

GET applicant info

GET uploaded documents

DISPLAY all details and document previews

OPTIONALLY assign or reassign reviewer
END FUNCTION

Check Reviewer Scores and Comments

This component helps committee decide winners based on evaluation.

Pseudocode:

FUNCTION

check_reviews(application):
GET reviewer scores and
comments

DISPLAY evaluation results

COMMITTEE selects approved or
rejected
END FUNCTION

Send acceptance or rejection notifications

This component sends final result emails to students.

Pseudocode:

FUNCTION

send_notifications(): GET
applications with final
decision

FOR each application DO

IF status is
"Approved" THEN
SEND acceptance
email ELSE

SEND rejection email

END IF
END FOR

SHOW success summary
END FUNCTION

4.8.3 Reviewer

Login

This component allows students to create an account using personal details and verify their email.

Pseudocode:

FUNCTION student_register(request):

IF request is POST THEN

 GET name, email, password from
 form CHECK if email already
 exists

 IF email exists THEN

 SHOW duplicate
 email error RETURN
 to registration page
 END IF

 CREATE student account with status "not
 verified" SEND verification email

 SHOW success
 message ELSE

 DISPLAY registration
 form END IF

END FUNCTION

Access Dashboard

This component will displays reviewer statistics and assigned applications summary.

Pseudocode:

FUNCTION

 reviewer_dashboard(current_user):
 VERIFY user is authenticated and role is
 "reviewer"

 COUNT total applications assigned to
 reviewer COUNT applications with status
 "Assigned" (pending)

 COUNT applications with status "Reviewed" (completed)

 DISPLAY dashboard with
 statistics END FUNCTION

Application Review

This component will retrieves and displays applications assigned to reviewer.

Pseudocode:

```
FUNCTION reviewer_applications(current_user,  
    sort_option): VERIFY user is authenticated and role is  
    "reviewer"
```

```
QUERY applications where reviewer_id equals
```

```
current_user.id IF sort_option is "date" THEN
```

```
    ORDER BY submitted_at  
    descending ELSE IF sort_option  
    is "status" THEN
```

```
    ORDER BY  
    status END IF
```

```
FOR EACH  
    application DO  
        LOAD student  
        information LOAD  
        scholarship  
        information
```

```
END FOR
```

```
DISPLAY applications  
list END FUNCTION
```

Filter and Sort Application

This component will organized application list by selected criteria

Pseudocode:

```
FUNCTION filter_sort_applications(reviewer_id, filters,  
    sort_by): QUERY applications where reviewer_id  
    equals given reviewer_id
```

APPLY filters if provided:

- Filter by status
- Filter by date range

APPLY sorting:

- Sort by date (ascending/descending)
- Sort by status

```
RETURN filtered and  
sorted list END  
FUNCTION
```

Finalize and Submit Review

This component will processes and saves reviewer's evaluation

Pseudocode:

```
FUNCTION submit_review(current_user, application_id,  
    request): VERIFY user is authenticated and role is  
    "reviewer"
```

GET application from database

CHECK if reviewer already reviewed this
application IF already reviewed THEN

```
SHOW warning  
message REDIRECT  
to applications list
```

END IF

IF request is POST THEN

GET score, decision, and comment from
form VALIDATE all fields are provided

CREATE new review record with:

- application_id
- reviewer_id
- score
- decision
- comment

UPDATE application status to

"Reviewed" SAVE review to database

SHOW success
message REDIRECT
to applications list

ELSE

LOAD student and scholarship
information LOAD document paths

DISPLAY review
form END IF

END FUNCTION

4.8.4 Admin

Admin Login

This component will authenticates admin using password and email.

Pseudocode:

FUNCTION
admin_login(request)
: IF request is POST
THEN

GET username and password
from form FIND user by
username

IF user not found OR role is not "admin"
THEN SHOW error message

RETURN to
login page END IF

IF password is
incorrect THEN
SHOW error
message
RETURN to
login page

END IF

CREATE authenticated session
REDIRECT to admin
dashboard

ELSE

DISPLAY admin
login form END IF

END FUNCTION

Access Dashboard

This component will display system overview and statistics.

Pseudocode:

FUNCTION
admin_dashboard(current_user):

VERIFY user is authenticated and role
is "admin"

COUNT total
applications COUNT
total scholarships

DISPLAY dashboard with:

- Total applications
- Total scholarships
- Navigation links to all admin functions

END FUNCTION

User Managements

This component will displays all registered users in a view mode only for admin

Pseudocode:

FUNCTION manage_users(current_user):

VERIFY user is authenticated and role is "admin"

QUERY all users from
database ORDER BY
created_at descending

FOR EACH user
DO DISPLAY:

- Username
- Email
- Student/Employee ID
- Role

-
Registration
date END
FOR

END FUNCTION

Scholarship Managements

This component will creates new scholarship available for students to apply.

Pseudocode:

```
FUNCTION create_scholarship(current_user,  
    request): VERIFY user is authenticated and  
    role is "admin"
```

```
IF request is  
    POST THEN  
        GET form  
        data:  
            - title  
            - description  
            - eligibility_criteria  
            - documents_required  
            -
```

```
        application_dea
```

```
        dline
```

```
        VALIDATE
```

```
        form data
```

```
        CREATE new scholarship  
        record SAVE to database
```

```
        CREATE system log entry
```

```
"CREATE_SCHOLARSHIP" SHOW success message
```

```
    REDIRECT to  
    dashboard ELSE  
  
        DISPLAY scholarship creation  
        form END IF  
  
    END FUNCTION
```

Application Workflow

This component will manage applications by updating the application statuses for admin to view.

Pseudocode:

```
FUNCTION  
    manage_applications(current_user):  
        VERIFY user is authenticated and role is  
        "admin"
```

```
    QUERY all applications ordered by newest first
```

```
    FOR EACH  
        application DO  
            LOAD student  
            information LOAD  
            scholarship  
            information  
            COUNT assigned  
            reviewers
```

```
    END FOR
```

```
    DISPLAY applications with status update  
    forms END FUNCTION
```

FUNCTION update_application_status(application_id,
new_status): VERIFY user is authenticated and role is
"admin"

GET application from database
VALIDATE new_status is valid

UPDATE application
status SAVE to
database

CREATE system log entry

"UPDATE_STATUS" SHOW success

message

REDIRECT to
applications page END
FUNCTION

Reviewer Assignments

This component allow admin to assign one or more reviewers to application.

Pseudocode:

FUNCTION assign_reviewers(current_user, application_id,
request): VERIFY user is authenticated and role is "admin"

GET application from
database QUERY all users
with role "reviewer"

IF request is POST THEN

GET selected reviewer IDs from form

```
FOR EACH reviewer_id DO
    CHECK if reviewer already
    assigned IF not assigned
    THEN
        CREATE review
        record
        INCREMENT
        added_count
    END IF
END
FOR

IF reviewers added THEN
    UPDATE application status to
    "Assigned" END IF

SAVE to database
CREATE system log entry "ASSIGN REVIEWERS"

SHOW success message
REDIRECT to
applications page

ELSE
    GET currently assigned
    reviewers DISPLAY
    assignment form
END IF

END FUNCTION
```

System Logs Handle

This component allow admin to views, filters, and manages system logs. It shows all history of admin's action to keep track of their works

Pseudocode:

```
FUNCTION system_logs(current_user, filter_level,  
filter_action): VERIFY user is authenticated and role is  
"admin"
```

QUERY system logs ordered by

newest first IF filter_level provided

THEN

```
FILTER by  
level END IF
```

```
IF filter_action  
provided THEN  
FILTER by action
```

END IF

LIMIT to 200 most recent logs

```
GET distinct levels and actions for  
filters DISPLAY logs with filter  
options
```

END FUNCTION

```
FUNCTION clear_logs(current_user):
```

VERIFY user is authenticated and role is

"admin" DELETE all system log entries

CREATE new log entry

"CLEAR_LOGS" SHOW success

message

REDIRECT to logs

page END

FUNCTION

Generation of Report

This component allows admin to generate statistics and exports to CSV.

Pseudocode:

FUNCTION reports(current_user):

VERIFY user is authenticated and role is "admin"

COUNT total

users COUNT

total scholarships

COUNT total

applications

GROUP applications by status and

COUNT GROUP users by role and

COUNT

DISPLAY report with:

- Overall totals

- Status breakdown

- Role

breakdown

END
FUNCTION

FUNCTION
export_reports_csv(current_user):
VERIFY user is authenticated and role
is "admin"

CREATE CSV file with columns:

- Report Type
- Key
- Value

WRITE totals section
WRITE applications
by status WRITE
users by role

RETURN CSV file for
download END
FUNCTION

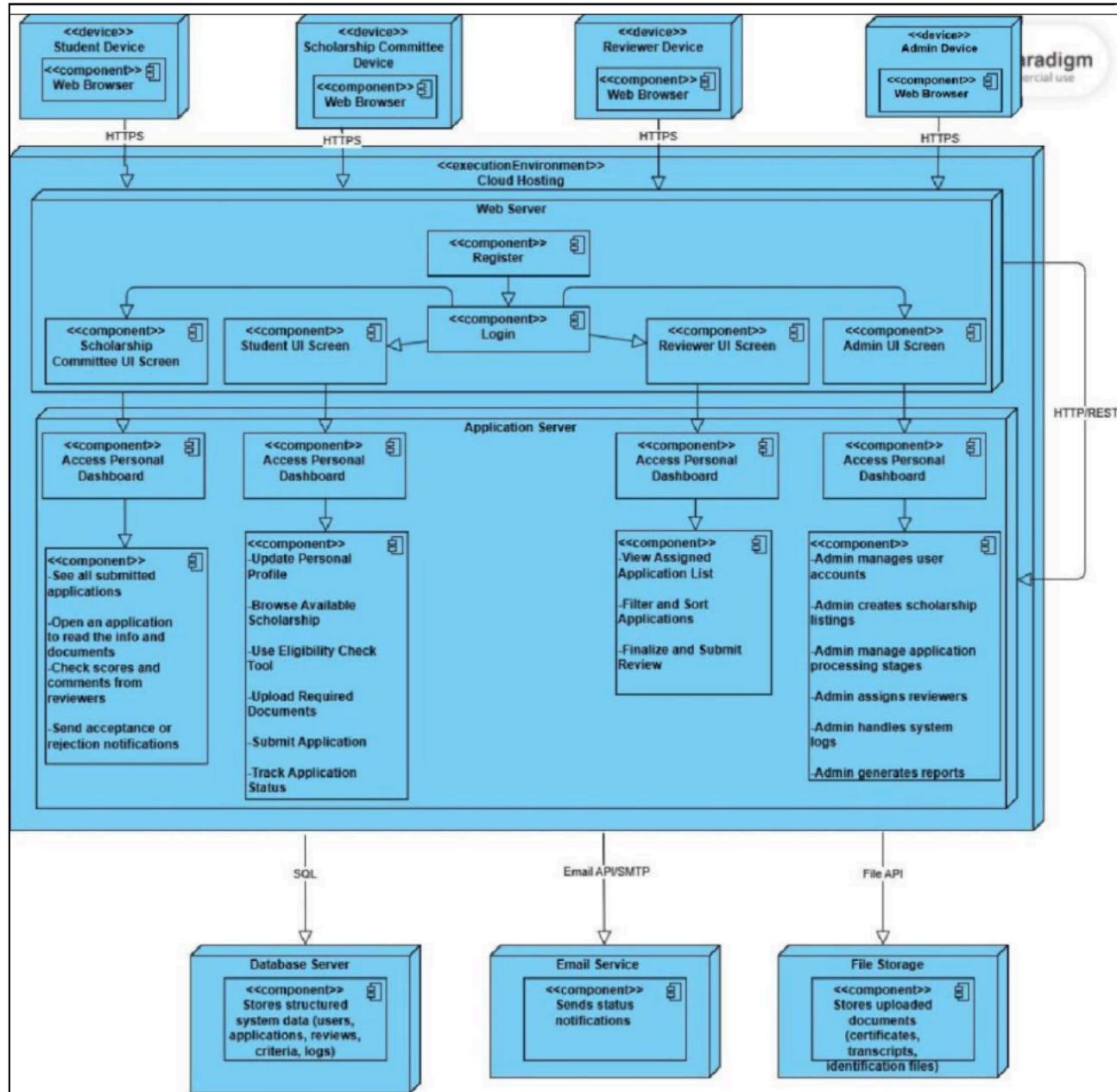
4.9 Deployment Diagram

The deployment diagram illustrates the runtime environment and physical allocation of software components for the Digital Scholarship Application and Tracking System. Four client devices (Student, Scholarship Committee, Reviewer, and Admin) interact with the system through a web browser over HTTPS. All roles access a common login interface, while only students are allowed to register before authentication. After logging in, each role is redirected to their respective role-specific web interfaces hosted on the Web Server.

The Web Server handles presentation logic and communicates with the Application Server using HTTP/REST. The Application Server executes the core application logic and role-specific subsystems, including Student, Scholarship Committee, Reviewer, and Admin functions. These

subsystems support key functional use cases such as scholarship application submission, review assignment, review submission, status tracking, and administrative configuration.

Structured system data, including users, scholarship listings, applications, reviews, and criteria, is stored in the Database Server via SQL. Uploaded documents such as certificates, transcripts, and identification files are stored separately in the File Storage server using a file storage API. Notification emails, particularly acceptance or rejection messages, are sent through an external Email Service using SMTP/Email APIs. All servers operate under a cloud-based execution environment to abstract physical hardware and support deployment flexibility.



5 Implementation Details

5.1 Development Environment

<TO DO: Describe the development environment here with relevant images. Include environment setup.>

5.2 Software Integration

<TO DO: Describe a strategy to integrate all the subsystems here with relevant images.>

File	Description

5.3 Database

Database of the Scholarship Management System is implemented using SQLAlchemy ORM with SQLite as the database management system. It is designed to support user management, scholarship applications, reviewer evaluations, and application status tracking in a structured and efficient manner. The relational database ensures data consistency, integrity, and scalability while supporting role-based access for different system actors.

The database structure follows a modular design, where each module represents a core functional component of the system. Relationships between entities are implemented using one-to-many and many-to-one associations to reflect real-world interactions between students, reviewers, and scholarship applications.

5.3.1 Database Overview

The database consists of several interrelated tables that manage user accounts, scholarship details, application submissions, and review processes. Each table is designed with a specific responsibility to reduce redundancy and improve maintainability.

Table 5.3.1 summarizes the key database tables and their purposes.

Table 5.3.1: Database Table Descriptions

Table Name	Description
User	Stores user account information and role-based access control
Scholarship	Stores scholarship details created and managed by admins
Application	Stores student scholarship applications and their current status
Review	Stores reviewer evaluations, scores, comments, and decisions
SystemLog	Records system activities for auditing and monitoring purposes
Report	Stores generated report data and export records

5.3.2 Database Implementation by Module

5.3.2.1 User Management

The **User** table manages authentication and authorization within the system. Each user record includes login credentials, role information, and profile details. Roles determine system access, ensuring that admins, students, and reviewers can only perform permitted actions.

A one-to-many relationship exists between **User** and **Application**, as a student may submit multiple scholarship applications.

5.3.2.2 Scholarship Management

The Scholarship table stores scholarship information such as title, description, eligibility criteria, application deadlines, and publication status. Each scholarship is created by an admin and can be applied to by multiple students.

This table maintains a one-to-many relationship with the Application table.

6 Testing

6.1 Testing Strategy

Integration testing for the Digital Scholarship Application and Tracking System was conducted to ensure that all system modules work correctly when combined. An incremental integration approach was used, where modules were tested step by step, starting from login and database connection, followed by application submission, review processing, and report generation. This helps to detect errors early and ensure stable system performance.

Role-based testing was also performed to verify that each user can only access functions according to their assigned role. Students, reviewers, committee members, and administrators were tested separately to ensure proper access control and system security. This prevents unauthorized users from accessing restricted features.

In addition, end-to-end workflow testing was carried out to verify the complete scholarship application process, from student submission to reviewer evaluation, then after that move to committee decision and administrative approval. This ensures that data is processed correctly and that the overall system workflow functions as intended.

6.2 Test Data

6.2.1 Test Data Set 1 (Student)

Student Credentials

Username: stu001

Email: stu001@gmail.com

Password: Student@123

Student Profile Test Data

Field	Data
Username	stu001
Student ID	001
Bio	-

Scholarship Application Test Data

Scholarship	Status	Date Submitted
MMU PRESIDENT'S Scholarship	pending	02/02/2026

Document Upload Test Data

File name	Type	Size	Status
transcript.pdf	PDF	500KB	Uploaded
income.pdf	PDF	300KB	Uploaded

6.2.2 Test Data Set 2 (Scholarship Committee)

Committee Credentials

Username: com001

Email: com001@gmail.com

Password: Committee@123

Application Evaluation Test Data

Application ID	Student ID	Scholarship	Status	Avg Score	Fail count
1	1	MMU President Scholarship	Accepted	5.00	0
2	5	MMU President Scholarship	Pending	0.00	0

Decision Record Test Data

Status	Date submitted	Student ID	Scholarship ID	Avg Score	Reviewer ID	Decision
Accepted	22/01/2026	1	1	5.00	2	Accept + Notify
Pending	23/01/2026	5	1	0.0	4	Reject+Notify

6.2.3 Test Data Set 3 (Reviewer)

Reviewer Credentials

Username: rev001

Email: rev001@gmail.com

Password : Reviewer@123

Assigned Application Test Data

Application ID	Student ID	Scholarship	Status	Actions
1	2	MMU PRESIDENT'S Scholarship	Under Review	Review

Review Submission Test data

Review ID	Application ID	Score	Comment	Status
1	1	85	Good performance	Submitted

Review History Test Data

Review ID	Date	Result	Remarks
1	05/01/2026	Passed	Recommended

Test Data Set 4 (Admin)

Admin Credentials

Username: admin001
 Email: admin001@gmail.com
 Password: Admin@123

Manage User Test Data

User ID	Username	Email	Role
9	stu001	stu001@gmail.com	student
10	com001	com001@gmail.com	committee

Manage Scholarship Test Data

Title	Description	Eligibility Criteria	Documents Required	Application Deadline
MMU PRESIDENT'S Scholarship	Awarded to high-achieving and well-rounded students with outstanding academic results.	<ul style="list-style-type: none"> • Minimum CGPA: 3.5 • Maximum Household Income: RM5000 	Academic transcript	31 Mar 2026

		<ul style="list-style-type: none"> ● Excluded Programmes: Law 		
MMU Excellence Scholarship	Merit-based scholarship for excellent academic achievers.	<ul style="list-style-type: none"> ● Minimum CGPA: 3.75 ● Maximum Household Income: RM10000 	Academic transcript	15 Apr 2026

Manage Application Status Test Data

ID	User ID	Scholarship ID	Status	Update Status
1	1	1	Accepted	Submitted
2	2	1	Rejected	Rejected

Assign Reviewer Test Data

Application ID	Reviewer ID	Reviewer Name	Actions
1	2	Dr Lim	Assign
2	4	Dr Hana	Assign

Generate Report Test Data

Field	Totals
Users	11
Scholarships	7
Applications	4
Accepted	2
Pending	1
Rejected	1

Admin	2
Committee	2
Reviewer	2
Student	5

System Logs Test Data

ID	Time	Level	Action	Message	User
1	22/01/2026	info	ASSIGN_REVIEWERS	Admin assigned reviewer	admin (ID 3)
2	23/01/2026	info	ASSIGN_REVIEWERS	Admin assigned reviewer	admin (ID 3)

6.3 Acceptance Testing

6.3.4 Acceptance Test 2

Actor: Student

Developer: Nur Athirah binti Ishak

Criteria	Fulfilled	Remarks
Login	Yes	Secure
View Dashboard	Yes	Displays application status correctly
Edit Profile	Yes	Profile details updated successfully
Apply for Scholarships	Yes	Application submitted successfully
Eligibility Check	Yes	Eligibility auto-checked based on criteria
Browse Scholarships	Yes	All available scholarships listed
Upload Required Documents	Yes	Files uploaded successfully
View Application Status	Yes	Status updated in real time

Date tested : 3.2.2026

% Complete : 100%

Tested by : Nur Athirah binti Ishak

Verified by :Law Chin Xuan

6.3.3 Acceptance Test 3

Actor: Reviewer

Developer: Law Chin Xuan

Criteria	Fulfilled	Remarks
Login	Yes	Secure
View Dashboard	Yes	Shows assigned applications
View Students Details	Yes	Can see all submitted form data and documents
Review Application	Yes	Add score, comments, and update status
Update Application Status	Yes	Immediate update reflected in dashboard
Submit Review	Yes	Saved to database and linked to application
View Uploaded Documents	Yes	Can download and preview submitted files
Sort Applications	Yes	By date

Date tested : 3.2.2026

% Complete : 100%

Tested by : Law Chin Xuan

Verified by :Nur Athirah binti Ishak

6.3.4 Acceptance Test 4

Actor: Admin

Developer: Amalina Saffieya binti Hamdan

Criteria	Fulfilled	Remarks
Login	Yes	Secure
View Dashboard	Yes	Real time
View and edit users	Partially	Can read only for now
Create scholarship	Yes	Saved and published to student
Assign reviewer	Yes	Complete
Update status	Yes	Immediate update
View logs	Yes	Complete
Generate report	Yes	CSV exported

Date tested : _____

% Complete : _____

Tested by : _____

Verified by : _____

...

7 Sample Screens

7.1 Main Screen

7.1.1 Register

The system allows four types of users to register: Student, Reviewer, Scholarship Committee, and Admin. During registration, users are required to provide a username, email, ID, role selection, and password.

- Student: Registers to apply for available scholarships, fill in personal and academic details, upload required documents, and track application status.
- Reviewer: Registers to review assigned scholarship applications, view student information, provide scores, and submit evaluation comments.
- Scholarship Committee: Registers to oversee the scholarship selection process, monitor application statuses, and make final decisions based on reviewers' evaluations.
- Admin: Registers to manage the overall system, including user management, scholarship creation, reviewer assignment, and application processing stages.

The screenshot shows a 'Register' form with the following fields:

- Username: atirahishak
- Email: atirahishak22@gmail.com
- ID: 018
- Role: Student
- Password: (redacted)
- Confirm Password: (redacted)

At the bottom of the form are two buttons: a blue 'Create Account' button and a link 'Already have an account? [Login](#)'.

7.1.2 Login

After completing registration, users can access the system through the Login screen. Users are required to enter their registered email address and password. Upon successful authentication, the system redirects the user to their respective dashboard based on their assigned role (Student, Reviewer, Scholarship Committee, or Admin).

Register'."/>

Login

Email
athirahishak22@gmail.com

Password
.....

Login

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

7.1.3 Student Dashboard

The Student Main Screen functions as a dashboard that allows students to browse scholarships, manage their profile, and track their application status. It provides a personalized welcome message, clear navigation options, and real-time application information to enhance usability and system interaction.

Scholarship System

Welcome, athirahishak

Browse Scholarships

Your Applications

You have not applied for any scholarships yet.

Edit Profile

Logout

7.1.4 Reviewer Dashboard

This screen serves as the main dashboard for reviewers to manage assigned scholarship applications. It displays a summary of total assigned, pending, and reviewed applications for quick overview. Reviewers can sort applications by date or status to organise their review process efficiently. Application details such as student name, scholarship type, status, and score are listed in a table. Action options are provided to allow reviewers to evaluate assigned applications. This screen supports an organised and systematic scholarship review process.

Scholarship System

Logout

Reviewer Dashboard

Total assigned: 1, Pending: 1, Reviewed: 0

[Sort by Date](#) [Sort by Status](#)

Student	Scholarship	Status	Score	Action
athirahishak	Sports Excellence Scholarship	Under Review	-	Review

7.1.5 Scholarship Committee Dashboard

This screen serves as the main dashboard for the scholarship committee to monitor application statistics. It displays a summary of total applications, pending applications, accepted applications, and rejected applications. Colour-coded indicators are used to clearly distinguish different application statuses. The dashboard provides a quick overview to support decision-making and application tracking. A navigation button is available to allow committee members to view all submitted applications. This screen improves efficiency in managing and overseeing the scholarship selection process.

Scholarship System

Logout

Scholarship Committee Dashboard

Total Applications	3	Pending	2	Accepted	1	Rejected	0
--------------------	---	---------	---	----------	---	----------	---

[See All Applications](#)

7.1.6 Admin Dashboard

This screen serves as the main dashboard for system administrators. It displays an overview of total scholarship applications and available scholarships. Administrators can quickly access application and scholarship management functions. Action buttons are provided to create scholarships, manage users, and manage applications. Additional options allow administrators to generate reports and view system logs. This screen supports efficient system administration and overall system control.

Scholarship System

Logout

Admin Dashboard

Total Applications 3 <small>Click to manage applications</small>	Scholarships 6 <small>Click to manage scholarships</small>
--	--

[Create Scholarship](#) [Manage Users](#) [Manage Applications](#) [Generate Reports](#) [System Logs](#)

7.2 Subsystem Student

7.2.1 Update Personal Profile

This screen allows students to view and update their profile information. Students can edit their username and view their unique user identification number. An option is provided for students to change their account password to enhance security. The update button allows changes to be saved to the system. Clear layout and labels help users manage their account details easily. This screen supports secure and efficient user profile management.

The screenshot shows a web-based application interface titled "Customize Your Profile". At the top left is the "Scholarship System" logo, and at the top right is a "Logout" link. The main content area has a title "Customize Your Profile". Below it are two input fields: "Username" containing "athirahishak" and "Your ID" containing "018". To the right of these fields are two buttons: a red "Change your password" button and a blue "Update Account Details" button.

7.2.1.1 Update Password

This screen allows students to update their account password securely. Students are required to enter their current password for verification. A new password must be provided and confirmed to ensure accuracy. Password requirements are displayed to guide users in creating a strong password. Action buttons allow users to update the password or cancel the operation. This screen enhances account security and protects user information.

The screenshot shows a "Change Password" form. It includes fields for "Current Password" (with placeholder "....."), "New Password" (with placeholder "....." and a note "At least 8 characters, include letters and numbers"), and "Confirm New Password" (with placeholder "....."). Below the fields are "Update Password" and "Cancel" buttons.

7.2.2 Browse Available Scholarship

The Browse Available Scholarships screen allows students to view a list of scholarships that are currently open for application. The information is presented in a structured table to ensure clarity and ease of comparison. Each scholarship entry displays the scholarship name, description, eligibility requirements, application deadline, and an Apply button. This enables students to quickly assess their eligibility before submitting an application. The Apply button allows students to proceed directly to the scholarship application process for the selected scholarship.

Available Scholarships				
Name	Details	Requirements	Deadline	Action
Merit Scholarship	This scholarship is awarded to students with outstanding academic performance to support their education and encourage excellence.	<ul style="list-style-type: none"> • Minimum CGPA: 3.5 • Full-time undergraduate student • Malaysian citizen 	30 Mar 2026	Apply
B40 Financial Assistance Scholarship	This scholarship provides financial support to students from low-income families to help reduce the burden of education expenses.	<ul style="list-style-type: none"> • Minimum CGPA: 2.0 • Maximum Household Income: RM3999 • Malaysian citizen • Enrolled in diploma or degree programme 	15 Apr 2026	Apply
Leadership & Community Service Award	Awarded to students who demonstrate strong leadership skills and active involvement in community service activities.	<ul style="list-style-type: none"> • Minimum CGPA: 3.0 • Active participation in student organisations • At least 1 year of leadership experience 	10 Apr 2026	Apply
Sports Excellence Scholarship	This scholarship recognises students who have represented their institution or country in sports competitions.	<ul style="list-style-type: none"> • Minimum CGPA: 2.75 • Represented university, state, or national level • Active athlete • Final year undergraduate student 	05 Apr 2026	Apply

7.2.3 Use Eligibility Check Tool

This screen allows students to apply for a selected scholarship by completing the required application form. The scholarship name and application deadline are displayed to ensure students are aware of the submission period. Students are required to provide personal information such as a passport-sized photo, full name, address, and identification number. Additional details including date of birth, age, and intake are also collected. Clear labels are provided for each field to guide students during form completion.

When the student clicks the Next button, the Eligibility Check Tool is automatically triggered to verify whether the applicant meets the scholarship requirements, such as the minimum CGPA. If the student does not meet the eligibility criteria, the system prevents progression to the next screen and displays a notification informing the student that they are not eligible. This ensures that only eligible applications proceed to the next stage of the process.

Multimedia University Scholarship Form			
Scholarship:	Sports Excellence Scholarship		
Application Deadline:	05 Apr 2026		
Personal Information			
Passport Size Photo	<input type="file" value="Choose File"/> passport lisa.jpg		
Name (as in NRIC / Passport)	NUR ATHIRAH BINTI ISHAK		
Home Address	NO 43, LORONG 43, TAMAN ROSE, 71010, PORT DICKSON , NEGERI SEMBILAN		
IC / Passport Number	050214050202		
Date of Birth	02/14/2005	Age	21
Intake	October 2024		
Programme			

Programme
Degree

Course
Bachelor in Computer Science

Nationality
Malaysian

Race
Malay

Sex
 Male Female

Contact Number
0173354768

Home Contact Number
066515467

Household Monthly Income (RM)
3000

Please upload latest **true copy of income proof** (salary slip / employer letter / statutory declaration). PDF format only.

Salary.pdf

Current CGPA
3.70

Please upload your **latest academic transcript or CGPA statement**. PDF format only.

Degree Transcript.pdf

Email Address
athirahishak22@gmail.com

7.2.4 Fill in Family Background Information

This screen allows students to provide family background information as part of the scholarship application process. Students are required to enter details such as family member name, relationship, age, occupation, and monthly income. Multiple rows are provided to record information for more than one family member. This information helps assess the applicant's financial and household background. Navigation buttons are included to allow students to proceed to the next section or return to the previous screen. The screen supports accurate data collection for fair scholarship evaluation.

Scholarship System

Logout

Multimedia University Scholarship Form

Scholarship: Sports Excellence Scholarship

Application Deadline: 05 Apr 2026

Family Background

Name	Relationship	Age	Occupation	Monthly Income (RM)
ALINA	MOTHER	56	TEACHER	3000

[Back](#) [Next](#)

7.2.5 Upload Required Documents

This screen allows students to provide their educational background details for the scholarship application. Students are required to enter the name of their school or institution and their highest academic qualification. An upload section is provided to attach multiple supporting documents, such as academic certificates, result slips, and income slips. This allows students to upload more than one file to ensure that all required documents are submitted. Navigation buttons enable students to proceed to the next section or return to the previous screen. This screen supports accurate verification of the applicant's educational and financial background.

Multimedia University Scholarship Form

Scholarship: Sports Excellence Scholarship

Application Deadline: 05 Apr 2026

Education Background

Name of School / Institution

Highest Academic Qualification

Attach Certified True Copy
 FOUNDATION RESULT. TRANSCRIPT.pdf

7.2.6 Fill in Involvement in Activities

This screen allows students to record their involvement in co-curricular or extracurricular activities. Students are required to enter the activity type, participation level, year, and achievement. Multiple rows are provided to allow students to list more than one activity. This information helps evaluate the student's achievements and level of involvement beyond academics. Navigation buttons enable students to proceed to the next section or return to the previous screen. The screen supports fair assessment of leadership, sports, and community participation.

Scholarship System Logout

Multimedia University Scholarship Form

Scholarship: Sports Excellence Scholarship

Application Deadline: 05 Apr 2026

Involvement in Activities

Type	Level	Year	Achievement
VOLLEY BALL	National	2025	WINNER
	State		

7.2.7 Fill in Personal Statement

This screen allows students to write a personal statement explaining why the student deserves the selected scholarship. Students are required to briefly describe their achievements, motivation, and suitability for the scholarship. A word limit is enforced to ensure the statement remains concise and focused. This section enables students to highlight their strengths beyond academic and activity records. Clear instructions are provided to guide students in preparing their response. The personal statement supports fair and holistic evaluation of scholarship applicants.

The screenshot shows a web-based application for a scholarship form. At the top, it says "Multimedia University Scholarship Form". Below that, it specifies the "Scholarship: Sports Excellence Scholarship" and the "Application Deadline: 05 Apr 2026". A section titled "Personal Statement" asks the student to "State briefly why you are deserving of this scholarship (Max 1000 words)". There is a text area where the student has written about their involvement in volleyball competitions and how it has shaped their discipline, resilience, and commitment. Another paragraph discusses how balancing academic responsibilities with sports has strengthened their time management and leadership skills. At the bottom, there are "Back" and "Submit Application" buttons.

7.2.8 Submit Application and Track Application Status

This screen is displayed after a student successfully submits a scholarship application. A confirmation message is shown at the top to notify the student that the application has been submitted successfully. The dashboard displays the student's submitted scholarship under the **Your Applications** section. Application details such as scholarship name, submission date, and current status are clearly presented. The status indicator allows students to track the progress of their application in real time. This screen helps students monitor submitted applications and manage their scholarship records efficiently.

The screenshot shows a dashboard for managing scholarship applications. At the top, a green banner says "Your application has been submitted!" with a close button. Below it, the user is welcome with "Welcome, athirahishak" and a "Edit Profile" button. A "Browse Scholarships" button is also present. The main section is titled "Your Applications" and lists one application:

Scholarship	Status	Submitted At
Sports Excellence Scholarship	Pending	2026-02-03

Figure 7.2.8.1: Student application dashboard displaying application status before the review process (Pending).

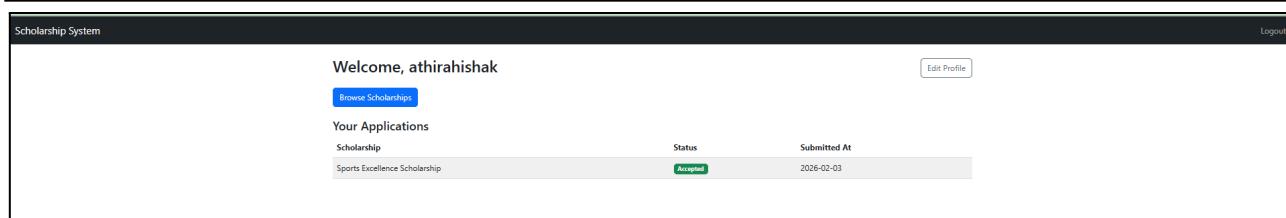


Figure 7.2.8.2: Student application dashboard displaying application status after the review process.

7.3 Subsystem Scholarship Committee

7.3.1 See all Submitted Application

This screen allows the scholarship committee to view and manage all submitted scholarship applications. Applications are displayed in a table with details such as student ID, scholarship type, status, average score, and fail count. Filter and sorting options are provided to view applications by status and evaluation results. The Open action button allows committee members to view detailed application information. Navigation options are available to return to the main dashboard easily. This screen supports efficient review, monitoring, and decision-making in the scholarship selection process.

Scholarship Committee – Applications						
ID	Student ID	Scholarship	Status	Avg Score	Fail Count	Action
5	018	Sports Excellence Scholarship	Under Review	85.00	0	Open
4	12345678	Sports Excellence Scholarship	Pending	0.00	0	Open
3	12345678	Merit Scholarship	Pending	0.00	0	Open
2	01	Merit Scholarship	Rejected	60.00	0	Open
1	12345678	Merit Scholarship	Pending	0.00	0	Open

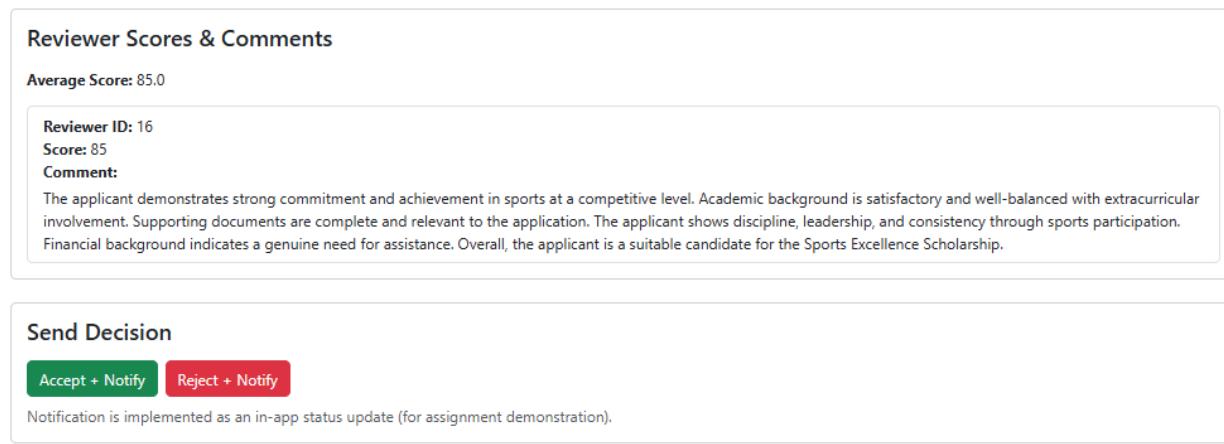
[-- Back to Dashboard](#)

7.3.2 Open an Application to read the Info and Documents

This screen displays detailed information for a selected scholarship application. Application details such as status, submission date, student ID, and scholarship ID are shown for reference. Uploaded supporting documents are listed and can be accessed for verification. Reviewer scores and comments are displayed along with the average evaluation score. The committee can make a final decision by accepting or rejecting the application. This screen supports transparent review and informed decision-making in the scholarship process.

7.3.3 Check Scores and Comments from Reviewers

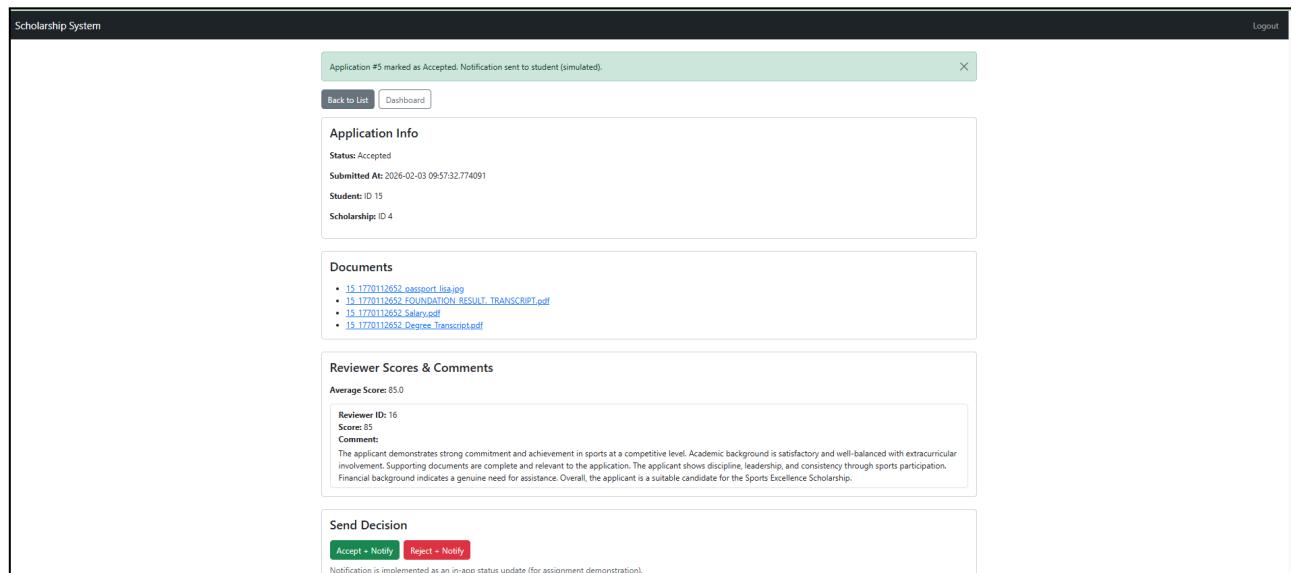
This screen allows the scholarship committee to view the evaluation results submitted by assigned reviewers. The average score is given by reviewer and displayed to provide an overall assessment of the application. Individual reviewer scores and detailed comments are shown to support transparent and informed decision-making. Based on the reviewers' evaluations, the committee can proceed to make a final decision by accepting or rejecting the application, with an in-app notification sent to the applicant. This screen ensures that final scholarship decisions are supported by documented assessments and reviewer feedback.



7.3.4 Send Acceptance or Rejection Notifications

This screen allows the scholarship committee to finalise the application decision after reviewing the evaluation scores and comments provided by reviewers. The committee can choose to accept or reject the

application using the provided action buttons. Once a decision is made, the application status is updated accordingly, and a notification is sent to the student through an in-app status update (simulated). This screen ensures that applicants are informed of the final outcome in a timely and transparent manner while maintaining a clear record of the decision process.



7.4 Subsystem Reviewer

7.4.1 View Assigned Application List

This screen allows reviewers to view and manage all scholarship applications assigned to them by the administrator. The reviewer dashboard displays essential information including the student name, scholarship title, application deadline, current application status, and assigned review score. Reviewers can select an application using the Review button to access full application details such as education and achievements, personal statement, and uploaded supporting documents. An evaluation section is provided for reviewers to assign scores, update application status, and provide comments before submitting the review. This functionality ensures a structured and efficient review process while supporting fair and consistent scholarship evaluation.

Reviewer Dashboard						
Total assigned: 1, Pending: 1, Reviewed: 0						
Sort by Date						
Student	Scholarship	Application Deadline	Status	Score	Action	
atahirahishak	Sports Excellence Scholarship	2026-04-05 00:00:00	Under Review	-	Review	

Figure 7.4.1: Reviewer Dashboard Showing Assigned Scholarship Applications

Software Design Specification for ABC System (Version 3.0)

Scholarship System Logout

Review: Sports Excellence Scholarship				
Student Details				
Full Name	NUR ATHIRAH BINTI ISHAK			
Email	athirahishak22@gmail.com			
IC Number	050214050202			
Date of Birth	2005-02-14			
Age	21			
Address	NO43, LORONG 43,TAMAN ROSE 71010, PORT DICKSON, NEGERI SEMBILAN			
Intake	October 2024			
Programme	Degree			
Course	Bachelor in Computer Science			
Nationality	Malaysian			
Race	Malay			
Sex	Female			
Contact	0173354768			
Home Contact	066515467			
Household Income	3000			
Family Details				
Name	Relationship	Age	Occupation	Income
ALINA	MOTHER	56	TEACHER	3000

Education & Achievements				
School Name	MMU			
Qualification	Others			
Achievements	<ul style="list-style-type: none"> • VOLLEY BALL - National - 2025 - WINNER • - None - - 			

Personal Statement

I am applying for the Sports Excellence Scholarship as a dedicated student-athlete who consistently strives for excellence in both academics and sports. Representing my institution in volleyball competitions at the national level has shaped my discipline, resilience, and commitment to continuous self-improvement. Achieving victory at the national level in 2025 is one of my proudest accomplishments, reflecting years of rigorous training, teamwork, and perseverance. Balancing academic responsibilities with competitive sports has strengthened my time management and leadership skills. Despite the demanding training schedule, I remain committed to maintaining strong academic performance and upholding the values of Multimedia University. Sports have taught me the importance of teamwork, strategic thinking, and handling pressure qualities that I apply in my studies and daily life.

Uploaded Documents

- [15_1770112652_passport_lisa.jpg](#)
- [15_1770112652_FOUNDATION RESULT, TRANSCRIPT.pdf](#)
- [15_1770112652_Salary.pdf](#)
- [15_1770112652_Degree Transcript.pdf](#)

Review

Score (0-100)

Application Status

Eligible

Comments

Supporting documents are complete and relevant to the application.

The applicant shows discipline, leadership, and consistency through sports participation.

Financial background indicates a genuine need for assistance.

Overall, the applicant is a suitable candidate for the Sports Excellence Scholarship.

Submit Review

Figure 7.4.2: Reviewer Evaluation Screen for Scholarship Application

7.4.2 Finalize and Submit Review

This screen allows reviewers to finalize and submit their evaluation for an assigned scholarship application. After completing the assessment, reviewers submit the review, which updates the application

status and records the assigned score in the system. A confirmation message is displayed to indicate that the review has been successfully submitted. The reviewer dashboard is then updated to reflect the reviewed application, including its final status and score. This process ensures that reviews are properly recorded and contributes to a transparent and efficient scholarship evaluation workflow.

The screenshot shows a "Reviewer Dashboard" with a header "Scholarship System" and a "Logout" link. A green success message box at the top says "Review submitted successfully". Below it, the dashboard displays a table with one row of data:

Student	Scholarship	Application Deadline	Status	Score	Action
athirahishak	Sports Excellence Scholarship	2026-04-05 00:00:00	Eligible	85	View

7.5 Subsystem Admin

7.5.1 Admin Manages User Accounts

This screen allows the administrator to view and manage all user accounts registered in the scholarship system. The administrator can view user details such as user ID, username, email address, and assigned role (student, reviewer, committee, or admin). The user list provides an overview of system users to support role management and access control. Although the current implementation is view-only, this screen establishes a foundation for future enhancements such as creating, editing, or deleting user accounts. This functionality helps ensure proper system administration, role assignment, and overall system security.

The screenshot shows a "Manage Users" page with a header "Scholarship System" and a "Logout" link. A note at the top says "View-only mode: Admin can view all users. (Create/Edit/Delete can be added later.)". Below is a table of user data:

ID	Username	Email	Role
1	sc1@gmail.com	sc1@gmail.com	committee
2	re1@gmail.com	re1@gmail.com	reviewer
3	st1@gmail.com	st1@gmail.com	student
4	st2@gmail.com	st2@gmail.com	student
5	st3@gmail.com	st3@gmail.com	student
6	admin@gmail.com	admin@gmail.com	admin
7	ali	abc@gmail.com	student
8	aaaa	abc@gmail.com	reviewer
9	st001@gmail.com	st001@gmail.com	student
10	student01@gmail.com	student01@gmail.com	student
11	student02@gmail.com	student02@gmail.com	student
12	student03@gmail.com	student03@gmail.com	student
13	reviewer1@gmail.com	reviewer1@gmail.com	reviewer
14	admin	admin@system.com	admin
15	athirahishak	athirahishak22@gmail.com	student
16	amalina	amalina22@gmail.com	reviewer
17	chin	chin22@gmail.com	committee
18	nelson	nelson22@gmail.com	admin

[Back to Dashboard](#)

7.5.2 Admin Manage Scholarship

ID	Title	Deadline	Applications	Action
7	YAVASAN TM SCHOLARSHIP	2026-04-22	0	View Edit
6	International Student Achievement Scholarship	2026-03-25	0	View Edit
5	Final Year Project Support Grant	2026-03-20	0	View Edit
4	Sports Excellence Scholarship	2026-04-05	2	View Edit
3	Leadership & Community Service Award	2026-04-10	0	View Edit
2	B40 Financial Assistance Scholarship	2026-04-15	0	View Edit
1	Merit Scholarship	2026-03-30	3	View Edit

[Back to Dashboard](#)

7.5.2.1 Admin Creates Scholarship Listings and Sets Eligibility Criteria

This screen allows the administrator to create and manage scholarship listings within the system. The administrator can enter and edit key scholarship information, including the scholarship title, description, eligibility requirements, required documents, and application deadline. Optional fields such as minimum CGPA and maximum household income are provided to define eligibility criteria more precisely. Additional requirements can be listed to ensure applicants meet specific conditions. The **Save Changes** button allows the administrator to update the scholarship details, ensuring that the information displayed to students is accurate and up to date. This functionality enables efficient administration and maintenance of scholarship offerings.

Edit Scholarship

[Back](#)

Title: YAVASAN TM SCHOLARSHIP

Description: Telekom Malaysia (TM) offers staff scholarships and tuition fee discounts for employees and their children, particularly for studies at Multimedia University (MMU).

Requirements (Optional):

Minimum CGPA: 3.70
Leave empty if not required.

Maximum Household Income (RM): 10000
Leave empty to ignore income requirement.

Other Requirements (one per line):

Applicant must be a child of Telekom Malaysia employee
Applicant must be enrolled as a full-time student at Multimedia University
Applicant must maintain minimum CGPA throughout the scholarship period

Documents Required:
parent employment verification letter with salary, academic transcript, passport size photo

Application Deadline: 04/22/2026

Save Changes

Figure 7.5.2.1.1: Edit Scholarship Listing

The screenshot shows a scholarship application page for 'YAYASAN TM SCHOLARSHIP' with ID 7. A green success message at the top left says 'Scholarship updated successfully!'. Below it, the application title is 'YAYASAN TM SCHOLARSHIP' and the ID is 'Scholarship ID: 7'. There are two main sections: 'Description' and 'Eligibility Criteria'. The 'Description' section contains the text: 'Telekom Malaysia (TM) offers staff scholarships and tuition fee discounts for employees and their children, particularly for studies at Multimedia University (MMU).'. The 'Eligibility Criteria' section lists the following requirements:

- Minimum CGPA: 3.7
- Maximum Household Income: RM10000
- Applicant must be a child of Telekom Malaysia employee
- Applicant must be enrolled as a full-time student at Multimedia University
- Applicant must maintain minimum CGPA throughout the scholarship period

Below these sections is a 'Details' section containing the following information:

- Deadline: 2026-04-22
- Documents Required: parent employment verification letter with salary, academic transcript, passport size photo
- Applications: 0

At the top right of the page are 'Edit' and 'Back' buttons.

Figure 7.5.2.1.2: After Save Changes

7.5.3 Admin Assigns Reviewers

This screen allows the administrator to assign one or more reviewers to a specific scholarship application. The administrator can select reviewers from a list of available reviewer accounts and assign them to the chosen application. Multiple reviewers can be selected to support fair and balanced evaluation. The list of already assigned reviewers is displayed to avoid duplication and ensure clarity. This functionality helps distribute review tasks efficiently and ensures that each application is evaluated by the appropriate reviewers.

The screenshot shows the 'Assign Reviewers' interface. At the top, it says 'Assign Reviewers' and 'Application ID: 5'. Below that is a 'Select Reviewers' section with a dropdown menu containing the following email addresses: 'rcl@gmail.com', 'aaaa', 'reviewer1@gmail.com', and 'amalina'. A note below the dropdown says 'Hold Ctrl (Windows) to select multiple reviewers.' At the bottom of this section are 'Assign Selected Reviewers' and 'Back' buttons. Below this is a 'Already Assigned Reviewers' section with a single entry: 'amalina (ID: 16)'.

7.5.4 Admin Manage Application Processing Stages

This screen allows the administrator to manage and monitor the processing stages of all scholarship applications. The administrator can view key information such as application ID, student name, scholarship type, and current application status. A status update dropdown is provided to change the application stage (e.g., Submitted, Under Review, Accepted, or Rejected), and the Save button is used to confirm the update. The Assign button enables the administrator to assign reviewers to each application, while the View button allows detailed inspection of application information. This screen ensures structured workflow management, transparency, and efficient administration of the scholarship evaluation process.

ID	Student	Scholarship	Status	Update Status	Reviewers	Action
5	athirahishak	Sports Excellence Scholarship	Under Review	Under Review	<input type="button" value="Save"/> <input type="button" value="Assign"/> <input type="button" value="View"/>	
4	ali	Sports Excellence Scholarship	Pending	Submitted	<input type="button" value="Save"/> <input type="button" value="Assign"/> <input type="button" value="View"/>	
3	ali	Merit Scholarship	Pending	Submitted	<input type="button" value="Save"/> <input type="button" value="Assign"/> <input type="button" value="View"/>	
2	student01@gmail.com	Merit Scholarship	Rejected	Rejected	<input type="button" value="Save"/> <input type="button" value="Assign"/> <input type="button" value="View"/>	
1	ali	Merit Scholarship	Pending	Submitted	<input type="button" value="Save"/> <input type="button" value="Assign"/> <input type="button" value="View"/>	

[Back to Dashboard](#)

7.5.5 Admin Handle System Log

Admins can see all the history actions to keep track of their progress and to make sure their work done on time. Admin can also filter action to see who has been assigned the reviewer

ID	Time	Level	Action	Message	User
1	2026-01-22 09:23:21.925503	info	ASSIGN_REVIEWERS	Admin assigned 1 reviewer(s) for application #1	admin (ID 3)

7.5.6 Admin Generates Reports

Admin can generate report in excel to show the total number of user and scholarship applied.

Scholarship System

Admin Dashboard Logo

Admin Reports

[Back to Dashboard](#) [Export CSV](#)

Totals

- Total Users: 4
- Total Scholarships: 6
- Total Applications: 1

Applications by Status

- Pending: 1

Users by Role

- admin: 2
- reviewer: 1
- student: 1

A	B	C	D	E	F	G	H	I	J	K	L	M
1 ReportType	Key	Value										
2 Totals	Total Users	4										
3 Totals	Total Scholarships	6										
4 Totals	Total Applications	1										
5 Applications by Status	Pending	1										
6 Users by Role	admin	2										
7 Users by Role	reviewer	1										
8 Users by Role	student	1										
9												
10												
11												
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admin report +

8 Reflection and Learning Outcomes

Team member	Reflection and Learning Outcomes
Nur Athirah binti Ishak	I learned how to design and develop the student module for a scholarship website, focusing on a smooth application workflow and usability. Working with my teammates helped me understand system integration between modules, improved my teamwork skills, and strengthened my problem-solving ability. Also, I gained a better understanding of how students interact with the system, from account registration to scholarship application submission.
Amalina Saffieya binti Hamdan	I learned how to develop an admin module that requires careful planning and a good understanding of system requirements. Good teamwork and continuous practice helped me overcome challenges in integrating different modules and improved my problem-solving skills.

9 User Guide

This section provides a step-by-step guide on how to run and use the **Digital Scholarship Application and Tracking System**.

1. Unzip the digitsystem folder containing the Scholarship System files.
2. Launch Visual Studio Code.
3. Click “Open Folder” and select the digitsystem folder.
4. Under the Explorer section, locate and open run.py.
5. From the top menu in Visual Studio Code, open Terminal → New Terminal.
6. In the terminal, enter the command:

```
python run.py
```
7. Copy the generated URL <http://127.0.0.1:5000> and paste it into a web browser to access the system.
8. Register a new account and log in to start using the system.

10 Conclusion

10.1 Completion of Software

We have successfully completed the Private Kindergarten Assessment Tracker, ensuring that all key functionalities are fully implemented and operational. The system effectively supports all four user roles which are Parents, Teachers, Principals, and Administrators with tailored features designed to facilitate seamless assessment tracking, progress monitoring, and

communication.

For parents, the platform allows them to view their child's assessment results, track progress over time, and communicate with teachers. This ensures they stay informed about their child's academic development and receive timely updates.

For teachers, the system provides tools to record student assessments, update progress reports, and communicate with parents. The structured workflow ensures that assessments are consistently documented and shared in a timely manner.

For principals, the system enables them to review and approve assessments, monitor student performance across the kindergarten, and provide feedback to teachers. By maintaining oversight of student progress, they can ensure educational standards are met.

For administrators, full system control is provided, allowing them to manage user accounts, oversee security settings, and maintain platform functionality. Their role is crucial in ensuring smooth operation and data integrity within the system.

With a well-structured workflow, the system facilitates efficient student assessment tracking, ensuring that teachers can assess students systematically, principals can verify records, and parents can stay updated on their child's development. The platform's user-friendly design and integrated notification system ensure a streamlined, transparent, and accessible assessment tracking experience for all stakeholders.

10.2 Software Quality Assurance

To ensure high software quality, we prioritized understanding project requirements and addressing key issues. Throughout the development process, each module was individually tested to verify its functionality, focusing on data accuracy, proper user authentication, and correct information retrieval from the database. Once subsystems were integrated, we conducted further testing to confirm seamless interoperability without introducing errors.

To enhance software quality, we addressed architectural flaws during the design phase and followed a structured development plan. Standardizing tools and documentation helped maintain consistency, utilizing Flask as the primary framework along with SQLite for database management. Any deviations from the project plan were documented, and challenges were addressed through collaborative problem-solving within the team.

By implementing robust testing methodologies, we ensured that all user roles could interact with the system as intended, minimizing bugs and improving overall usability.

10.3 Group Collaboration

Our team worked closely together to ensure the successful completion of the project. Regular checklist updates, Google meetings, and in-person discussions were used to track progress, address challenges, and share resources.

Throughout development, team members actively reviewed each other's work, providing feedback and collaborating on debugging sessions. Online meetings allowed for real-time discussions, clarifications, and brainstorming, while face-to-face meetings provided deeper insights into project requirements and user role functionalities.

This balanced approach to collaboration and combining virtual communication with hands-on teamwork ensured that every aspect of the project was effectively managed. The team's coordination, problem-solving efforts, and knowledge-sharing played a crucial role in delivering a fully functional, user-friendly system within the given timeframe.

10.4 Problems Encountered

During the development of the Private Kindergarten Assessment Tracker, the team encountered several challenges that impacted progress. The project required significant time investment, particularly during database structuring, integration, and testing phases. One of the primary challenges was learning and adapting to Flask. Since this was our first time working with Flask, understanding its framework structure, authentication system, and database relationships required extensive research. Debugging syntax errors, managing database migrations, and implementing user authentication were particularly time-consuming. To overcome this, we relied on external learning resources such as YouTube tutorials and Flask documentation. While these sources were helpful, they often lacked specific solutions for our project's unique needs, leading to additional trial and error during development.

Time constraints also posed a challenge, as the need to both learn Flask and develop a fully functional system within a limited timeframe added pressure to the team. The complexity of user role permissions, assessment management, and approval workflows required extra attention, and some features had to be refined multiple times to ensure correct functionality. Despite these challenges, the project provided invaluable learning experiences, equipping the team with hands-on skills in Flask, database management, and full-stack development. The experience has strengthened our ability to develop structured, scalable applications and will serve as a strong foundation for future projects.

References