PERSADA CLUB MANAGEMENT SYSTEM

SITI NURUL NURHAFIZAH BINTI ROSZAIMI
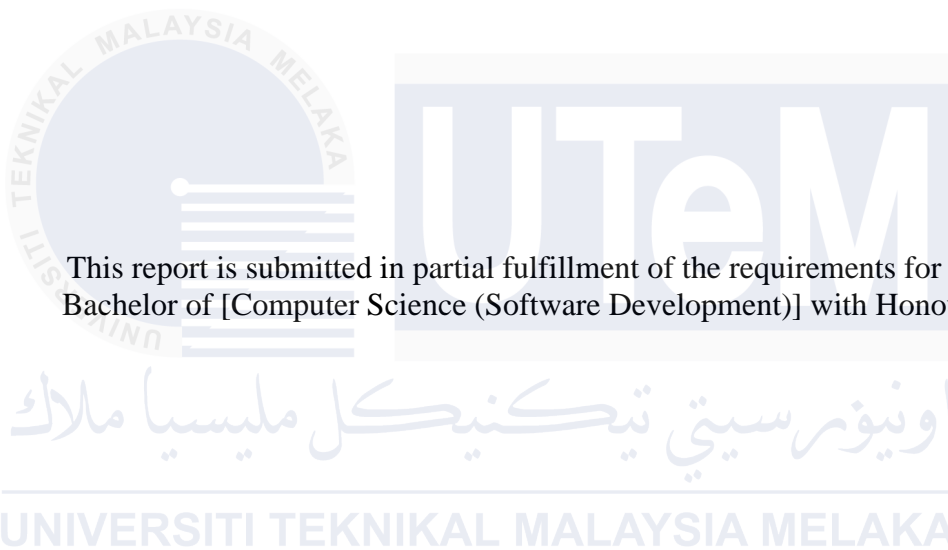
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

PERSADA CLUB MANAGEMENT SYSTEM

SITI NURUL NURHAFIZAH BINTI ROSZAIMI

This report is submitted in partial fulfillment of the requirements for the
Bachelor of [Computer Science (Software Development)] with Honours.

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA
26 AUGUST 2024

DECLARATION

I hereby declare that this project report entitled

[PERSADA CLUB MANAGEMENT SYSTEM]

is written by me and is my own effort and that no part has been plagiarized

without citations.

STUDENT : SITI NURUL NURHAFIZAH BINTI ROSZAIMI   Date : 26 August 2024

I hereby declare that I have read this project report and found

this project report is sufficient in term of the scope and quality for the award of

Bachelor of [Computer Science (Software Development)] with Honours.

SUPERVISOR   : Ts. Dr. UMMI RABA'AH HASHIM   Date : 26 August 2024

.

iii

DEDICATION

I would like to dedicate this final year project to my supervisor, Ts. Dr. Ummi Raba'ah Hashim for his unwavering support and patience throughout its completion. His guidance and motivation were invaluable, and I deeply appreciate all the help I received from him. I also want to dedicate this project to my beloved parents, who have consistently stood by me, providing moral, financial, and emotional support during my university studies and encouraging me throughout this project. Lastly, I extend my dedication to my dear friends, who have always been supportive, assisting me in my studies, and offering abundant encouragement.

ACKNOWLEDGEMENTS

I am deeply thankful to everyone who supported me throughout this journey to complete the project. I extend my heartfelt gratitude to my supervisor, Ts. Dr. Ummi Raba'ah Hashim, whose guidance and motivation were invaluable in reaching this milestone.

I also want to express my appreciation to my classmates and friends who continuously encouraged and assisted me throughout this project. I am truly grateful to have such wonderful companions at University Teknikal Malaysia Melaka. I am immensely grateful to my family for their unwavering support. Their constant presence and encouragement played a crucial role in helping me accomplish this project. Thank you to each and every one of you who believed in me and stood by me throughout this journey.

ABSTRACT

PERSADA Club Management System is a system that records the attendance of students in each program and information about PERSADA. This system was developed to facilitate management to collect student attendance information in each program organized by the PERSADA club and this system can be used by all committees, administrators and students. The system also facilitates club advisors in taking student registration to join the club.

The PERSADA Club Management System has been designed to computerize and automate the operations performed over the information about the student attendance manage program that organized by clubs and all other operations. This computerization of PERSADA Club Management System helps in many instances of its maintenances. It reduces the workload of management as most of the manual work done is reduced. To build this system, the database used is Xampp, the system design used is HTML, CSS, JavaScript and Ajax while to link with the database is PHP. The whole system will run on internet. Users will have the felicity to log in from any place with internet connection. After that they will be able to various tasks that are designed for them.

In our system as well, the club advisor can generate an attendance report based on the attendance of students according to the program attended. This system helps in conducting attendance report quickly and can thus help in saving time and the operations will be carried out efficiently.

TABLE OF CONTENTS

LIST OF TABLE

LIST OF FIGURES

CHAPTER 1 : INTRODUCTION

1.1 Introduction

PERSADA Club Management System is one of the student clubs at the Universiti Teknikal Malaysia Melaka (UTeM). This clubs is available for student of generation FELDA. The FELDA Student Agreement (PERSADA) is an aspiration and brainchild of YAB. Dato Seri Mohd. Najib Tun Hj. Abdul Razak, Prime Minister of Malaysia.

This system will be handed over to our project Client, Mr's. Mazne Binti Ja'affar as the chief advisor PERSADA of Universiti Teknikal Malaysia Melaka (UTeM). The use of the latest system can facilitate the collection of student information data more easily and efficiently. The proposed project is developed that can improve the quality of the existing system that is being used by Admin,Committee and students. This PERSADA Club Management System is a web-based system that manage information about PERSADA Club and records student attendance in each program organized by the PERSADA Club. The information will be sent directly to the database.

This user for PERSADA Club Management Management System are committee, students, admin and advisor. Students have faced some problems for example students do not know the latest update that is the PERSADA program, and also students need long queues to register. The purpose of this system is to develop to make it easier for management to collect student attendance information in each program organized by PERSADA. This system also can make students easier to know the latest information about PERSADA.

1.2 Problem Statement

1. The clubs use a paper-based system and manually record to keep track of the club members and organized program activities and takes a lot of time.
2. Student attendance not recorded in digital database and data student might lost.
3. Students do not know about the latest programs for the club that have been done.

1.3 Objective

There are objective for PERSADA Clubs Management System

    i.   To develop a web system based PERSADA Clubs Management System for UTeM student.

   ii.   To register student as PERSADA member inside database.

  iii.   To record student attendance list which is attend for PERSADA programs or activity.

  iv.   To provide student about the latest information on club programs or activity.

1.4   Scope

1.4.1   User Scope

To ensure that the project objectives can be achieved, the development of the system will be based on the scope of the system and the scope of the users.

Admin / Committee Scope

   i.   Admin/Committee able to create account.

   ii.   Admin/Committee able to log in and log out system.

   iii. Admin/Committee able to monitor the attendance of students participating in the programs.

   iv. Admin/Committee able to add, delete and update the programs.

   v.   Admin/Committee able to create an event or program of PERSADA.

   vi. Admin/Committee able to record the attendance of students according to the program attended.

   vii. Admin/Committee able to print report attendance by program.

Student Scope

   i.   Student able to view the program or activity in the PERSADA clubs.

   ii.   Student able to register as member PERSADA clubs.

1.4.2   System Scope

Scope of the system includes:

   i.   System can show as the information about the PERSADA club activity.

   ii.   System can authenticate users upon their login.

   iii. System can records student attendance.

   iv. System can save data to the database.

   v.   System can print report of program.

1.5   Project Significance

The proposed system is designed to enhance the management of student attendance and participation in programs, offering several key benefits to different stakeholders. For administrators or committee, it enables efficient and accurate monitoring of student attendance, reducing the need for manual record-keeping and minimizing errors. For students, the system provides a user-friendly interface to view their activity program. This convenience encourages regular engagement and allows students to track their participation and attendance effectively. The system also optimizes resources by saving time on administrative tasks and reducing costs associated with manual processes. Overall, the proposed system enhances administrative efficiency, ensures data accuracy, improves user experience, and fosters a more organized, accountable, and transparent environment.

1.6   Conclusion

The PERSADA Club Management System, developed for Universiti Teknikal Malaysia Melaka (UTeM), represents a pivotal advancement in managing student club activities efficiently. By transitioning from outdated paper-based methods to a streamlined web-based platform, the system addresses longstanding challenges faced by administrators and students alike. For administrators and committee members, it automates tasks such as student registration, program management, and attendance tracking, significantly reducing time spent on manual processes while enhancing data accuracy and transparency. Meanwhile, students benefit from real-time access to club event information and simplified registration processes, fostering greater engagement and participation. Overall, the implementation of this system not only modernizes administrative practices but also enriches the student experience, promoting a more organized and inclusive club environment at UTeM.

CHAPTER 2 : LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1   Introduction

This literature review will discuss about sources that related to the project. There are many sources and research done and from there details about this project are known and can understand briefly about the project. The main purpose of the literature review was to survey previous system by make improvement to the system, make user work be easy and satisfies the user. Literature reviews are essential in academic research for providing comprehensive backgrounds for proposals, identifying knowledge gaps, and supporting evidence-based practices. They guide researchers by highlighting areas needing further investigation, inform policymakers with synthesized evidence, and offer context for historical and theoretical studies. Additionally, literature reviews facilitate professional development by summarizing current trends and knowledge, thus playing a vital role in advancing understanding and progress in various fields. In the previous days, Universiti Teknikal Malaysia Melaka used a manual system where students had to queue to register for a club. Attendance is also taken manually and takes a long time. Another problem with using this method is that students need long queues to register and the registration process will be congested. Students will also not know more about a club.

The development of the PERSADA Club Management System will follow the Waterfall methodology, which provides a structured, step-by-step approach to ensure successful completion. Each phase is fully completed before moving on to the next, with progress reviewed at each stage to keep the project on track. This methodology was chosen for its consistency and thorough documentation, which aids in creating a comprehensive system and supports future upgrades and studies.

2.2   Facts and findings

2.2.1   Domain

The domain of the PERSADA Club Management System is situated within Universiti Teknikal Malaysia Melaka (UTeM), specifically targeting students who are part of the FELDA generation. This initiative, known as the FELDA Student Agreement (PERSADA), was inspired by YAB Dato Seri Mohd. Najib Tun Hj. Abdul Razak, the Prime Minister of Malaysia. The club's primary objectives include fostering a supportive community, organizing events and programs, and enhancing the educational experience for FELDA students at UTeM.

2.2.2   Existing System

The existing system aims to streamline the collection and management of student information and attendance data for the club's activities. However, it faces several challenges, such as inefficient data handling and communication gaps, which result in students being unaware of program updates and experiencing long queues for registration.

The new proposed web-based system will address these issues by providing a more efficient way to manage PERSADA Club information and record student attendance. The system will cater to the needs of committee members, students, administrators, and the advisor, ensuring that all stakeholders can easily access and manage relevant information. This enhancement will facilitate better communication, allowing students to stay updated on the latest PERSADA programs and simplifying the registration process.

Therefore, to support analysis, figure below shows the findings of similar operation in managing PERSADA Club Management System.

Table 2.1: Existing Operation of PERSADA Club Management System.

Website	envato market	ERP Academe	eSiS Web Based Staff Information System
Interface	User friendly	User friendly	User friendly
Security	Secure	Secure	Secure
User	Student and Teacher	Student	Student and Admin
Functionality	Real time punch data will be pulled to device by this software and then save record to mssql server.	The process of maintaining attendance registers is a cumbersome task and is extremely difficult to track historical records as most of the registers find themselves stacked in cupboards in a degraded state.	Take staff attendance and to maintaining the information. This system also can easily add, edit or review the attendance data. Depending on user permissions and user departments you can carry out exports or set up automated tasks.

2.2.3   Techniques

Projects that are successful are well-managed. To effectively manage a project, the management or development must identify the software development techniques that are most suited to the project at hand. Each technique has its own set of strengths and drawbacks, and it exists for a variety of reasons. Here are the system development techniques we have chosen to be implemented for this project.

2.2.3.1   Data

i.   Entity Relationship Diagram

ER diagrams are used to model and create relational databases, both in terms of logic and business rules and the technology to be employed. An ER diagram is frequently used as the first step in developing requirements for an information systems project in software engineering. It's also used to model a specific database or databases. These entities can have properties defined via attributes. An ER diagram depicts the logical structure of databases by identifying entities, their attributes, and the interactions between them. A relational database has a relational table equivalent that can be stated that way if necessary. For this project development, the crow's foot model of ERD will be used to illustrate the relational database.

ii.   Data Dictionary

A Data Dictionary is a list of names, definitions, and attributes for data objects in the ER Diagram that are being used or recorded. It explains the meanings and goals of data elements in the context of a project, as well as interpretation, accepted meanings, and representation. A Data Dictionary also contains information about data pieces in the form of metadata. A Data Dictionary's metadata can help define the scope and properties of data items, as well as the rules that govern their use and application.Furthermore, it aids in the avoidance of data discrepancies across a project and the definition of project-wide conventions.

2.3 Project Methodology

A suitable methodology for this PERSADA Club Management System development can ensure the successfulness of this system. Methodology provides step by step guidelines to complete the system. In this chapter, decision on which methodology should be used and how to apply the methodology in PERSADA Club Management System development will be discussed and study for the system process that will be develop.

In this phase, the design and process is a system must use a specific model, The methodology that has been used in the process of development PERSADA Club Management System is Waterfall methodology model. This model involves finishing each phase completely before going on the next one, there is no overlap phase. When each phase is completed successful, the developer reviewed to see the project is on track and whatever it is feasible to continue. In this system development process can be easy to handle. Waterfall development with the virtue of consistency and completeness of process documentation are the main reasons why it has been chosen as the methodology in this system development. Step-by-step approach of waterfall development has provided clear guidelines to developers to develop a complete functional system. Moreover, completeness of process that produce in waterfall development can help further upgrading tasks and study of this system.
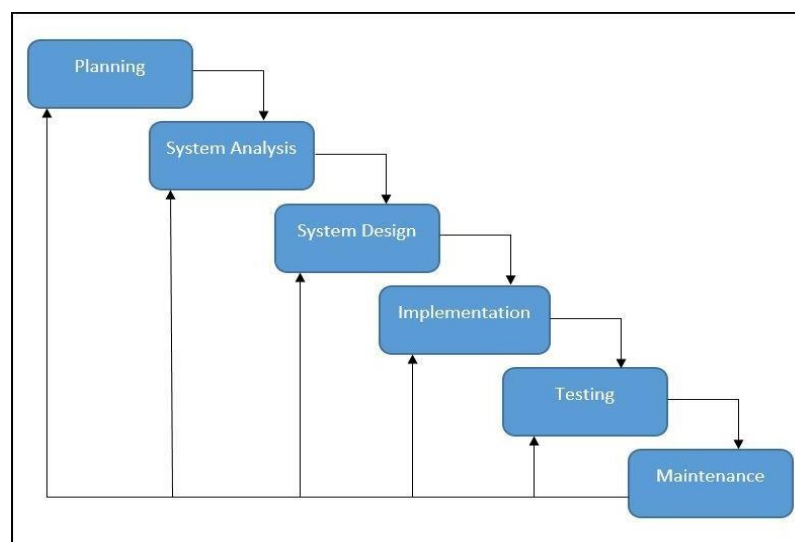
Figure 2.1: Waterfall SDLC (Software Development Life Cycle) Model

i. Planning

The system planning phase is important to define the worthiness of developing this system. Without planning, the project will not be able to complete with a more systematic way. Information realistic and useful will lead to a smooth process of development of information systems. The process of finding a suitable title for the final project. The developers decided to build a PERSADA Club Management System. Interview session should be hold between project client and developers. Gather all requirements from project client as well as users. With the understanding of requirements, developers are able to define the problem statement, objective and project scope of the system that going to develop. Feasibility of the system in order to decide whether it is worthwhile to proceed further. Four feasibilities need to be considered which is operational feasibility, technical feasibility, economic feasibility and schedule feasibility. If the system is not worthy to proceed, developers will inform the project client. Gantt chart is a horizontal bar chart that illustrates a system development schedule PERSADA Club Management System. All processes need to be included in Gantt chart to ensure all the process will follow a predetermined period of time.

ii. System Analysis

In this phase, the process is carried out to find more detailed information and review the system requirements. In this phase, the analysis has determining system requirements based on information that has been obtained and collected. Through the fact-finding techniques, information obtained through interviews and research.

iii. System Design

In the design phase, among the designs to be made in this phase is the interface and database management system. In this phase, the design of which has PERSADA Club Management System will be developed by PHP, HTML, CSS and JavaScript using Adobe Dreamweaver. The process of designing the user interface will be refers to the context diagram, data flow diagrams and entity relationship diagram.

iv. Implementation

In this phase, which everything is designed in previous phases carried out in this phase. In this phase, the implementation are using xampp to store all the database. Generate the real design and add the program code to every interface that designed to function as required.

v. Testing

The test phase is the process of analyzing and testing the system regularly. This phase is carried out to ensure that the system functions and objectives and also to ensure the system is functioning as intended. In this phase, testing the system according the requirement to identify errors that occurred. Systems developed will be tested by users who are proficient in the system.

vi. Maintenance

In the maintenance phase, weaknesses and additional needs will be identified. During this phase, maintenance carried out the errors that have been identified in the testing phase will be repaired and made improvements. Any changes will be recorded in the report book for future references.

2.4   Project Requirements

2.4.1   Software Requirement

Table 2.2: Software Requirements

Web Server Package	Xampp Apache
Database	MySQL
Integrated Development Environment (IDE)	Dreamweaver
Scheduling	padlet
Documentation	Microsoft Word, Visio, Microsoft Project

2.4.2   Hardware Requirement

- Device name : Vivo Book ASUS Laptop X505ZA X505ZA
- Processor : AMD Ryzen 5-2500U Processor, 2.0 GHz (6MB Cache, up to 3.6 GHz, 4 Cores, 8 Threads)
- Installed Ram : 8.00 GB
- System Type : 64-bit operating system, x64-based processor

2.4.3   Other Requirements
- Network and Internet connection: to access external libraries and scripts

2.5   Project Schedule and Milestones

Table 2.3: Project Schedule and Milestones of PERSADA Club Management System

Bil	Activity / Task	Start Date	End Date
1.	Proposal	23/03/2024	27/03/2024
2.	Chapter 1 Report Writing Progress 1	01/04/2024	05/04/2024
3.	Chapter 2 Report Writing Progress 1	15/04/2024	19/04/2024
4.	Project Progress 1	15/04/2024	19/04/2024
5.	Chapter 3 Report Writing Progress 1	06/05/2024	10/05/2024
6.	Project Progress 2	13/05/2024	17/05/204
7.	Chapter 4 Report Writing Progress 2	20/05/2024	24/05/2024
8.	Chapter 5 Report Writing Progress 2	10/06/2024	14/06/2024
9.	Chapter 6 Report Writing Progress 2	17/06/2024	28/06/2024
10.	Chapter 7 Report Writing Progress 2	1/07/2024	5/07/2024
11.	Report Evaluation	6/07/2024	7/07/2024
12.	Implementation System	20/07/2024	25/07/2024
13.	Test and Correct System	15/08/2024	17/08/2024
14.	Demonstration	24/08/2024	24/08/2024
15.	Presentation	28/08/2024	25/08/2024

2.6   Conclusion

In this chapter, we discussed the existing system and the project methodology for the PERSADA Club Management System. We identified the system's domain and reviewed the approach and related research. Additionally, we described the selected methodology, the Software Development Life Cycle (SDLC), and explained the activities involved in each SDLC phase. Based on the literature review and analysis of the current system, we identified the need for a centralized PERSADA Club Management System to enhance the management of club activities and student information. We determined that the SDLC methodology is the best approach for developing this system and Gantt chart also is used depicts to represent the project schedule and milestone reference.
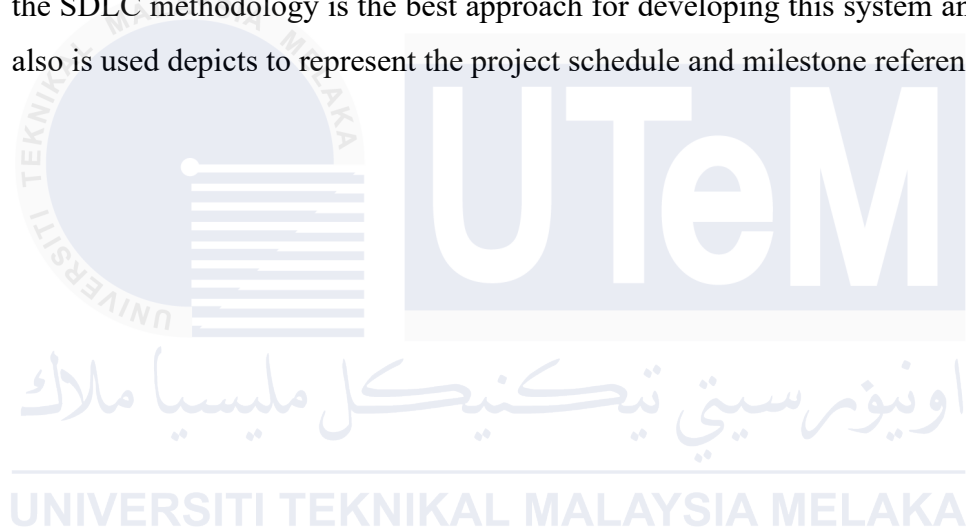
CHAPTER 3 : ANALYSIS

3.1 Introduction

This chapter will describe the problem statements and the diagrams that are commonly documented together during analysis phase. Analysis phase is vital to identify the functionalities and needs that are expected to be built in the PERSADA Club Management System. The functionalities are determined through inspection on limitations of the current, and conventional operation of a PERSADA Club Management System to make sure the upcoming system has a better produce.

3.2 Problem Analysis

The problem analysis for the PERSADA Club Management System identifies several critical issues with the current approach. It reveals inefficient data collection methods relying on manual processes, communication gaps causing delays in updating members about events, and long registration queues hindering student participation. Moreover, fragmented information management across disparate platforms leads to difficulties in accessing and maintaining accurate records. To address these challenges, the analysis underscores the need for a centralized platform that streamlines data management, enhances communication through timely updates, simplifies event registration processes, and improves accessibility to information for both students and committee members. Implementing these improvements is crucial for optimizing club operations and fostering greater engagement among members.

In conclusion, the problem analysis highlights the imperative for developing a robust PERSADA Club Management System that integrates these functionalities seamlessly. By leveraging a structured approach like the SDLC methodology, the system can be systematically designed, tested, and implemented to meet the identified needs effectively. This approach ensures that the new system not only addresses current shortcomings but also sets a foundation for continuous enhancement and adaptation to future requirements, ultimately supporting the club in achieving its goals of efficient management and enhanced member satisfaction.

3.3 Requirement analysis

3.3.1 Data Requirement

The tables as depicted below are the data dictionary which is known as a collection of a repository that stores the information of attributes' name, type, size, constraint and the relationship to one another in the entities that exist in database as drawn in the ER model. This tabular presentation of structure database reflects to the one that will be used by the Relational Database Management System (MySQL).

3.3.2 Functional Requirement

3.3.2.1 Structure Chart

Based on analysis made on problem faced by the existing conventional process of PERSADA Club Management System in figure 3.2, structure chart that contains major and crucial processes as shown below modules that shall be implemented in the development of PERSADA.
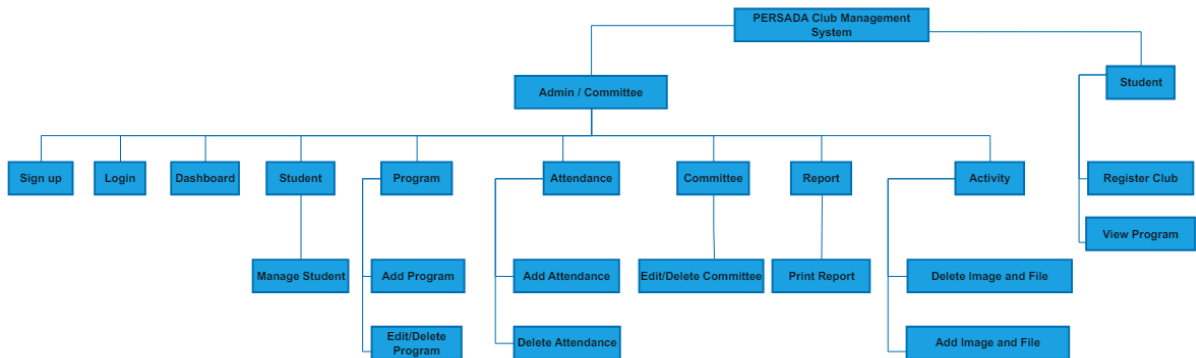
Figure 3.2: Structure Chart of Existing PERSADA Club Management System

3.3.2.2 Context Diagram and Data Flow Diagram (DFD)

Context diagram visualises the overall system by illustrating the relationships of the system itself with the entities. Based on figure 3.3, there are 3 entities that is expected to be involved in this system to be utilised maximumly which are the Admin, committee, and the Student.
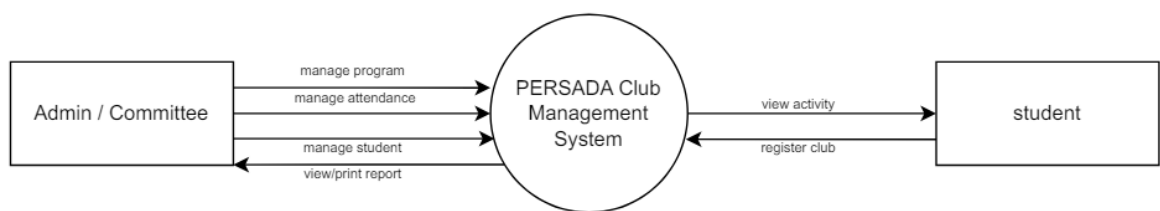
Figure 3.3: Context Diagram of PERSADA Club Management System

The following are the user requirements for three type of system users consists of Admin, Committee and Student

- Admin / Committee

Table 2.4: Functional Requirement for Admin/Committee

ID	Functional Requirement
FR_01	Admin/Committee able to create account.
FR_02	Admin/Committee able to log in and log out system.
FR_03	Admin/Committee able to monitor the attendance of students participating in the programs.
FR_04	Admin/Committee able to add, delete and update the programs.
FR_05	Admin/Committee able to create an event or program of PERSADA.
FR_06	Admin/Committee able to record the attendance of students
FR_07	according to the program attended.

- Student

Table 2.5: Functional Requirement for student

ID	Functional Requirement
FR_08	Student able to view the program or activity in the PERSADA clubs.
FR_09	Student able to register as member PERSADA clubs.

- System

Table 2.6: Functional Requirement for system

ID	Functional Requirement
FR_10	System can show as the information about the PERSADA club activity.
FR_11	System can authenticate users upon their login.
FR_12	System can records student attendance.
FR_13	System can save data to the database.
FR_14	System can print report of program

3.3.3 Non-functional Requirement

The followings describe about the non-functional requirement for the project develop.

i. Performance

The system provides user-friendly services for the user and the system provides performance speed of response, throughput, execution, time and storage capacity.

ii. Reliability

The system has to operate in a reliable manner with no scope for any flaws. This is to ensure efficient working and processing of information.

iii. Portability

All of the code which will be deployed at the web server will be written in PHP, JavaScript and HTML and using SQL Server for database storage. So, using IIS (Internet Information Server) the software will remain portable.

iv. Availability

Admin, Committee and Student can access this site all the time without any issues as long they have internet connection.

3.4 Conclusion

To conclude, the analysis phase is crucial as it lays the groundwork for solutions within the PERSADA Club Management System by systematically uncovering issues and planning for system development. Through thorough findings and planning, this phase aims to enhance overall system quality and reduce occurrences of errors. By ensuring a well-executed analysis, future phases of development can proceed more effectively and comprehensively. Moreover, conducting a robust system analysis offers additional benefits such as minimizing errors early on, which reduces the need for extensive IT support to fix bugs later. It also enables better adaptability to business changes by facilitating modifications tailored to evolving needs. Therefore, the analysis phase stands as a pivotal step in the systematic development of the PERSADA Club Management System.

CHAPTER 4 : DESIGN

4.1 Introduction

In this chapter, we outline the outcomes of both the preliminary design analysis and the subsequent detailed design phase for the PERSADA Club Management System. The analysis phase focused on assessing and refining the initial design concept, while the detailed design phase aimed to create a comprehensive and clearly defined plan. This chapter presents a summary of the significant findings and decisions made during these stages, emphasizing the design considerations and choices that have influenced the final product. By examining the results from these phases, readers will gain a deeper understanding of how the system evolved, laying the foundation for upcoming chapters that will explore specific aspects of its implementation in greater detail.

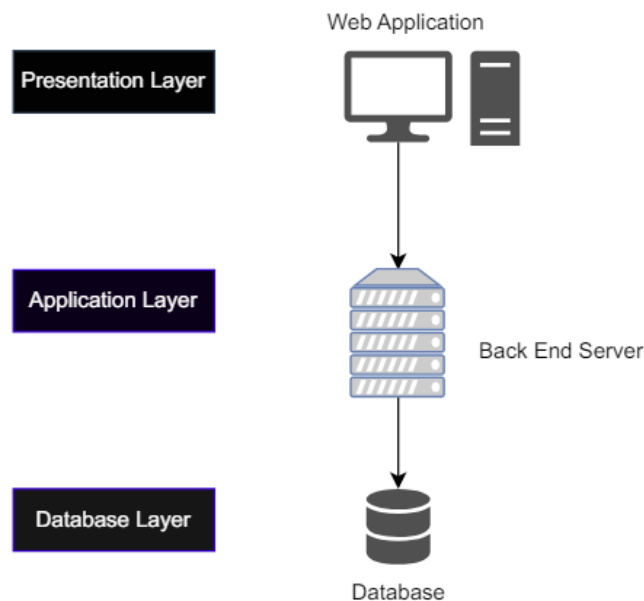## 4.2 High-Level Design

4.2.1 System Architecture

Figure 4.1 System Architecture

21

According to the diagram above, this architecture comprises three layers: the presentation layer, the application layer, and the database layer. Below is a description of each layer:

i. Presentation Layer (Web): The presentation layer manages the user interface and communication within the system, serving as a web interface in this design. It includes web pages, forms, menus, buttons, and other interface elements that users interact with during system implementation. This layer is responsible for creating an intuitive and visually appealing user interface for users to interact with the system.

ii. Application Layer (Back-end: PHP): The application layer, also known as the back-end, handles processing and business logic within the system. In this design, the back-end is implemented using PHP, a widely-used server-side programming language in web development. PHP enables the operation of dynamic, interactive web applications. The application layer performs necessary computations, responds to user requests from the presentation layer, and communicates with the database layer to retrieve or modify data. It captures the core operations of the system and ensures accurate processing of user input and system behavior.

iii. Database Layer (MySQL): The database layer is responsible for storing, maintaining, and retrieving data used by the system. This design utilizes MySQL, a popular open-source relational database management system, to implement the database layer. MySQL provides a stable and efficient way to store and organize data. It enables the application layer to perform operations such as adding, updating, and deleting data. The database layer ensures the system's data security, integrity, and efficient access.

4.2.2 User Interface Design

i. Main Page

On the main page has the slide picture about the activity PERSADA, link to another website and PERSADA Constitution. Then, Student can view the main page such as the slide picture

Figure 4.2 Main Page

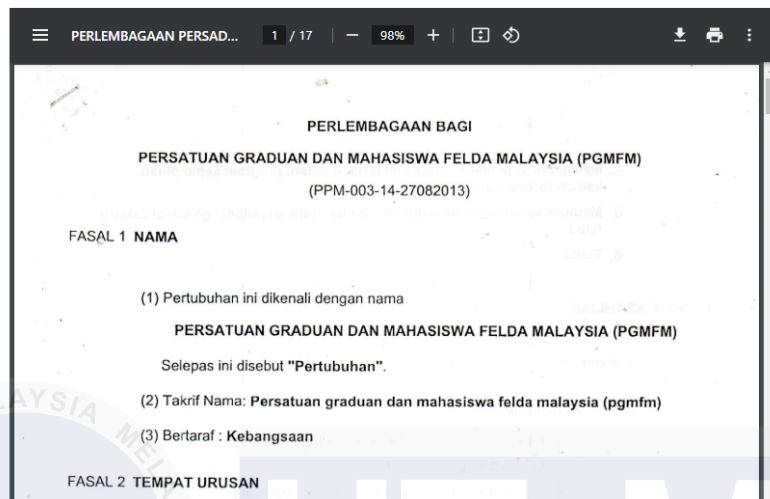## ii. PERSADA Constitution Page

Figure 4.2 PERSADA Constitution

iii. Activity Page

In this calendar, students can view the activities that will be held by the PERSADA club.
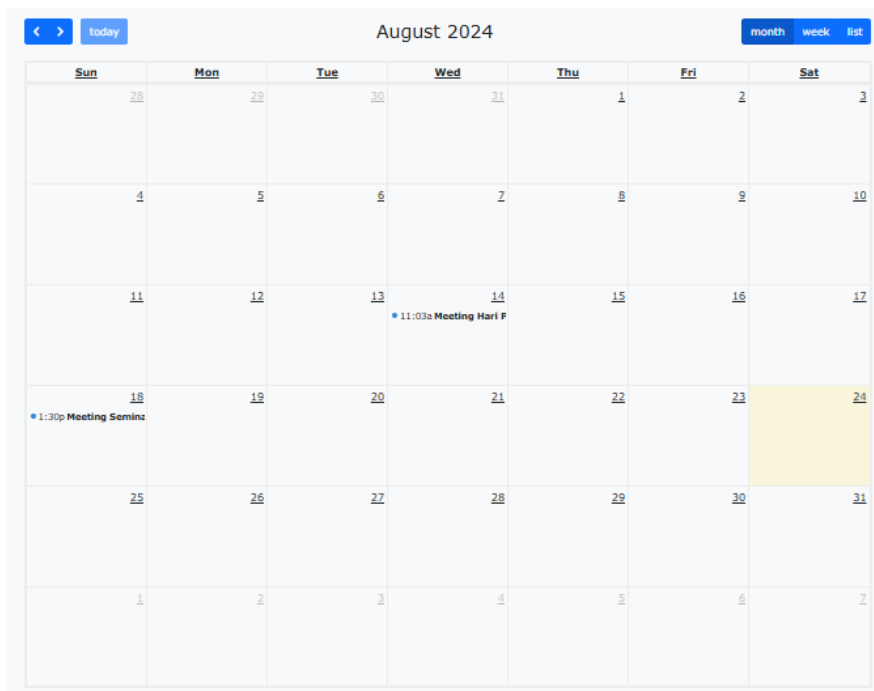
Figure 4.3 Activity Page

24

iv. Registration Club Page

This page is the form for student register club PERSADA.

Figure 4.4 Register Club Page

v. Login Page

Admin and Committee can login in this page by validation.
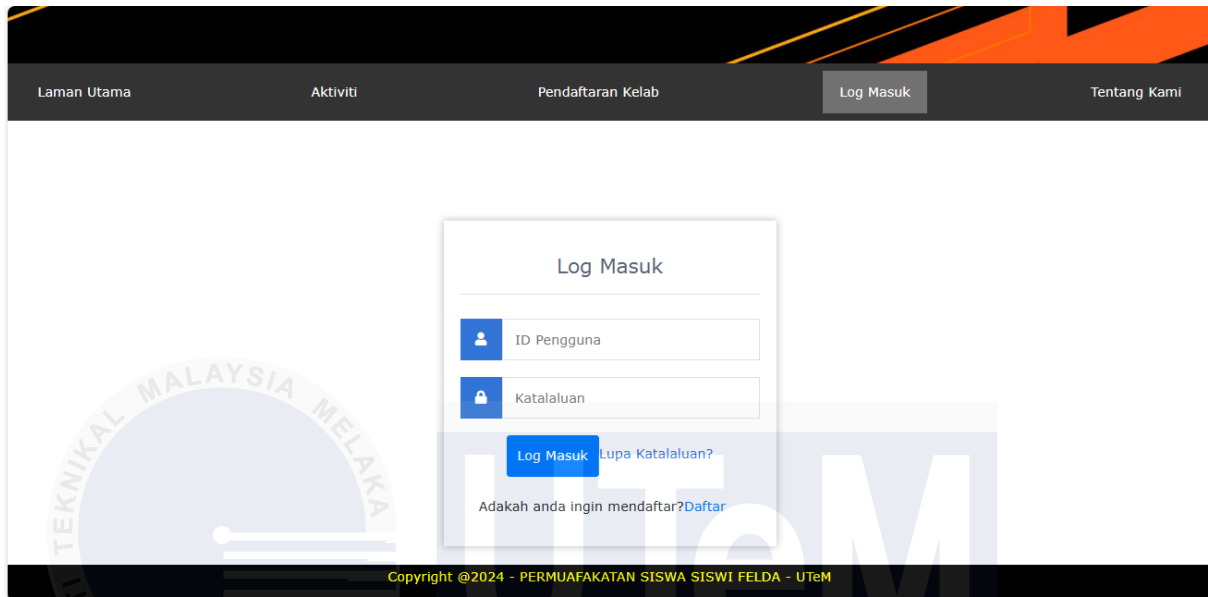
Figure 4.5 Login Page

If you login and no have data match with your input, it will appear message "Please enter correct username and password"
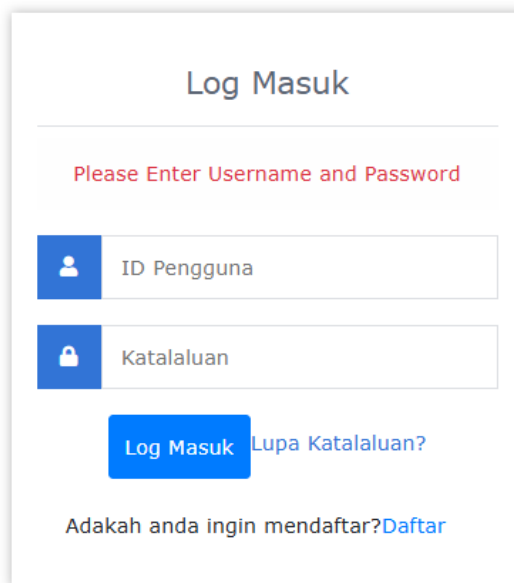
Figure 4.6 Unsuccessful Login

26

If data match with it will be successful login and direct to dashboard page.
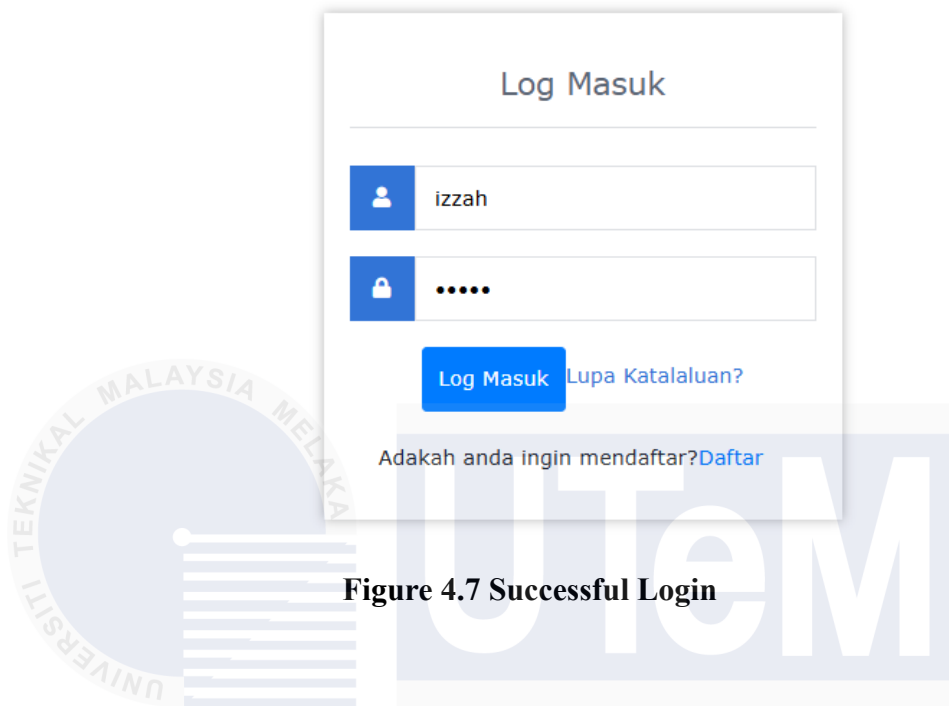
Figure 4.7 Successful Login

Figure 4.8 Dashboard Page after Success Login

vi. Forgot Password
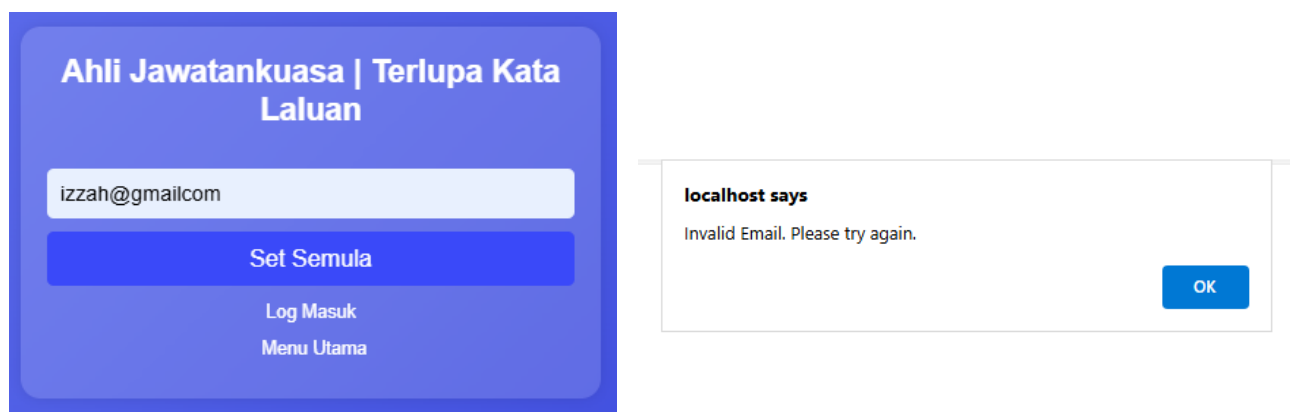
Admin and Committee can click button forgot password to reset password.

Figure 4.9 Forgot Password Page

vii. Wrong Input Forgot Password

If user enter the wrong password it will appear pop message "Invalid Email.Please try again".

Figure 4.10 Wrong Input Email Password and Pop up invalid Email Page

viii.   **Reset Password Page**
   If user clicks the "set semula" button on Forgot Password it will be direct to
   this page
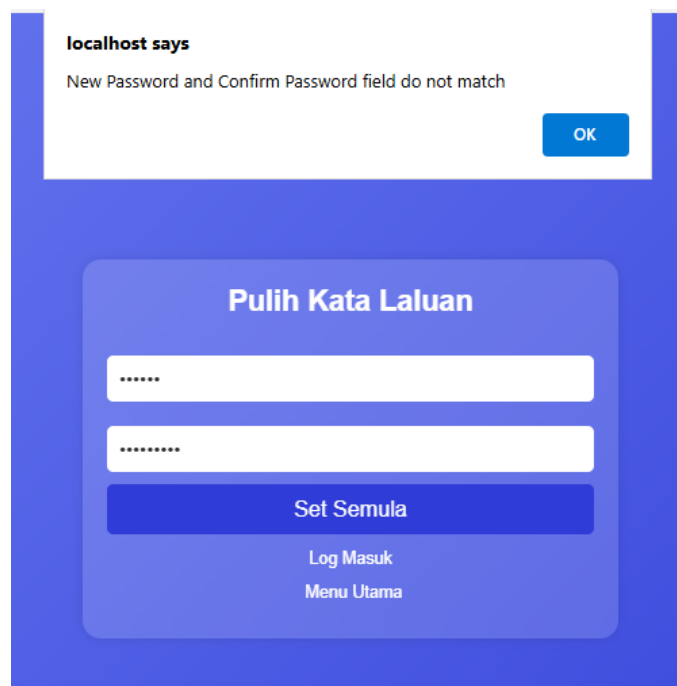
Figure 4.11 Reset Password Page

ix.   **Unsuccessful Reset Password Page**
   If user enter the wrong password or not match it will appear pop up message
   on this page.

Figure 4.12 Unsuccessful Reset Password Page

x. Successful Reset Password Page
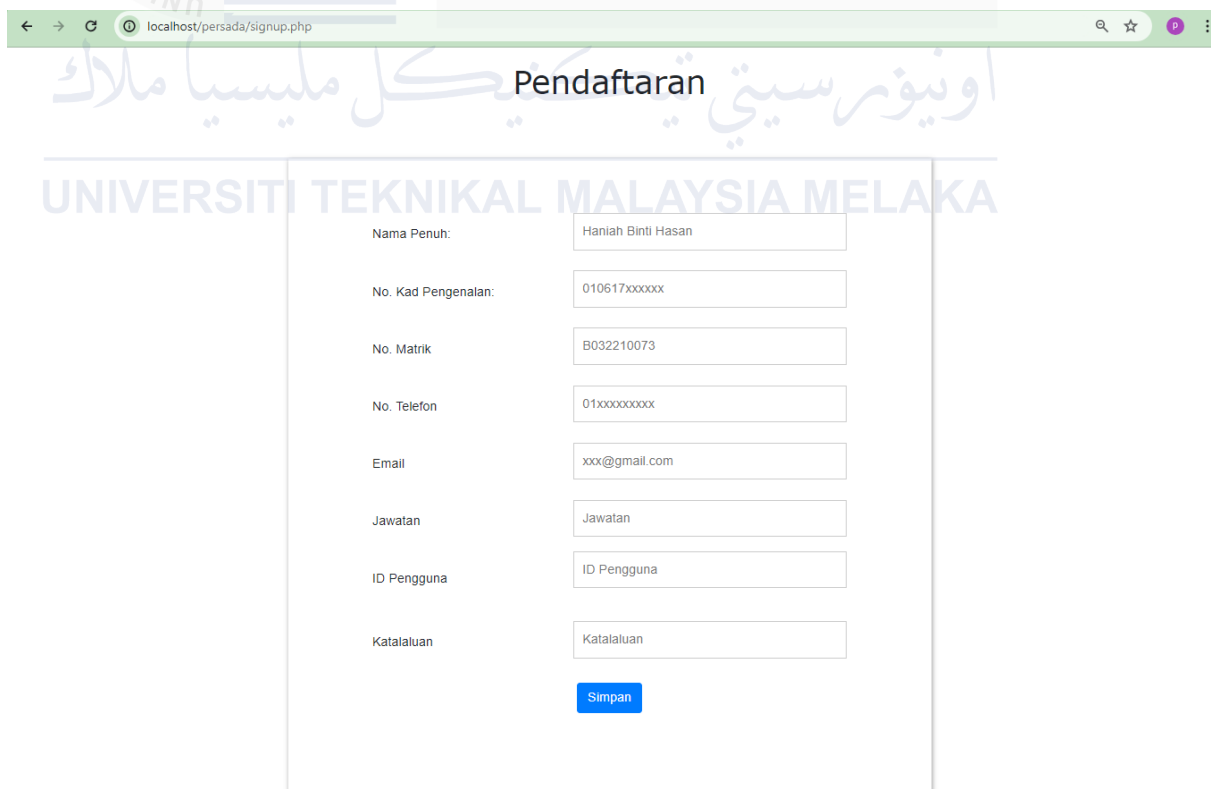
If user enter the correct format it will appear pop message "password successfully changed"
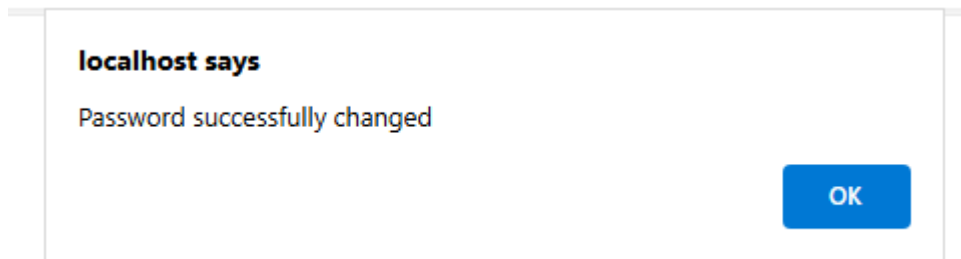
Figure 4.13 Successful Reset Password Page

xi. Signup Page

Admin and Committee register before login.

Figure 4.14 Signup

After successful signup, it will popup" Anda Telah Berjaya mendaftar ahli jawatankuasa PERSADA".
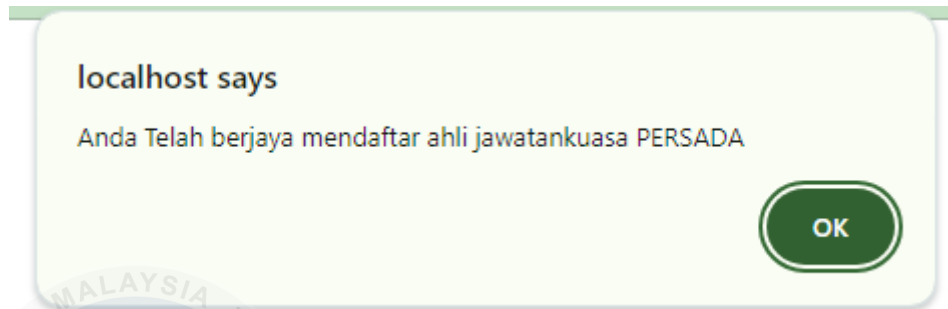
Figure 4.15 Successful Sign Up

If username same in database, it will popup" Sila Tukar ID Pengguna Anda"

Figure 4.16 Unsuccessful Sign Up

If Identity Card number same in database, it will popup "No Kad Pengenalan ini telah daftar"
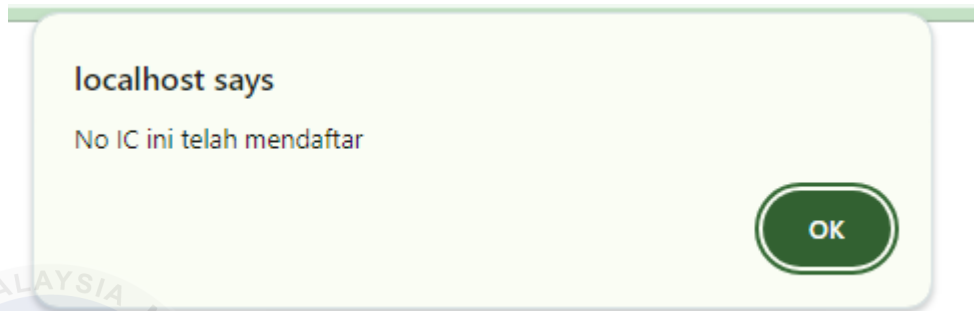
Figure 4.17 Unsuccessful Sign Up

If number matric same in database, it will popup "No Pendataran ini telah daftar".
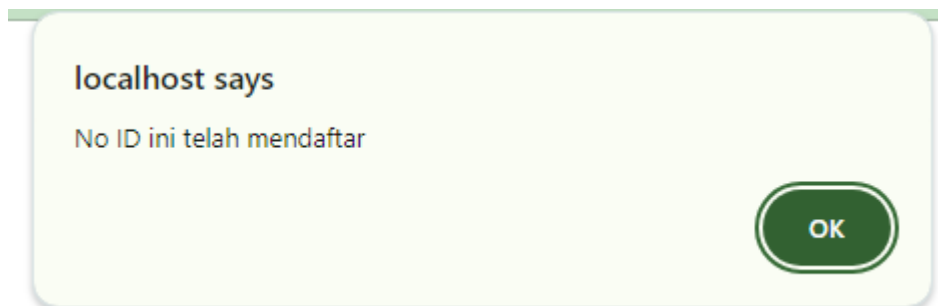
Figure 4.18 Unsuccessful Sign Up

xii.   About Us

Student can view the about us page such as introduction, purpose and objective about this club.
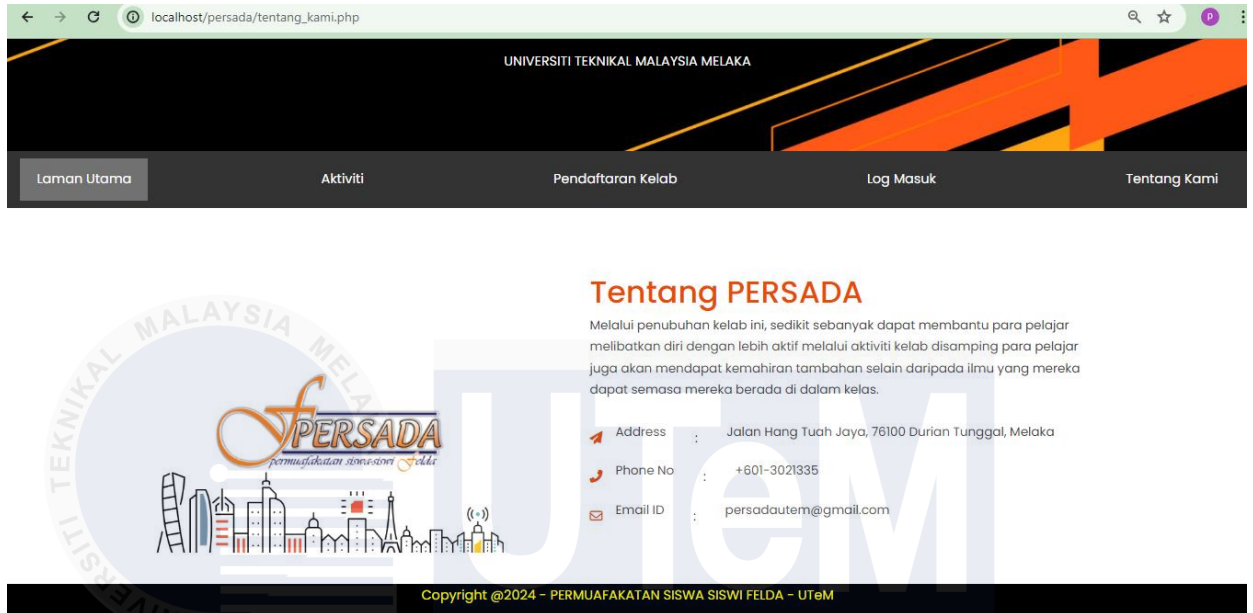
Figure 4.19 About Us

xiii. Dashboard

Admin/committee can view graph of participate student in program.

Figure 4.20 Dashboard

xiv. **Student list**

Admin and Committee and view and delete list of student that have register for this club.

Figure 4.21 Student List

xv. **Delete Data of Student**

If user click "Padam", it will popup" Adakah anda pasti ingin membuang data tersebut".

Figure 4.22 Delete Data

xvi. Program Page

Admin and Committee can view the list of program that has they organized. They also have a few buttons such as "Tambah Program", "Ubah" and "Padam".
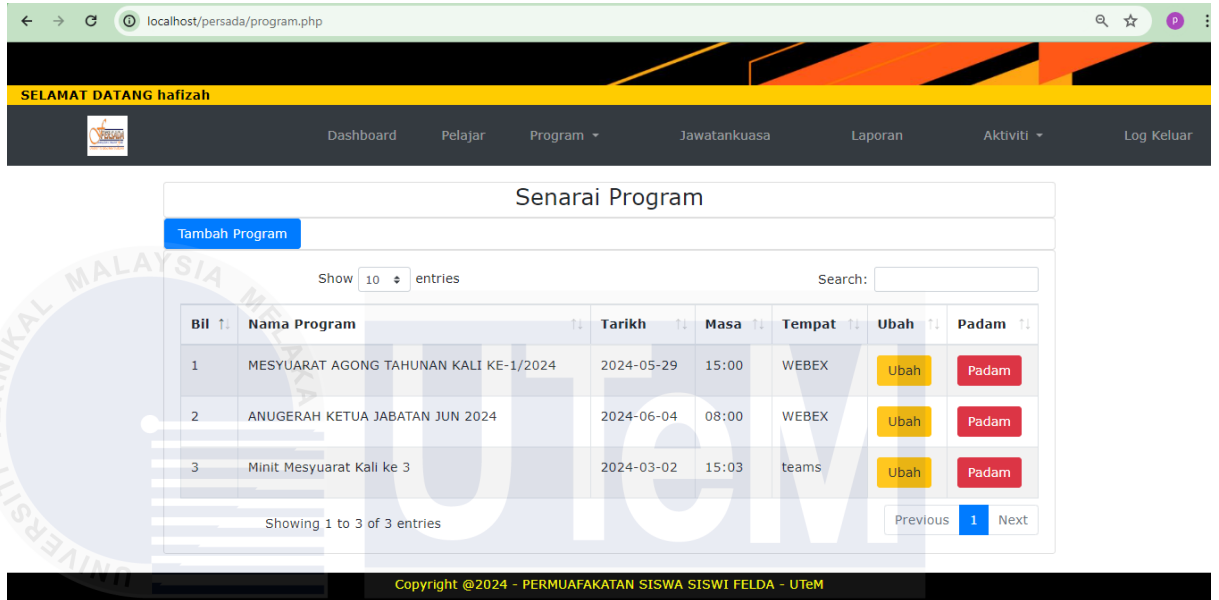
Figure 4.23 Program Page

xvii. Add program

This page will appear for add program after click the button "Tambah Program".
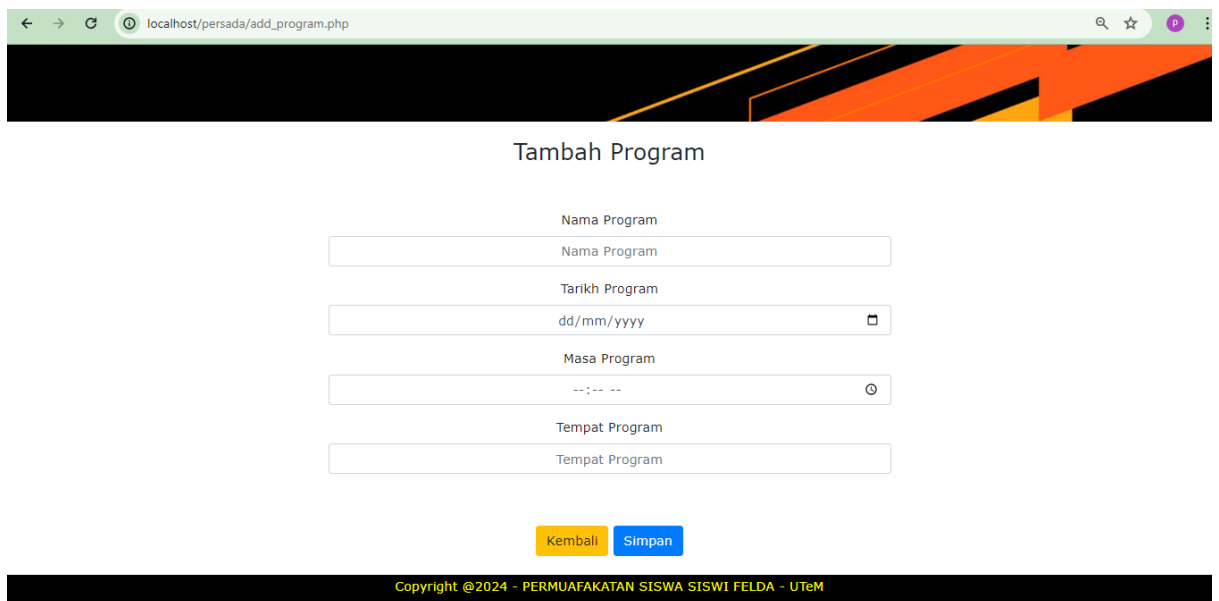
Figure 4.24 Add Program Page

xviii.   Edit program

This page will appear for edit the detail of program after click the button "Ubah".

Figure 4.25 Edit Program Page

If successful update data program, it will popup" Kemaskini Program berjaya"
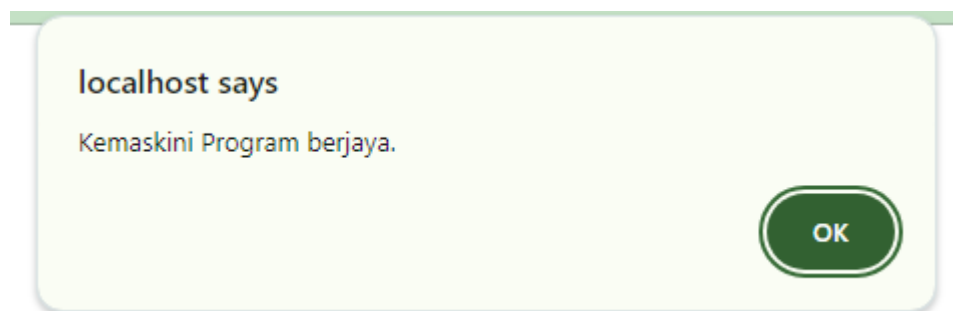
Figure 4.26 Successful Edit Program Page

xix. Attendance Page

This page will appear for make attendance because Committee or Admin will take attendance based on the program that student attend. They also have 2 button that is "Lihat Kehadiran" and "Kehadiran".
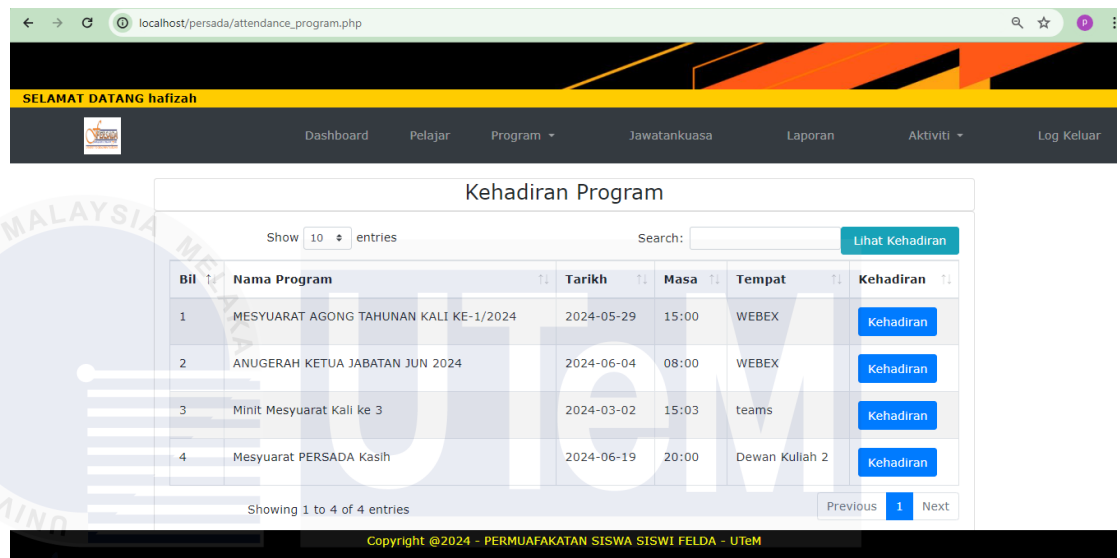
Figure 4.27 Attendance Program Page

This page will appear after click the button "Kehadiran". Admin or Committee and take the attendance by student class. They just click on the check box and click the button "Simpan".
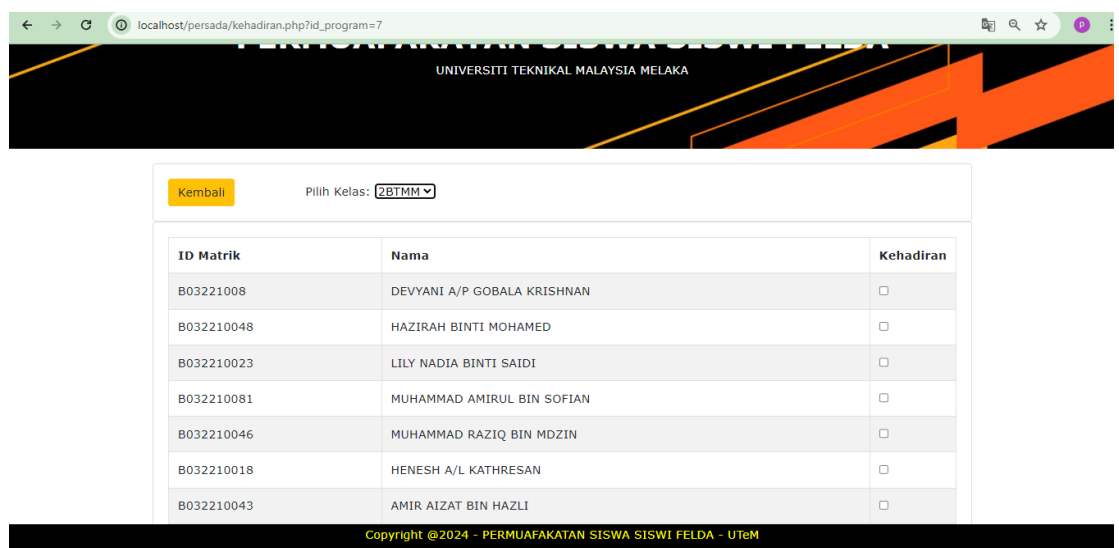
Figure 4.28 Attendance Page

If successful take attendance, it will popup" Kehadiran Berjaya diambil".

localhost says

Kehadiran berjaya diambil

OK

Figure 4.29 Successful take attendance

If attendance already take, it will popup" Kehadiran anda telah diambil sebelum ini".

localhost says

Kehadiran anda telah diambil sebelum ini.

OK
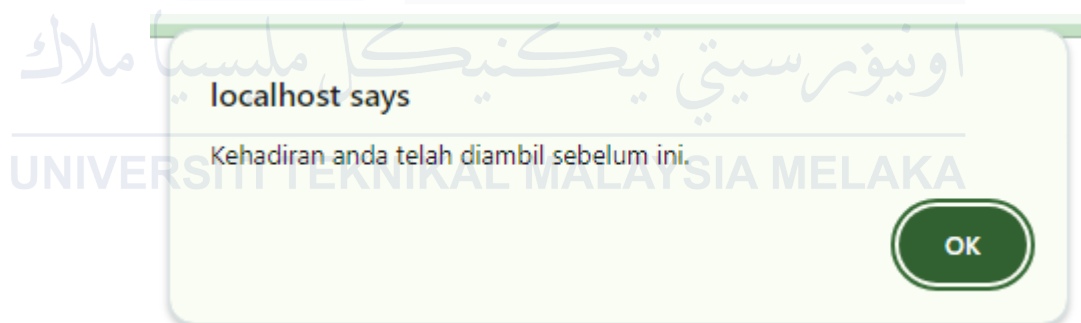
Figure 4.30 Unsuccessful take attendance

xx.   View and delete attendance
This page for view and delete the attendance
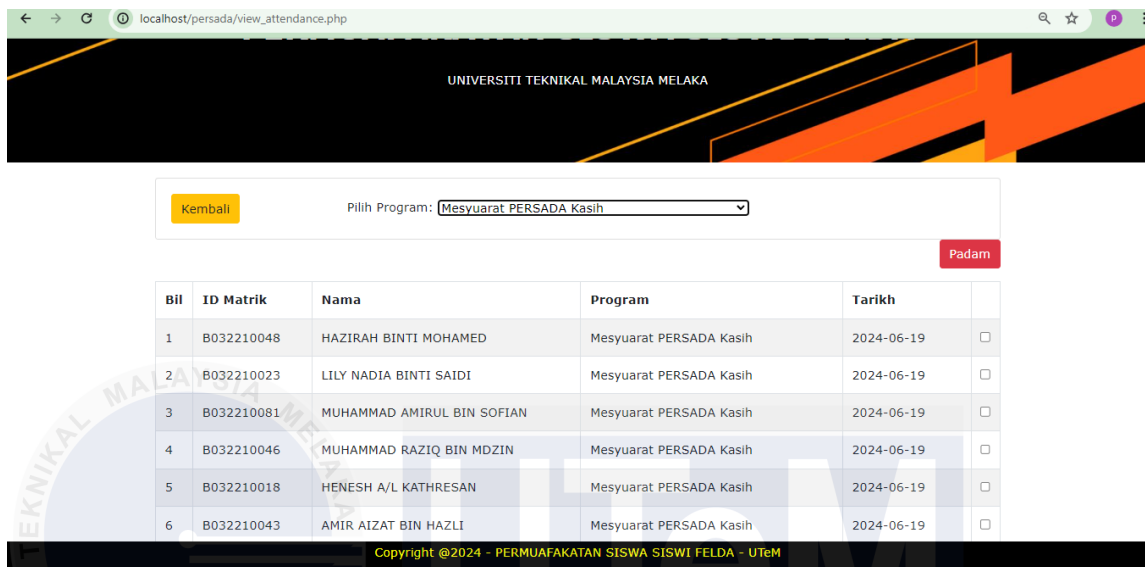
Figure 4.31 View and Delete Attendance

xxi.   Committee Page
Admin and Committee can view the list of committee and there also have a 2 button "Ubah" and "Padam.

Figure 4.32 Committee Page

40

xxii.   Edit committee

This page for edit the detail of Committee.

Figure 4.33 Edit Committee Page

If successful update committee, it will popup" Kemaskini maklumat anda berjaya".
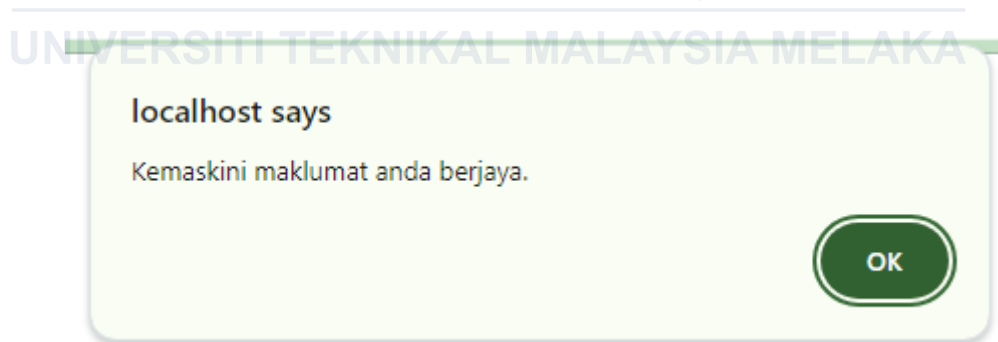
Figure 4.34 Successful Edit Program Committee

xxiii.   Confirmation Popup Committee Page

If click "Padam", it will popup" Adakah anda pasti ingin membuang data tersebut".
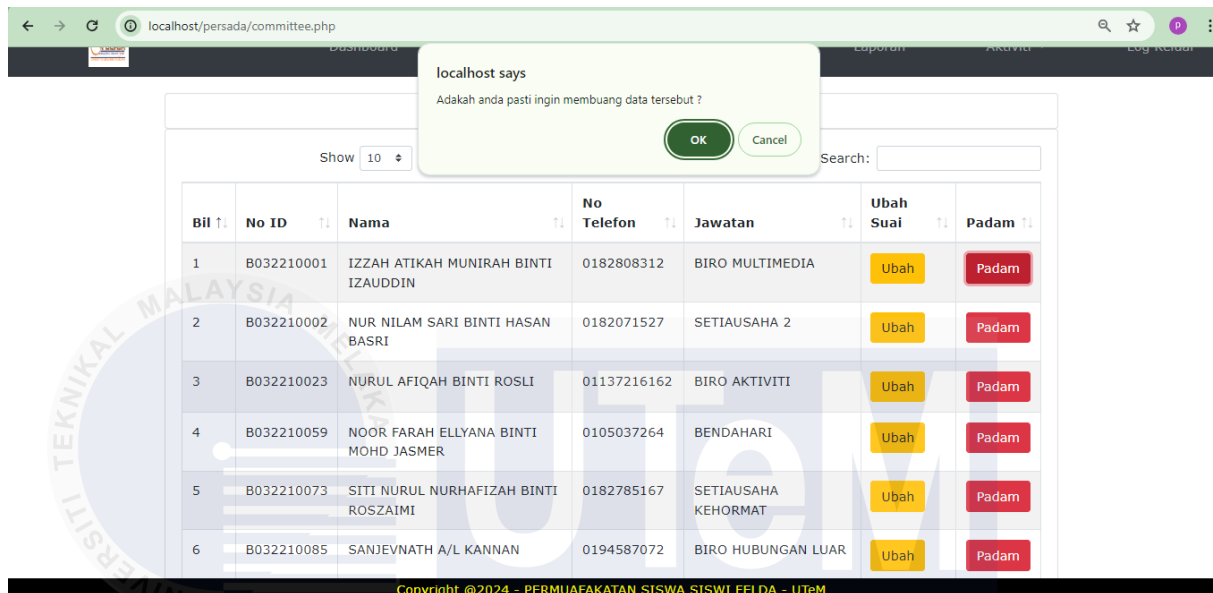
Figure 4.35 Confirmation Popup Committee

xxiv.   Report attendance page

Admin and Committee can view and print the report attendance by program.
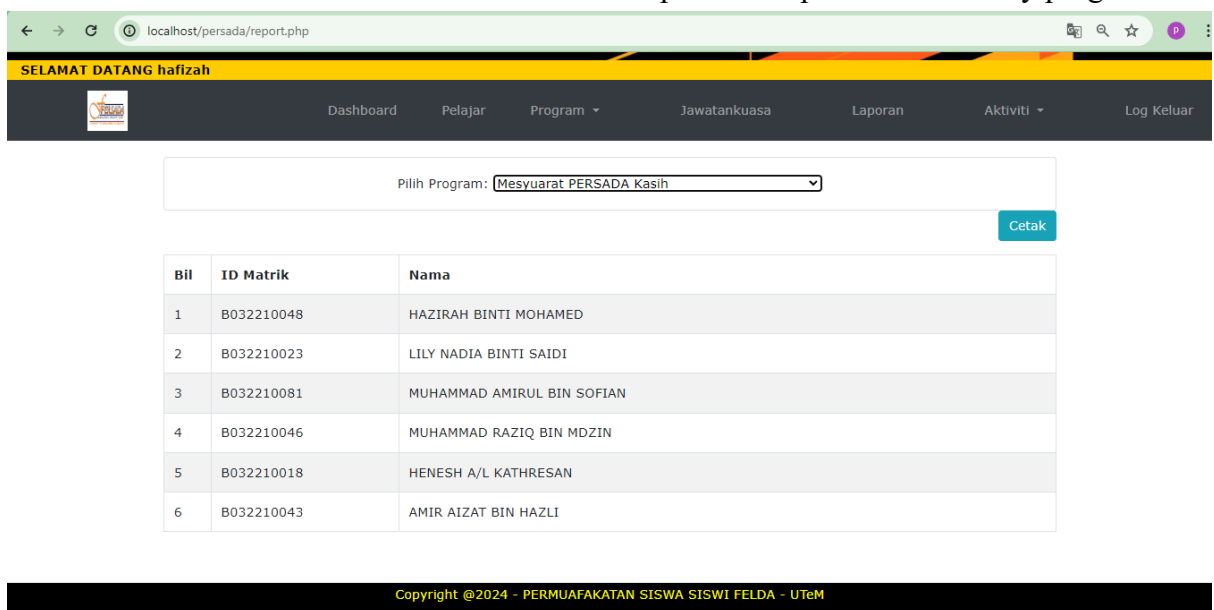
Figure 4.36 Report Attendance Page

This page appears after the user click the button "Cetak".
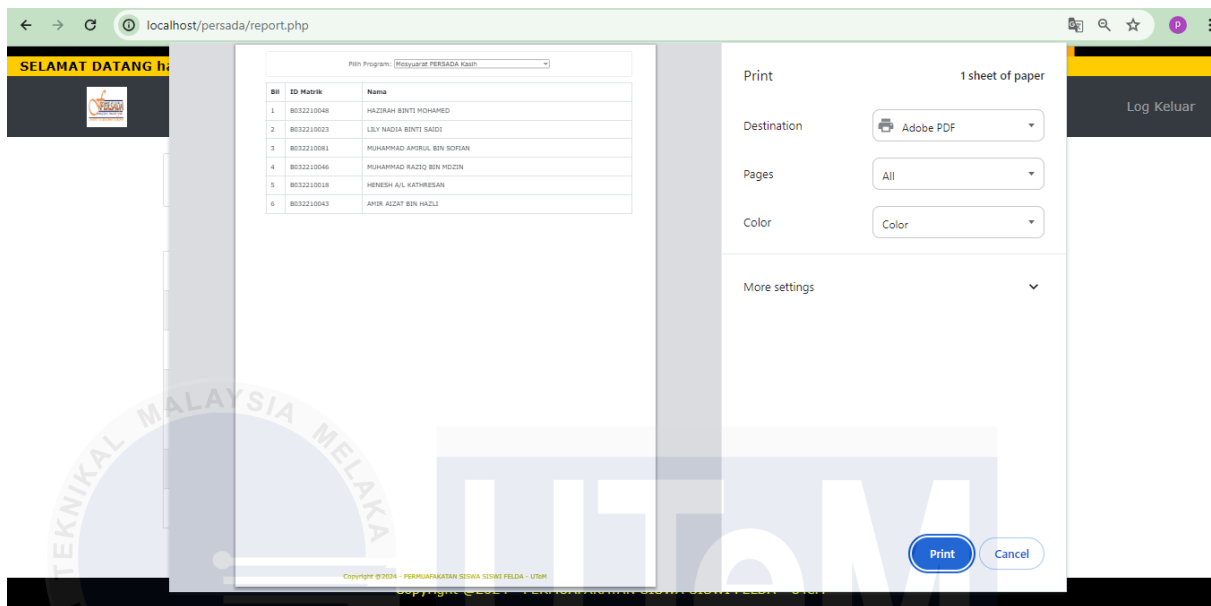
Figure 4.37 Print Page

xxv. **Upload page**

On this page Admin and Committee can add banner to display in main page.
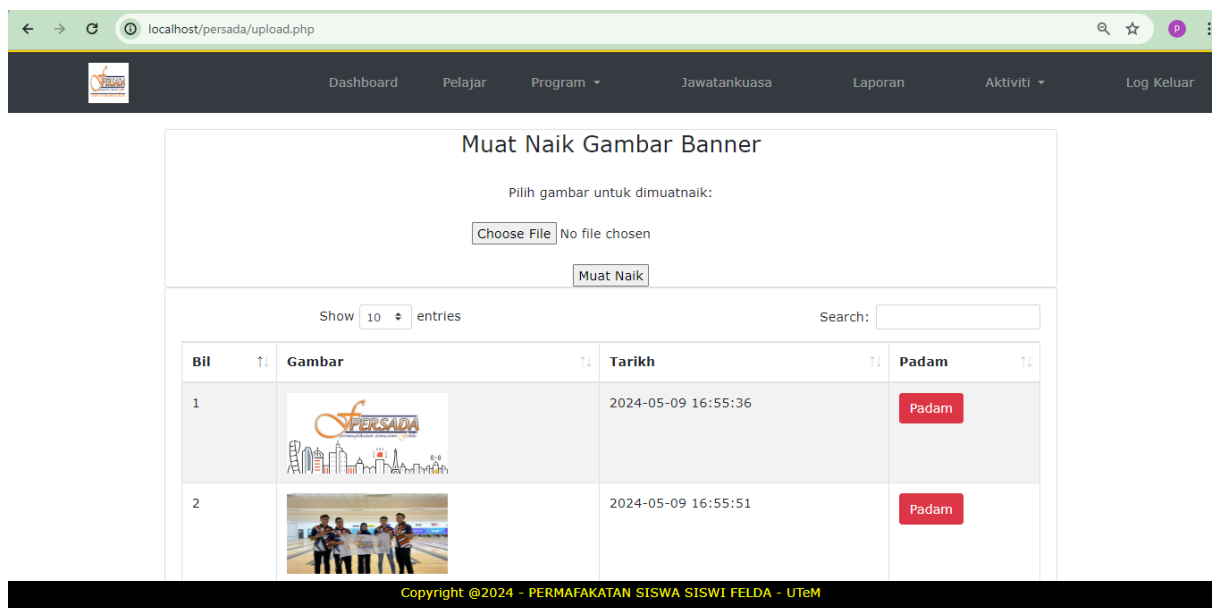
Figure 4.38 Upload Page

xxvi.   **Delete Upload Page**

If user click "Padam", it will popup" Adakah anda pasti ingi membuang data tersebut".

Figure 4.39 Delete Upload Page

xxvii.   **Banner**

This page Admin and Committee can add the document to display in main page.
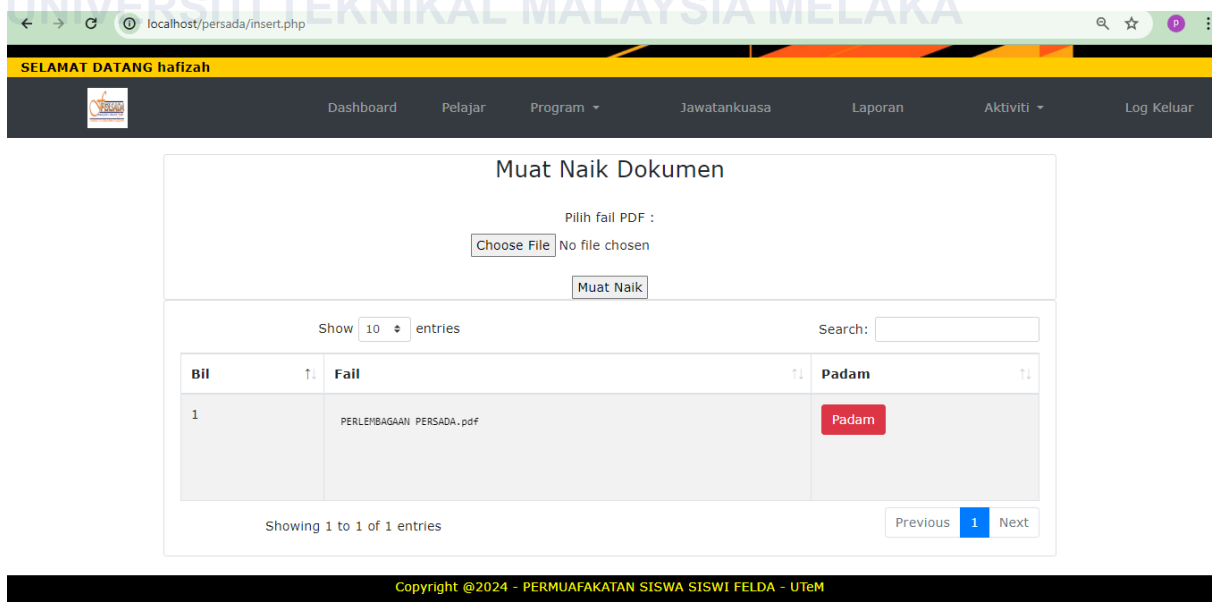
Figure 4.40 Banner Page

44

If user click "Padam", it will popup" Adakah anda pasti ingin membuang data tersebut".
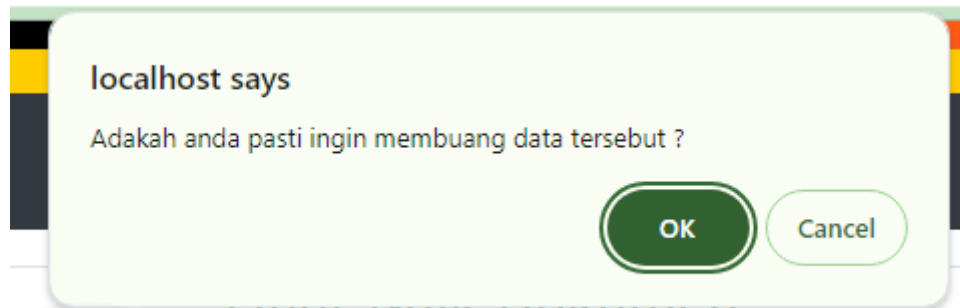
Figure 4.41Confirmation Popup File

xxviii. **Schedule Page**
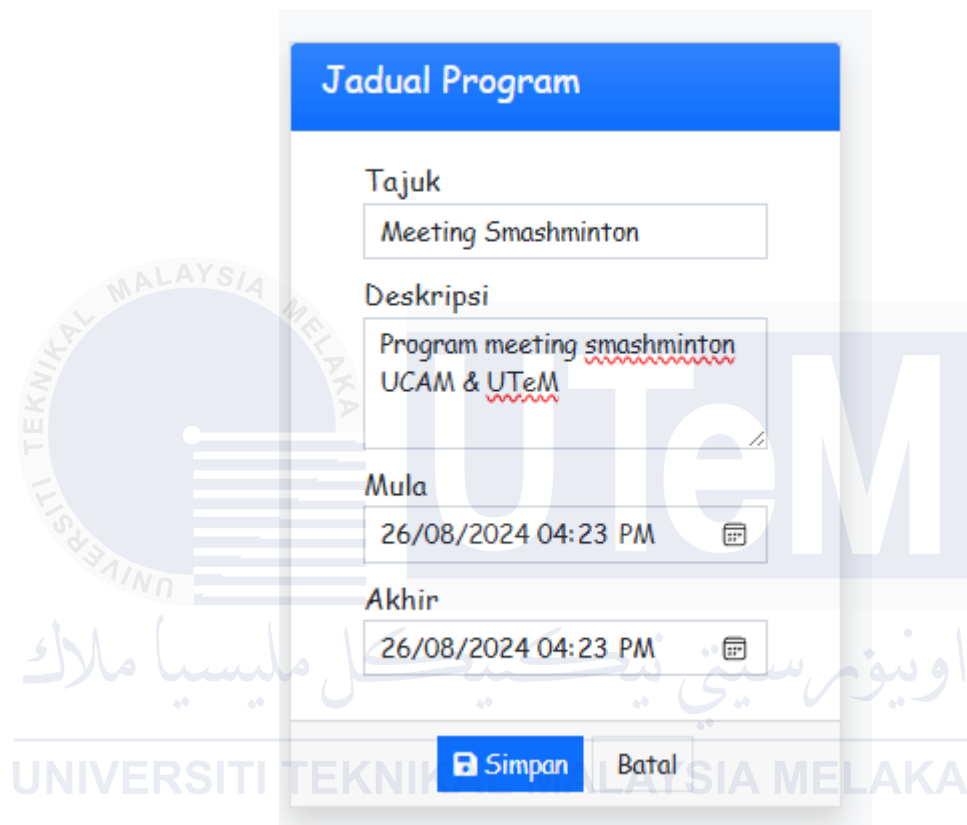
If user click meu bar "jadual" it will be direct to schedule page
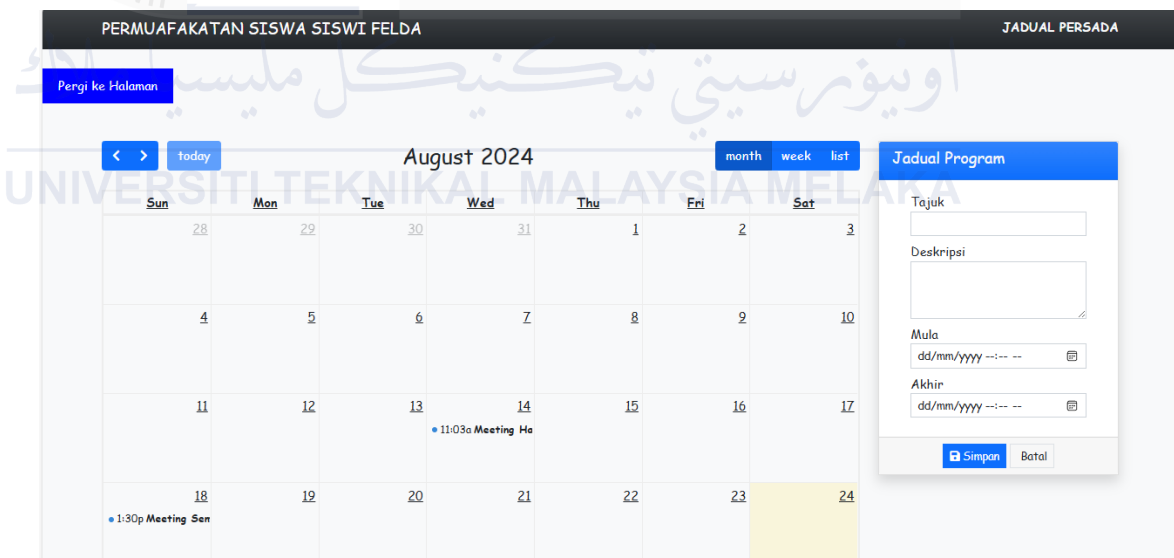
Figure 4.42 Schedule Page

xxix. Insert Schedule on "Jadual Program"

If user want to add schedule program, user must enter the field of "Jadual Program".

Figure 4.43 Insert Schedule

xxx. Successful add Schedule Program

If enter the correct it will appear pop up message " Jadual Program Berjaya disimpan".
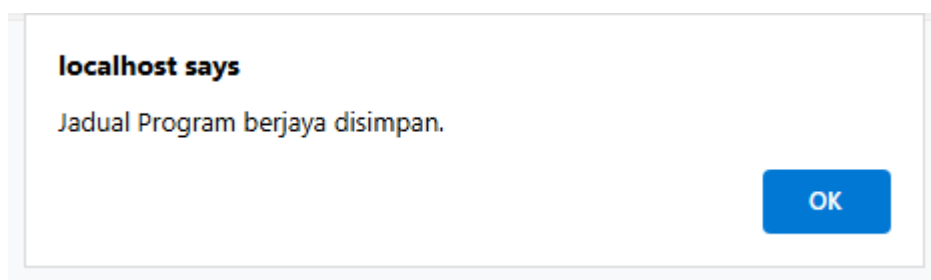
Figure 4.44 Successful add Schedule Program

xxxi.   Detail of Schedule Program

User can view detail of schedule program
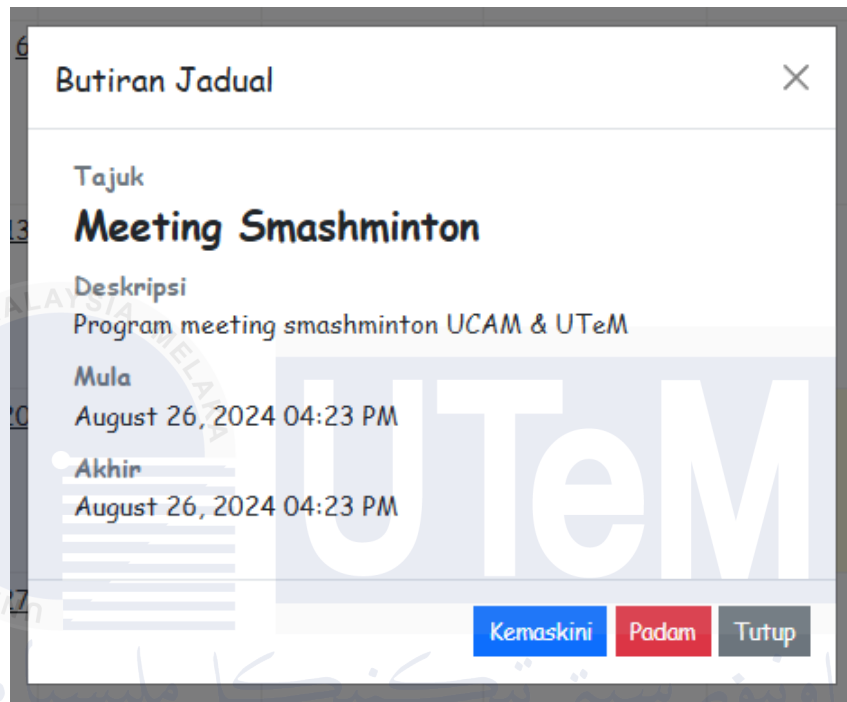
Figure 4.45 Detail of schedule program

xxxii.   List Schedule Program

User can view list of schedule program if click list button
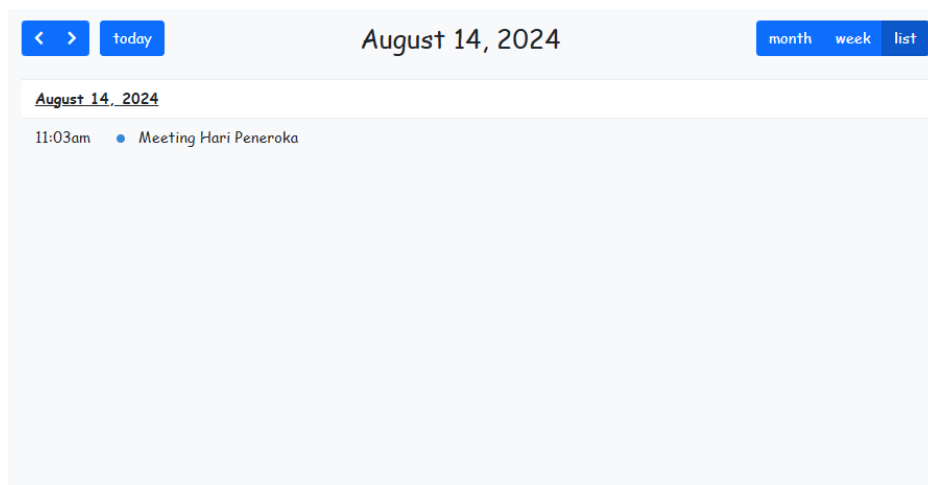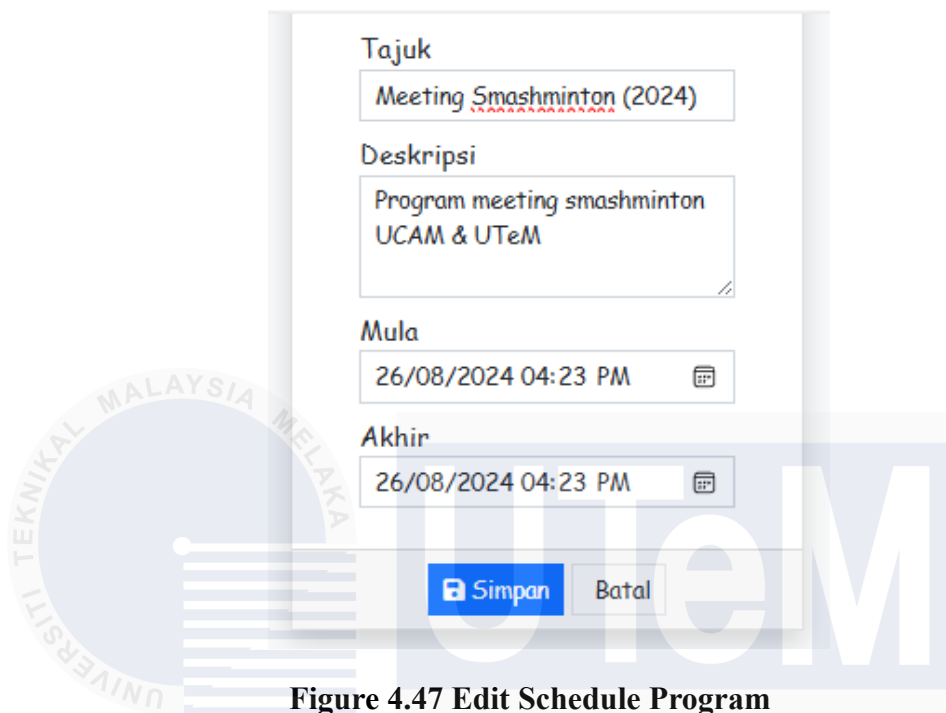
Figure 4.46 List Schedule Program

xxxiii. Edit Schedule Program
User can modify schedule program and click button "simpan".

Figure 4.47 Edit Schedule Program

xxxiv. Successful Schedule Page
If enter the correct it will appear pop up message " Jadual Program Berjaya disimpan".
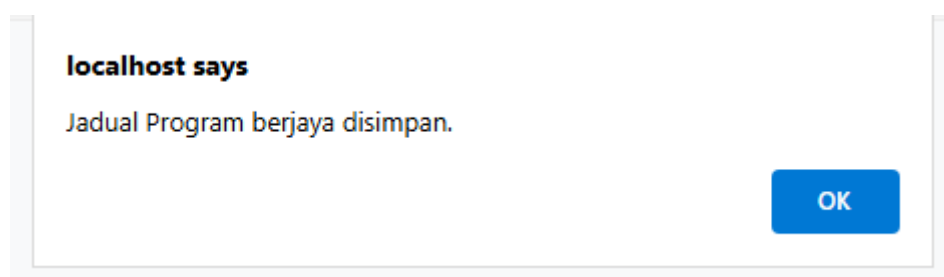
Figure 4.48 Successful Schedule Page

Successful Edit Schedule Page
Detail of program that schedule successful modifiy.
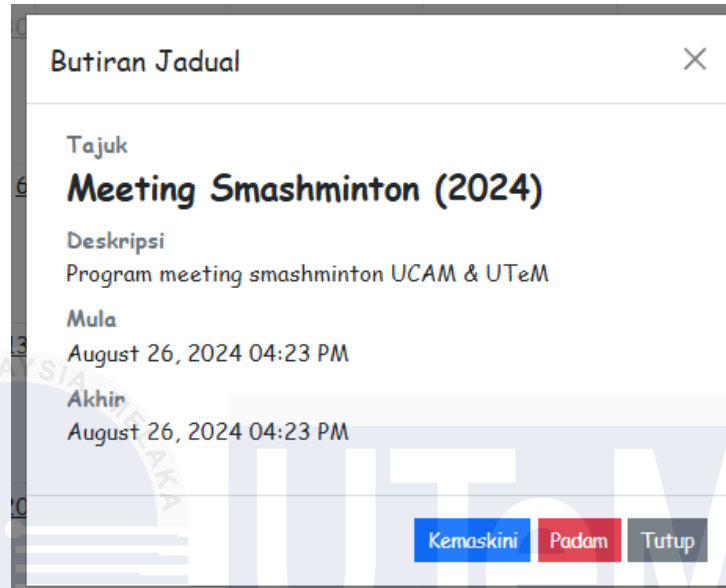
Figure 4.49 Successful Edit Schedule Page

xxxvi. **Delete Schedule Program**
If user want delete schedule user must click button "padam" and it will appear pop up message on that page
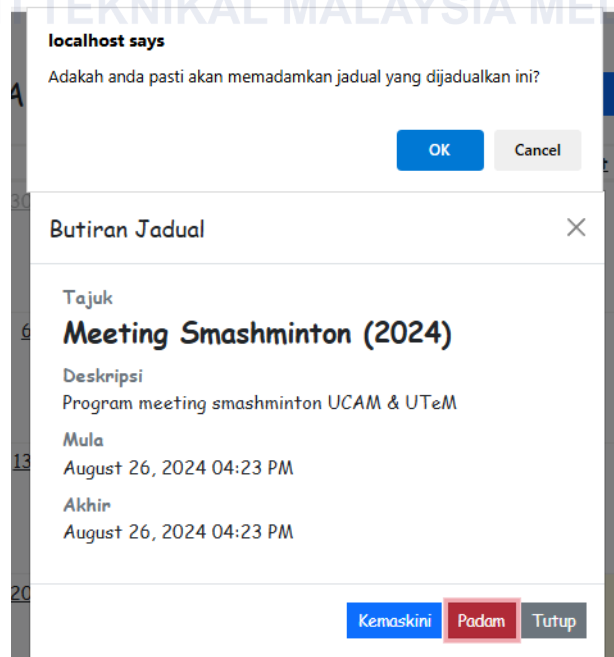
Figure 4.50 Delete Schedule Page

49

4.2.3 Database Design

The database design section will cover the conceptual and logical aspects of the system database. It will include the Entity Relationship Diagram, business rules, and data dictionary to thoroughly discuss the necessary conceptual and logical design elements for implementing the project.

4.2.3.1 Conceptual and Logical Database Design

a. Entity Relationship Diagram (ERD)
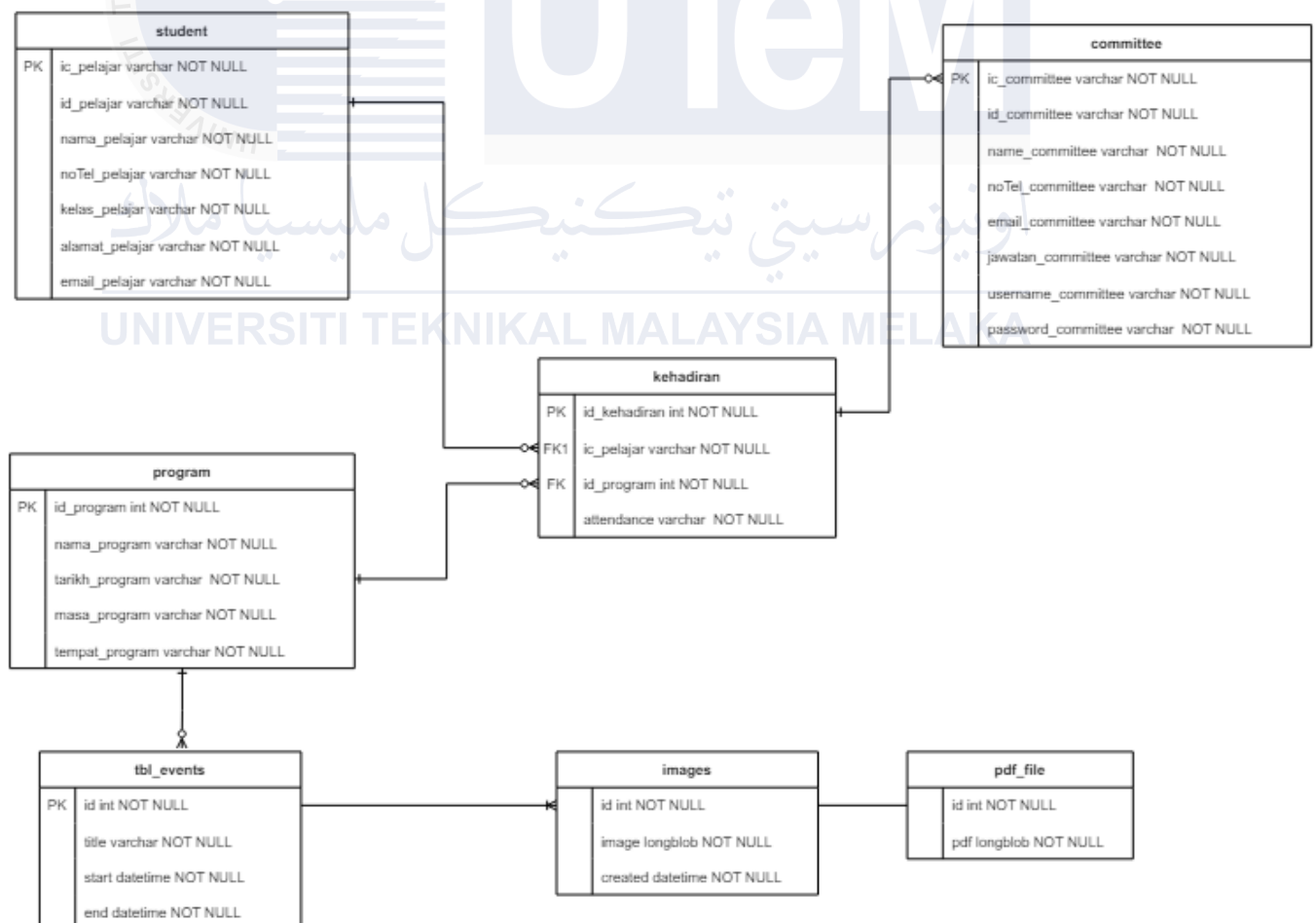
Figure 4.51 Entity Relationship Diagram (ERD)

b. Data Dictionary

Table 4.1: Data Dictionary of committee

Column	Type	Length	Constraint	Comments
ic_committee (Primary)	varchar	20	PRIMARY KEY	
id_committee	varchar	20	NOT NULL	
name_committee	varchar	200	NOT NULL	
noTel_committee	varchar	20	NOT NULL	
email_committee	varchar	200	NOT NULL	
jawatan_committee	varchar	200	NOT NULL	
username_committee	varchar	200	NOT NULL	
password_committee	varchar	200	NOT NULL	

Table 4.2 : Data Dictionary of images

Column	Type	Length	Constraint	Comments
id (Primary)	int	10	PRIMARY KEY	
image	longblob	No	NOT NULL	
created	datetime	No	NOT NULL	

Table 4.3 : Data Dictionary of kehadiran

Column	Type	Length	Constraint	Comments
id_kehadiran (Primary)	int	20	PRIMARY KEY	
ic_pelajar	varchar	20	NOT NULL	
id_program	int	10	NOT NULL	
attendance	varchar	15	NOT NULL	

Table 4.4 : Data Dictionary of pdf_file

Column	Type	Length	Constraint	Comments
id (Primary)	int	10	PRIMARY KEY	
pdf	longblob	No	NOT NULL	

Table 4.5 : Data Dictionary of program

Column	Type	Length	Constraint	Comments
id_program (Primary)	int	20	PRIMARY KEY	
nama_program	varchar	200	NOT NULL	
tarikh_program	varchar	50	NOT NULL	
masa_program	varchar	50	NOT NULL	
tempat_program	varchar	200	NOT NULL	

Table 4.6 : Data Dictionary of pelajar

Column	Type	Length	Constraint	Comments
ic_pelajar (Primary)	varchar	20	PRIMARY KEY	
id_pelajar	varchar	20	FOREIGN KEY	
nama_pelajar	varchar	200	NOT NULL	
noTel_pelajar	varchar	20	NOT NULL	
kelas_pelajar	varchar	50	NOT NULL	
fakulti	varchar	100	NOT NULL	
alamat_pelajar	varchar	200	NOT NULL	
email_pelajar	varchar	200	NOT NULL	

Table 4.7 : Data Dictionary of tbl_events

Column	Type	Length	Constraint	Comments
id (Primary)	int	20	PRIMARY KEY	
title	varchar	200	NOT NULL	
start	datetime	No	NOT NULL	
end	datetime	No	NOT NULL	

4.3 Detailed Design

4.3.1 Physical Database Design

Create table : committee

CREATE TABLE `committee` (

  `ic_committee` varchar(20) NOT NULL,

  `id_committee` varchar(20) NOT NULL,

  `name_committee` varchar(200) NOT NULL,

  `noTel_committee` varchar(20) NOT NULL,

  `email_committee` varchar(200) NOT NULL,

  `jawatan_committee` varchar(200) NOT NULL,

  `username_committee` varchar(200) NOT NULL,

  `password_committee` varchar(200) NOT NULL

) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

Create table : student

CREATE TABLE `student` (

  `ic_pelajar` varchar(20) NOT NULL,

  `id_pelajar` varchar(20) NOT NULL,

  `nama_pelajar` varchar(200) NOT NULL,

  `noTel_pelajar` varchar(20) NOT NULL,

  `kelas_pelajar` varchar(5) NOT NULL,

  `alamat_pelajar` varchar(200) NOT NULL,

  `email_pelajar` varchar(200) NOT NULL

) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

Create table : program

```
CREATE TABLE `program` (
  `id_program` int(20) NOT NULL,
  `nama_program` varchar(200) NOT NULL,
  `tarikh_program` varchar(50) NOT NULL,
  `masa_program` varchar(50) NOT NULL,
  `tempat_program` varchar(200) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

Create table :images

```
CREATE TABLE `images` (
  `id` int(10) NOT NULL,
  `image` longblob NOT NULL,
  `created` datetime NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

Create table :kehadiran

```
CREATE TABLE `kehadiran` (
  `id_kehadiran` int(20) NOT NULL,
  `ic_pelajar` varchar(20) NOT NULL,
  `id_program` int(10) NOT NULL,
  `attendance` varchar(15) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

Create table :pdf_file

```
CREATE TABLE `pdf_file` (
  `id` int(10) NOT NULL,
  `pdf` longblob NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

Create table : tbl_events

CREATE TABLE `tbl_events` (

  `id` int(20) NOT NULL,

  `title` varchar(200) NOT NULL,

  `start` datetime NOT NULL,

  `end` datetime NOT NULL

) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

4.4   Conclusion

The PERSADA Club Management System is a robust solution designed to enhance the efficiency of club operations. It features a comprehensive user interface that ensures an intuitive and seamless experience for all users, regardless of their role within the club. The system's architecture is modular, dividing functionalities into distinct, manageable modules such as member management, event scheduling, and financial tracking. This modularity not only enhances flexibility and scalability but also ensures that each module can be independently developed and maintained. Additionally, the system supports multiple platforms, including web and mobile, providing users with the convenience of accessing the system from various devices. Security is a key focus, with multiple layers of protection, including authentication, authorization, and data encryption, implemented to safeguard user data and maintain system integrity.

The PERSADA Club Management System also includes a robust database implementation using MySQL, which ensures reliable and efficient data storage and retrieval. The database schema is well-structured, featuring several table entities to represent different aspects of club data such as members, events, payments, and communications. These entities are interconnected through well-defined relationships, enabling comprehensive data integration and effective querying capabilities. This solid database foundation supports the system's overall functionality, ensuring that all data is accurately recorded, easily accessible, and securely managed.

CHAPTER 5: IMPLEMENTATION

5.1   Introduction

This chapter will describe the implementation phase of PERSADA Club Management System that consists of environment and configuration set up where the system is constructed and programmed to fulfil the functional and non-functional requirements as outline during design phase. The architecture model that is utilised to create the PERSADA Club Management System will be shown. There will be a display of the server and database configurations, among other primary functions. Additionally, the system version and implementation status of the project are included in this chapter to track the assignments and actions throughout this stage, emphasising the security aspects that the entire system uses.

5.2   Software Development Environment setup

The Software Development Environment Setup is the arrangement of hardware, software, and resources to facilitate the effective development, testing, and upkeep of software applications. It includes elements such as IDEs, version control systems, and collaborative tools, testing frameworks, and programming languages. This arrangement promotes efficient teamwork, organised development, and quality assurance all of which are essential for software development that is successful. Then, the development environment adapts the Client-Server architecture model. It consists of the domain's server for data storage, and the clients are from PC or laptops that are connected to the Internet. The client side of architecture will be able to display the User Interface (UI) to the user and any action will trigger to send request to the server. The server will wait for requests from client, process the request and send response back to the client.
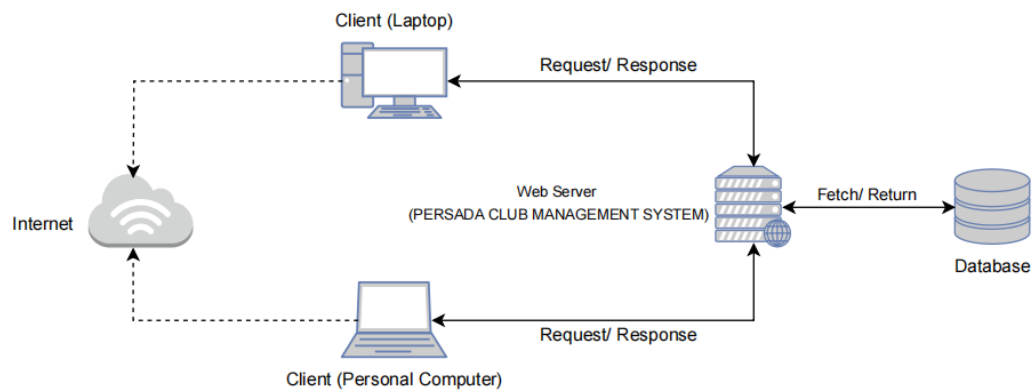
Figure 5.1 Client-Server Architecture Model

The environment setup, the programming language, tools and software mentioned in table 5.1 below will be used to deploy PERSADA Club Management System

.

Table 5.1: System Development Environment

Item	Software and Version
Programming Language	PHP 7.4.16
Scripting/ Markup Language	Javascript, HTML, CSS
Library/ Framework	JQuery
Web Server Package	Xampp Apache 7.4.16
Database	MySQL
Integrated Development Environment (IDE)	Dreamweaver
Operating System	Vivo Book ASUS Laptop X505ZA X505ZA
Internet Connection	Wireless Fidelity (Wi-Fi)

The XAMPP Control Panel, showing that both the Apache web server and MySQL database server are running. For the PERSADA Club Management System, the database is configured to use the default MySQL port 3306 and is hosted locally at the address 127.0.0.1. This setup ensures that the system can interact with the database for storing and retrieving data, such as student registrations and club memberships, in a local development environment.
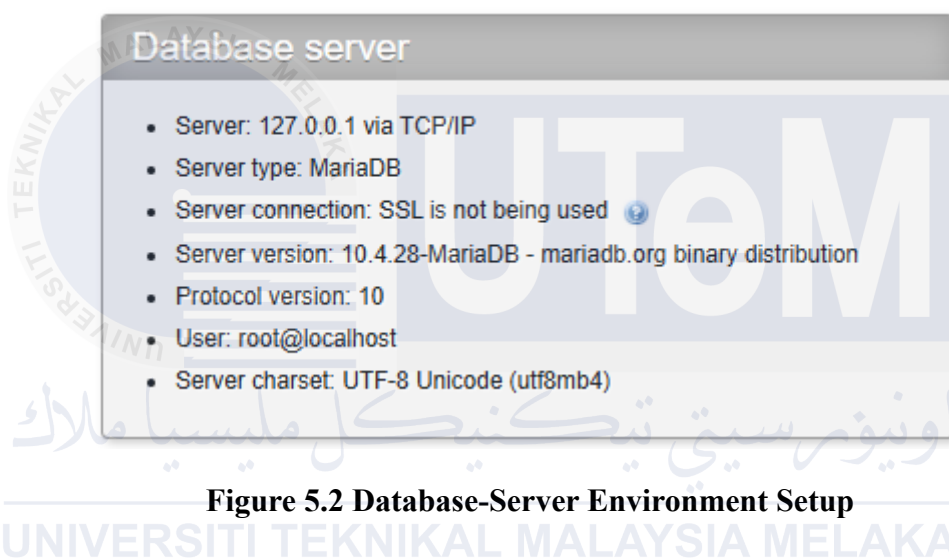
Figure 5.2 Database-Server Environment Setup
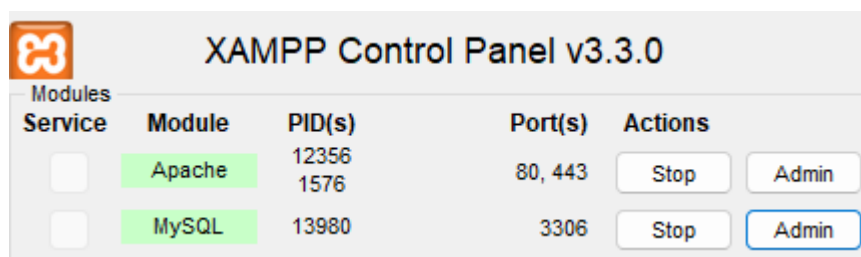
Figure 5.3 Port-Server Environment Setup

5.3   Software Configuration Management

5.3.1   Configuration environment setup

In the realm of Software Configuration Management (SCM), setting up the environment for the PERSADA Club Management System involves creating a meticulously regulated and synchronized framework for the development, testing, and deployment processes. This complex configuration integrates various essential components, including the implementation of a version control system for managing code, establishing distinct development environments tailored for both individual and collaborative work, and automating builds along with continuous integration.

Additionally, it involves designing a well-organized deployment pipeline, utilizing configuration management tools, managing databases effectively, and developing a robust data recovery strategy. Comprehensive documentation and a systematic change management process are also crucial aspects of this setup. Collectively, this configuration ensures precision, consistency, and efficiency throughout the software development lifecycle, fostering better collaboration, reducing errors, and accelerating the delivery of high-quality software.

5.3.2   Version Control Procedure

The Version Control Procedure for the PERSADA Club Management System systematically manages and tracks changes in the software codebase, establishing an organized and accessible structure for different code versions. This process includes selecting a suitable version control system, setting up repositories, creating branching strategies, committing and reviewing code changes, merging and testing for integration issues, tagging versions, documenting commits, resolving conflicts, and maintaining backups. By adhering to these steps, the system ensures efficient codebase management, promotes collaboration, minimizes errors, and maintains a detailed record of modifications, leading to smooth operations and high-quality software delivery.

5.4 Implementation Status

Table 5.4 shows the implementation status for each module of the project:

Table 5.4 Implementation status of modules

Module/Function	Description	Duration to complete (week)
Interface design	Design and develop the user interface system	3
Database design	Design and develop the database architecture	1
Admin / Committee module	Develop the admin module (website)	7
Student module	Develop the student module (website)	5

5.5 Conclusion

In conclusion, effective version control and configuration management are essential for preserving software functionality during testing and the development of new features. By carefully managing the configuration environment, developers can avoid unexpected errors when deploying software across different devices and similar contexts. The next chapter will delve into system testing, covering key aspects such as test planning, test strategy, test design, and a thorough analysis of results.

CHAPTER 6 TESTING

6.1 Introduction

Software testing is essential for ensuring the quality and dependability of software products by validating their features and development. This chapter will focus on system testing for the project, emphasizing the involvement of targeted users who will assess their roles within the system. The testing phase is structured into six key with each unit testing, integration testing, functional testing, system testing, acceptance testing, and regression testing. A comprehensive evaluation of the system will be achieved using both white-box and black-box testing methodologies.

6.2 Test Plan

In this section, the testing environment and the schedule will be documented. The ideal approach, scope, required resources (including personnel, software, and hardware), testing timeline, and deliverables are comprehensively outlined by the test plan, a technical document. A comprehensive overview of the system's procedures and functions is provided, and the methodology for testing each aspect to assess system functionality, identify potential faults, and establish operational limitations will also be highlighted.

6.2.1 Test Organization

The test organization for the PERSADA Club Management System is comprised of Siti Nurul Nurhafizah Binti Roszaimi the software developer, and Dr. Ummi Rabaah Binti Hashim, the project supervisor. Over the testing process to ensure that the system functions correctly and meets the project's requirements. Their role is to guide and coordinate the testing efforts, ensuring that all aspects of the system are thoroughly evaluated by the appropriate users.

To achieve comprehensive testing, the system's modules are divided according to the roles of the users who interact with them. Administrators and committee members are responsible for testing several critical modules. These include student management, where they manage student activities, which involves adding, editing, or deleting programs. Then, attendance tracking, where they add or remove attendance records. After that, they can edit or delete committee information and report generation, which allows them to print and review reports on various activities and attendance.

On the other hand, will focus on testing modules that directly relate to their experience within the club. This includes the club registration module, where they can register for new member of clubs, and the program viewing module, which allows them to browse through available programs. This role-based testing approach ensures that each component of the PERSADA Club Management System is thoroughly tested by the users most familiar with those functions, leading to a more reliable and user-friendly system.

6.2.2 Test Environment

A localhost test environment is a web development setup hosted on your personal computer. It typically includes a web server like Apache, a database system such as MySQL, and scripting languages like PHP, Python, or JavaScript. This environment allows developers to build, test, and debug web applications or websites on their own machines before moving them to live production servers. In this setup, users interact with the applications via a web browser, with the web server managing files and processing requests, while the database handles data storage and retrieval. This controlled and secure local environment helps developers minimize potential issues before deployment to a live environment.

6.2.3 Test Schedule

There are tasks required in the testing phase, each with a specific duration and timeline. The table below outlines the updated schedule for these tasks:

Table 6.2.3 Test Schedule

Testing Task	Description	Duration (days)	Start Date	End Date
Unit Testing	Testing the smallest, individual parts of the system.	5	30/4/2024	4/4/2024
Integration Testing	Testing the integration of multiple modules.	5	7/4/2024	11/4/2024

Functional Testing	Testing based on pre-designed test cases.	10	14/5/2024	25/5/2024
Acceptance Testing	Testing to ensure the system meets specified requirements.	5	28/6/2024	1/6/2024
Regression Testing	Testing updated modules or features to ensure system stability.	5	4/7/2024	8/7/2024

6.3 Test Strategy

White-box testing is a technique used to assess software by analyzing its internal functions. This approach is typically carried out by software developers who have an in-depth understanding of the system's inner workings. It is used during various testing phases, such as unit testing, integration testing, and regression testing, to evaluate the system's performance.

In contrast, black-box testing focuses on evaluating software based solely on its external behaviors, without requiring knowledge of its internal structure. This method is more user-friendly and accessible to a wider range of testers. Black-box testing is applied in phases like unit testing, functional testing, system testing, and acceptance testing, allowing for the assessment of the system's functionality without examining the underlying code.

6.3.1 Classes of tests

The project employs two main types of test strategy with it Black-box testing and White-box testing. The specifics of each type of test are outlined in Tables 6.2 and 6.3, respectively. Black-box testing focuses on assessing the system's functionality without considering the internal code structure, while White-box testing involves a thorough examination of the internal workings and code of the system.

- **White-box Testing Class**

Table 6.3.1 Classes of test (White box)

White-box Testing	Description
Performance	The website should load and display within 10 seconds after a button is clicked.
Internet Connectivity	The web application should be accessible only with an internet connection.
Data Integrity	All data displayed in the web application must match the data in the MySQL database.

- **Black-box Testing Class**

Table 6.3.1.2 Classes of test (Black box)

Black-box Testing	Description
Interface	The website's user interface should be responsive across browsers like Microsoft and Google Chrome.
Regression	After new features are implemented, all related functions should be tested to ensure they work without errors.
Output Correctness	Input test data should produce the expected output, ensuring the output data is accurate and meets expectations.

6.4 Test Design

6.4.1 Test Description

This section details the test case identification, description, and the expected result. The test cases are based on each of the modules within the system.

- Test Cases for Admin

Table 6.4 Admin user test cases

Module	Test Case ID	Description	Expected Result
Login	ATC_01	User is required to fill in the username and password to access the system	- The system verifies the username and password against the database. - If the credentials match, the user is redirected to the Dashboard page.
Forgot Password	ATC_02	Verify that the " Lupa Kata Laluan " link is available on the login page	The "Lupa Kata Laluan" link should be visible and click able on the login page.
Verify redirect to Password Reset Page	ATC_03	Verify that clicking the "Lupa Kata Laluan" link redirects to the password reset page	The user should be redirected to a password reset page where they can initiate the process.
Verify Email	ATC_04	Verify that the system requires a valid email address	The system should prompt the user to enter a valid email address.

Confirmation Reset Password	ATC_04	Verify that the password reset process is completed successfully with a valid new password	After entering a valid new password, the system should update the user's password and confirm the reset.
Student List	ATC_05	User clicks the 'log masuk' button on the login page	- User must be logged in as an admin to view the student list. - Upon successful login, the user is redirected to the student list page. - The student list page displays a list of students registered with PERSADA clubs.
Program List	ATC_06	User needs to dropdown on the program navigation bar and click 'senarai program'	- The program list page displays all programs organized by PERSADA clubs.
Add Program	ATC_07	User needs to click the 'tambah program' button on the program list page	- User must be registered in the system to add a program.

68

			- Upon clicking the button, the user is redirected to the add program page.
Update Program Detail	ATC_08	User needs to click the 'ubah program' button on the program list	- User must be registered in the system to update the program. - Upon clicking the button, the user is redirected to the update program page. - The page displays the details of the selected program for updating.
Delete Program	ATC_09	User needs to click the 'padam program' button on the program list	- User must be registered in the system to delete the program. - The system shows an alert message before deletion. - After confirmation, the program is deleted from the list.
Attendance Program	ATC_010	User needs to dropdown on the program navigation	- User must be logged in as an admin to access the attendance program.

		bar and click 'kehadiran'	- Upon successful login, the user is redirected to the attendance program page.
View Attendance Program	ATC_0111	User needs to click the 'lihat kehadiran' button on the attendance program	- User must be registered in the system to view the attendance program. - Upon clicking the button, the user is redirected to the view attendance program page. - The page displays a list of students who attended the program.
Committee List	ATC_0112	User needs to click 'jawatankuasa' on the navigation bar	- Upon successful login, the user is redirected to the committee list page. - The page displays a list of committee members for PERSADA clubs.
Update Committee List	ATC_0113	User needs to click the 'ubah' button on the committee list	- Upon clicking the button, the user is redirected to the update committee list page. - The page displays

			the details of the selected committee for updating.
Delete Committee List	ATC_0114	User needs to click the 'padam' button on the committee list	- The system shows an alert message before deletion. - After confirmation, the committee list is deleted.
Report Attendance Program	ATC_015	User needs to click the 'laporan kehadiran' on the navigation bar	- User must click on the report attendance program option in the report section. - Upon selection, the user is redirected to the report attendance program page. - The page displays all programs and student lists organized by PERSADA clubs
Print	ATC_0116	User is required to click the 'cetak' button to print	- The 'cetak' button is only available on the report attendance program page. - Upon clicking, the user is redirected to a printable version of the attendance program organized by PERSADA clubs

Upload File	ATC_0117	User needs to click 'aktiviti' on the navigation bar and choose a file to upload	- User must click on the activity navigation bar, select 'choose file', and upload the file. - The user is redirected to the activity page where the file is uploaded successfully.
Delete Upload File	ATC_0118	User needs to click the 'padam' button on the activity page to delete a file	- User must click the delete button on the activity page. - The system shows an alert message before deletion. - After confirmation, the file is deleted.
Schedule	ATC_0119	Event schedule page loads correctly for the club	The event schedule page should load without errors and display all upcoming events for the club.
Add Schedule Program	ATC_0120	Verify that user create a new event in the schedule	The admin should be able to create a new event, and it should appear in the club's event schedule.
Verify Schedule Program	ATC_0121	Verify that event details are displayed correctly	Event details such as title, date, time, and description should be

			correctly displayed on the schedule page.
Delete Schedule Program	ATC_0122	Verify that user can delete an event from the schedule	The admin should be able to delete an event, and it should be removed from the schedule.
Displayed Schedule Program	ATC_0123	Verify that events are displayed in chronological order	Events should be displayed in order of their date and time, with the soonest events listed first.
Logout	ATC_0124	User is required to click the 'log keluar' button to log out	- User must be logged in before logging out. - Upon clicking 'log keluar', the user is redirected to the Main page. - The session is ended, and the user is logged out.

- **Test Cases for Student**

Table 6.5 Student user test cases

Module	Test Case ID	Description	Expected Result
Register Club	STC_01	User needs to click 'pendaftaran kelab' on the navigation bar, fill in the form, and click the 'simpan' button to register a club	- All required fields in the registration form must be filled in. - Upon clicking 'simpan', the user is redirected to the register club page where the club is successfully registered.
View Program	STC_02	User can view programs in the PERSADA club	- User can see the list of programs in the PERSADA club. - Upon selecting a program, the user is redirected to the view program page showing program details.

6.4.2   Test Data

This section discuss what are the inputs used for testing for the test cases.

- **Test Cases for Admin**

Table 6.6 Test Data for Admin test case

Test Case ID	Precondition	Test Data	Steps/Flows
ATC_01	User is on the login page.	"ID Penggna": izzah "Katalaluan": izzah@123	1. Enter "izzah" in the username field. 2. Enter "izzah@123" in the password field. 3. Click the login button.
ATC_02	User is on the login page.	No input	1. Locate the "Lupa Kata Laluan" link. 2. Ensure the link is visible and clickable.
ATC_03	User clicks "Lupa Kata Laluan" link on the login page.	No input	1. Click the "Lupa Kata Laluan" link. 2. Verify redirection to the password reset page.
ATC_04	User is on the password reset page.	Invalid Email: izzah@gmalcom Valid Email: izzah@gmail.com	1. Enter invalid-email and check for a validation prompt. 2.Enter izzah@gmail.com. 3. Submit the form.
ATC_05	User is logged in as admin.	No input	1. Click the 'log masuk' button. 2. Verify redirection to the student list page.
ATC_06	User click dropdown.	No input	1. Click the dropdown on the program navigation bar. 2. Select 'senarai program'.

ATC_07	User enter "tambah program" button.	No input	1. Click the 'tambah program' button on the program list page.
ATC_08	Enter program that want modify	"Nama Program" : Meeting Hari Peneroka "Tarikh Program" :20-06-2024 "Masa Program" :21:30 Tempat Program" : Google Meets	1. Update program details with new values. 2. Save changes.
ATC_09	Enter program that want deleted	No input	1. Click the 'padam program' button. 2. Confirm deletion in the alert message.
ATC_010	Enter navigation bar	No input	1. Click the dropdown on the program navigation bar. 2. Select 'kehadiran'.
ATC_0111	Enter "kehadiran" on Program	"Pilih Program" : Meeting Smashminton	1. Click the 'lihat kehadiran' button. 2. Verify the list of students who attended the program.
ATC_0112	Enter "jawatankuasa"	No input	1. Click 'jawatankuasa' on the navigation bar.
ATC_0113	Enter the "ubah" button that want select to modify	"No Matrik" : B032310003 "Nama" : IZZAH ATIKAH MUNIRAH BINTI IZAUDDIN "No Telefon" : 0182808312	1. Click the 'ubah' button. 2. Update committee details. 3. Save changes.

		"Email" : izzah@gmail.com	
ATC_0114	Select member club that want deleted	No input	1. Click the 'padam' button. 2. Confirm deletion in the alert message.
ATC_0115	Enter "laporan" on navigation bar	"Pilih Program" : Hari Peneroka	1. Click the 'laporan kehadiran' on the navigation bar. 2. Verify redirection to the report attendance program page.
ATC_0116	User is on the report attendance program page.	No input	1. Click the 'cetak' button. 2. Verify redirection to a printable version of the report.
ATC_0117	Enter "fail" on "Aktiviti"	File to Upload: activity_report.pdf	1. Click 'aktiviti' on the navigation bar. 2. Choose activity_report.pdf. 3. Confirm upload.
ATC_0118	Select "fail" that want deleted	File to Delete: activity_report.pdf	1. Click the 'padam' button next to activity_report.pdf. 2. Confirm deletion in the alert message.
ATC_0119	Enter "schedule" on "Aktiviti"	No input	1. Navigate to the event schedule page. 2. Verify that the page loads correctly with upcoming events.
ATC_0120	Enter "Jadual Program" to filled	"Tajuk" : Meeting Hari Peneroka	1. Create a new event with Tajuk, Deskripsi, Mula and

		"Deskripsi" : Hari peneroka "Mula" : August 14, 2024 11:03 AM "Akhir" : August 14, 2024 1:03 PM	Akhir. 2. Save the event.
ATC_0121	Event is added to the schedule.	No input	1. Enter that event that added are correctly displayed on the schedule page.
ATC_0122	Event is deleted to the schedule	"Butiran Jadual" : Meeting Seminar	1. Delete the event with select the event to delete 2. Confirm deletion in the alert message.
ATC_0123	Events are added to the schedule.	No input	1. Verify that events are displayed in chronological order by date and time.
ATC_0124	Enter logout on navigation bar	No input	1. Click the 'log keluar' button. 2. Confirm logout. 3. Verify redirection to the Main page.

- **Test Cases for Student**

Table 6.7 Test Data for Student test case

Test Case ID	Precondition	Test Data	Steps/Flows
STC_01	Enter "pendaftaran" on navigation bar	"Nama Penuh": Roszaimi Bin Ahmad "No. Kad Pengenalan" : 010617103433 "No. Matrik" : B032210073 "No. Telefon" : 0182785165 "Fakulti" : FTMK "Kelas" : 2BITS "Email" : roszaimi@gmail.com "Alamat Rumah" : No 8 Rimau Indah Jalan Kebun 40460 Shah Alam	1. Click 'pendaftaran kelab' on the navigation bar. 2. Fill in the registration form with club details. 3. Click the 'simpan' button. 4. Verify that the user is redirected to the register club page, and the club is successfully registered.
STC_02	View Program	No input	- User can see the list of programs in the PERSADA club. - Upon selecting a program, the user is redirected to the view program page showing program details.

79

6.5 Test Results and Analysis

Based on the test description in the previous section, the following table shows the test result for all of the test cases.

- **Test Result for Admin Test Case**

Table 6.8 Test Result for Admin test case

Test Case ID	Actual Result	Pass/Fail
ATC_01	- The system successfully verified the "ID Pengguna and "kata laluan". - User was redirected to the Dashboard page.	Pass
ATC_02	"Lupa Kata Laluan" link is visible and clickable.	Pass
ATC_03	Redirected to the password reset page.	Pass
ATC_04	Validation prompt for invalid email; valid email accepted.	Pass
ATC_05	Redirected to the student list page.	Pass
ATC_06	Program list page displayed.	Pass
ATC_07	Redirected to add program page.	Pass
ATC_08	Program details updated successfully.	Pass
ATC_09	Program deleted from the list.	Pass
ATC_010	Redirected to the attendance program page.	Pass
ATC_0111	List of students displayed.	Pass
ATC_0112	Redirected to the committee list page.	Pass
ATC_0113	Committee details updated successfully.	Pass
ATC_0114	- The system showed an alert message before deletion. - The committee list was deleted after confirmation.	Pass
ATC_0115	Redirected to the report attendance program page.	Pass
ATC_0116	Redirected to printable version of the report.	Pass
ATC_0117	- Redirected to the activity page after choosing the file to upload. - File was uploaded successfully.	Pass

ATC_0118	- The system showed an alert message before deletion. - File was deleted successfully after confirmation.	Pass
ATC_0119	Event schedule page loads correctly.	Pass
ATC_0120	Event added to the schedule successfully.	Pass
ATC_0121	Event displayed correctly on the schedule page.	Pass
ATC_0122	Event deleted from the schedule.	Pass
ATC_0123	Events displayed in chronological order.	Pass
	- Redirected to the Main page after clicking 'log keluar'. - The session was ended, and the user was logged out.	Pass

- **Test Result for Student Case**

Table 6.9 Test Result for Student test case

Test Case ID	Actual Result	Pass/Fail
STC_01	Student registered successfully.	Pass
STC_02	Student view detail program successfully	Pass

6.6 Conclusion

This chapter plays a crucial role in concluding the system testing phase, which is essential for ensuring that all system requirements are met before the system is deployed. By validating the system against these requirements, this chapter confirms that the system is ready for production. Additionally, it serves as a valuable reference for future testing, particularly when new features are introduced post-implementation. This ensures that the system remains robust and reliable as it evolves.

CHAPTER 7: CONCLUSION

7.1 Observation on Weakness and Strengths

PERSADA Club Management System boasts several notable strengths. Its centralized data management effectively consolidates all club-related information into a single platform, which enhances accuracy and reduces the potential for manual errors. This centralization streamlines administrative tasks, saving time for both students and administrators. The system's secure environment ensures data protection through controlled access, while its user-friendly interface makes navigation straightforward for users of varying technical skill levels, thereby improving overall operational efficiency.

However, the system does have some weaknesses. One major limitation is the lack of a mobile-friendly interface or dedicated app, which may restrict users who prefer or need to access the system via smartphones or tablets. Additionally, the system's basic analytics and reporting features might not provide the depth of insights needed for comprehensive strategic decision-making. Security vulnerabilities, such as the absence of advanced measures like two-factor authentication, could potentially expose the system to unauthorized access and data breaches.

Overall, while the PERSADA Club Management System effectively addresses many of the challenges associated with data management and operational efficiency, addressing these weaknesses could significantly enhance its functionality. Improvements such as developing a mobile interface, expanding analytics capabilities, and strengthening security measures would optimize the system's performance and ensure it better meets the evolving needs of its users. These enhancements would help maximize the system's benefits and support the club's operations more effectively.

7.2   Propositions for Improvement

Propositions for improve the PERSADA Club Management System, several key enhancements are recommended. These include refining the user interface for better usability and developing a mobile version for easier access. Advanced data analytics and reporting tools should be integrated, along with automated notifications for event reminders and attendance alerts. Enhancing security with features like two-factor authentication and regular security audits is crucial. Additionally, integrating with other systems and social media platforms, providing robust support mechanisms, and optimizing for scalability and performance will further improve the system's effectiveness and user satisfaction.

7.3   Project Contribution

The development of the PERSADA Club Management System represents a collaborative effort between the developer, Siti Nurul Nurhafizah Binti Roszaimi, and her supervisor, TS. Dr. Ummi Rabaah Binti Hashim. The project's success is attributed to several key contributions. The developer played a crucial role in designing and implementing the system, drawing upon her technical expertise to translate the project's requirements into a functional software solution. She conducted observations and interviews with FELDA students at UTeM to gather essential insights and ensure the system met the users' needs.

On the other hand, the supervisor provided invaluable guidance and oversight throughout the project. TS. Dr. Ummi Rabaah Binti Hashim offered strategic direction, ensuring the project remained aligned with its goals, and contributed innovative ideas that enhanced the system's functionality. Together, they collaborated to refine the system's features, address challenges, and ensure the final product was robust, user-friendly, and capable of effectively managing the activities and operations of the PERSADA Club. The combination of technical development and strategic guidance made this project a success, delivering a tool that meets the needs of its users and supports the club's ongoing activities.

7.4   Conclusion

In conclusion, the PERSADA Club Management System significantly enhances the management and accessibility of information related to the PERSADA Club, including tracking student attendance for various programs. By replacing the previous manual processes with a more efficient, secure, and reliable digital solution, the system addresses all the challenges previously encountered. The system is now in a stable state, free of bugs, and is designed to meet the growing reliance on database technologies for managing both day-to-day and long-term activities within the club. This project has successfully outlined and fulfilled the technical and operational requirements necessary for developing an effective information system for the PERSADA Club. Ultimately, the system saves time and effort for students and administrators, offering a fast, easy to use platform that improves the overall management and functionality of the club's operations.

REFERENCES

Prezi, J. Y. O. (n.d.). *Online Student Club Management System*. prezi.com. https://prezi.com/ngkw_frr6daj/online-student-club-management-system/

Ltd, A. A. (2023, November 6). *Web Application for Club Management*. https://ukdiss.com/examples/club-management-web-application.php

Best Club Management Software Solutions in UAE- Equal. (2021, June 7). EQUAL. https://equal.ae/club-management/

Software Testing Methodologies. (n.d.). smartbear.com. https://smartbear.com/learn/automated-testing/software-testing-methodologies/

Atlassian, B. (n.d.). *Waterfall Methodology for Project Management | Atlassian*. Atlassian. https://www.atlassian.com/agile/project-management/waterfall-methodology#:~:text=What%20is%20the%20Waterfall%20methodology,%2C%20verification%2C%20and%20maintenance).

Handout 3: System Implementation Process. (2021). https://nrsweb.org/sites/default/files/HO3_System_Implement_Process.pdf

Appendix A: Snippet of program

PHP Coding

```php
8     $nama_pelajar = $_POST['nama_pelajar'];
9     $noTel_pelajar = $_POST['noTel_pelajar'];
10    $kelas_pelajar = $_POST['semester'] . $_POST['kelas'];
11    $fakulti_pelajar = $_POST['fakulti'];
12    $email_pelajar = $_POST['email_pelajar'];
13    $alamat_pelajar = $_POST['alamat_pelajar'] . " " . $_POST['poskod_pelajar'] . " " . $_POST['bandar_pelajar'] . " " .
      $_POST['negeri'];
14
15    $errors = array();
16
17    // Validate IC Pelajar (must be exactly 12 digits)
18    if (!preg_match('/^\d{12}$/', $ic_pelajar)) {
19        $errors['ic_pelajar'] = "No Kad Pengenalan mesti 12 digit.";
20    }
21
22    // Validate ID Pelajar (must start with 'B' followed by exactly 9 digits)
23    if (!preg_match('/^B\d{9}$/', $id_pelajar)) {
24        $errors['id_pelajar'] = "No Pendaftaran mesti bermula dengan 'B' diikuti 9 digit.";
25    }
26
27    // Validate Nama Pelajar (should only contain letters and spaces)
28    if (!preg_match('/^[A-Za-z\s\'-]+$/', $nama_pelajar)) {
```

```php
259   <?php
260   if(isset($conn)) $conn->close();
261   ?>
262   </body>
263   <script>
264       var scheds = $.parseJSON('<?= json_encode($sched_res) ?>')
265       $(document).ready(function() {
266           // Inisialisasi kalendar dalam mod lihat sahaja
267           $('#calendar').fullCalendar({
268               // Konfigurasi FullCalendar asas
269               editable: false, // Mencegah seret dan saiz acara
270               selectable: false, // Nyahaktifkan pemilihan acara
271               events: scheds,
272               eventClick: function(event) {
273                   // Mengisi modal dengan butiran acara
274                   $('#event-details-modal #title').text(event.title);
275                   $('#event-details-modal #description').text(event.description);
276                   $('#event-details-modal #start').text(event.start_datetime);
277                   $('#event-details-modal #end').text(event.end_datetime);
278                   $('#event-details-modal').modal('show');
279               }
```

CSS Coding

```
13 ▼      <style>
14 ▼          .login {
15               width: 400px;
16               background-color: #ffffff;
17               box-shadow: 0 0 9px 0 rgba(0, 0, 0, 0.3);
18               margin: 100px auto;
19               padding: 20px;
20           }
21 ▼          .login h1 {
22               text-align: center;
23               color: #5b6574;
24               font-size: 24px;
25               padding: 20px 0;
26               border-bottom: 1px solid #dee0e4;
27           }
28 ▼          .login form {
29               display: flex;
30               flex-wrap: wrap;
31               justify-content: center;
32               padding-top: 20px;
33           }
34 ▼          .login form label {
64           }
65 ▼          .button {
66               background-color: #4CAF50; /* Green */
67               border: none;
68               color: white;
69               padding: 20px;
70               text-align: center;
71               text-decoration: none;
72               display: inline-block;
73               font-size: 16px;
74               margin: 4px 2px;
75               cursor: pointer;
76               border-radius: 50%;
77           }
78 ▼          .header {
79               padding: 80px;
80               text-align: center;
81               background: url("logo4.jpg");
82               background-repeat: no-repeat;
83               background-attachment: scroll;
84               background-position: center;
```

87

```css
103 ▼        .navbar a:hover {
104              background-color: #ddd;
105              color: black;
106          }
107 ▼        .row {
108              display: flex;
109              flex-wrap: wrap;
110          }
111 ▼        .side {
112              flex: 30%;
113              background-color: #f1f1f1;
114              padding: 20px;
115          }
116 ▼        .main {
117              flex: 70%;
118              background-color: white;
119              padding: 20px;
120          }
121 ▼        .fakeimg {
122              background-color: #ccc9c2;
123              width: 100%;
124              padding: 20px;
140  //styles for form row and fields.
141 ▼ .field-row {
142     position: relative;
143     width: 100%;
144  }
145
146 ▼ .form-label {
147     display: inline-block;
148     font-size: 20px;
149     margin: 0 5px 5px 0;
150     text-align: right;
151     width: 240px;
152  }
153
154 ▼ .field {
155     border: 1px solid #ccc;
156     box-sizing: border-box;
157     display: inline-block;
```

HTML Coding

```
253 ▼          <form action="process.php" method="post">
254 ▼              <label for="username">
255                    <i class="fas fa-user"></i>
256                </label>
257                <input type="text" name="username_committee" placeholder="ID Pengguna" id="username">
258 ▼              <label for="password">
259                    <i class="fas fa-lock"></i>
260                </label>
261                <input type="password" name="password_committee" placeholder="Katalaluan" id="password">
262
263                <button class="btn btn-primary" name="login">Log Masuk</button>
264
265 ▼              <p class="forgot-password">
266                    <a href="forgot_password.php">Lupa Katalaluan?</a>
267                </p>
268            </form>
269            <br>
270 ▼          <p>
271                    Adakah anda ingin mendaftar?<a href="signup.php">Daftar</a>
272            </p>
273        </div>

158 ▼ <body>
159 ▼ <div class="log-w3">
160 ▼      <div class="w3layouts-main">
161            <h2 style="color:#fff">Pulih Kata Laluan</h2>
162 ▼          <form action="" method="post" name="changepassword" onsubmit="return checkpass();">
163                <input class="ggg" type="password" required name="newpassword" placeholder="Kata Laluan Baru">
164                <input class="ggg" type="password" name="confirmpassword" required placeholder="Mengesahkan Kata Laluan">
165                <div class="clearfix"></div>
166                <input type="submit" value="Set Semula" name="submit">
167            </form>
168            <p><a href="login.php">Log Masuk</a></p>
169            <p class="mb-1"><i class="fa fa-home" aria-hidden="true"></i><a href="main.php">Menu Utama</a></p>
170        </div>
171  </div>
```

89

Appendix B: Sample of Data

Committee edit "Jawatankuasa" detail.

Committee view bar graph program.

90

Committee searching "Senarai Jawatankuasa".

Committee select program "Mesyuarat gong KALI KE 1/2024".

Committee added "Muat Naik Gambar Banner".

Committee added event "Jadual program" detail.
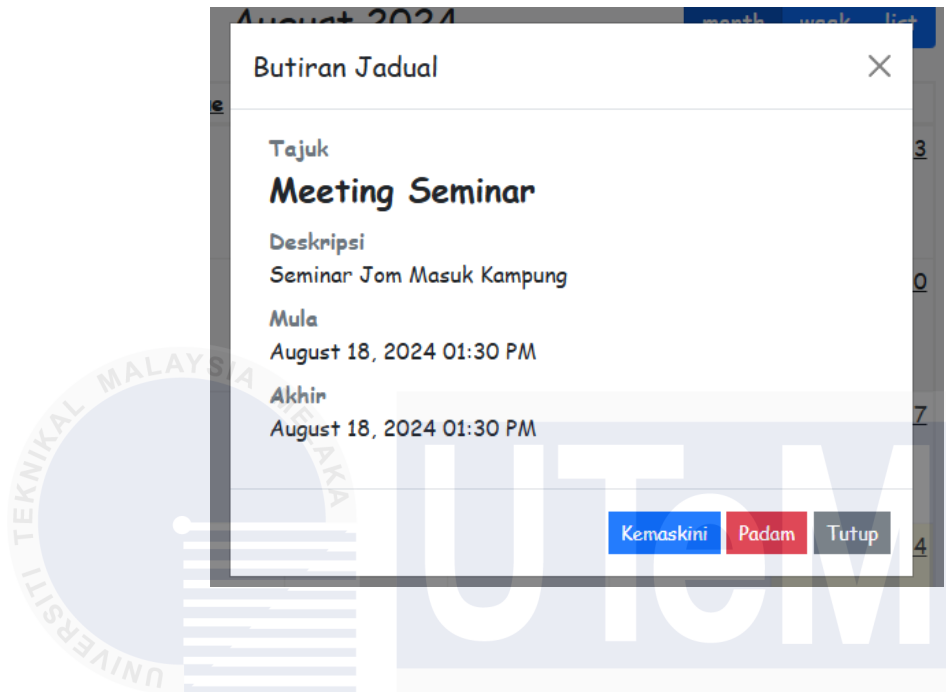
Committee view event "Butiran Jadual" detail.
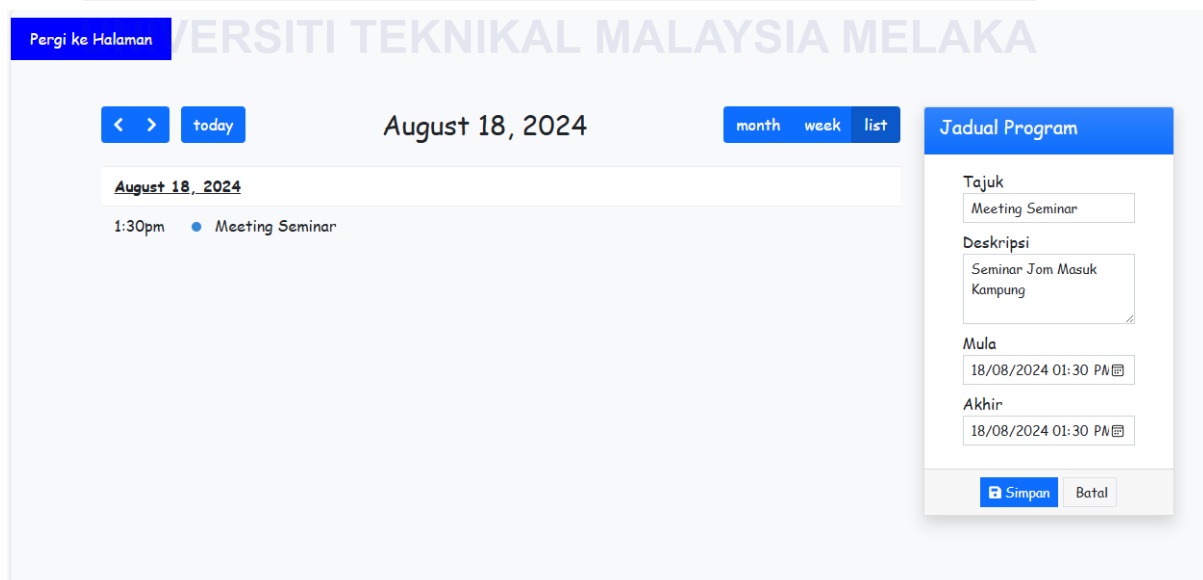
Committee view list event detail.

Appendix C: Sample of test case

- Test Cases for Admin

Module	Test Case ID	Description	Expected Result
Login	ATC_01	User is required to fill in the username and password to access the system	- The system verifies the username and password against the database. - If the credentials match, the user is redirected to the Dashboard page.
Forgot Password	ATC_02	Verify that the " Lupa Kata Laluan " link is available on the login page	The "Lupa Kata Laluan" link should be visible and click able on the login page.
Verify redirect to Password Reset Page	ATC_03	Verify that clicking the "Lupa Kata Laluan" link redirects to the password reset page	The user should be redirected to a password reset page where they can initiate the process.
Verify Email	ATC_04	Verify that the system requires a valid email address	The system should prompt the user to enter a valid email address.

Confirmation Reset Password	ATC_04	Verify that the password reset process is completed successfully with a valid new password	After entering a valid new password, the system should update the user's password and confirm the reset.
Student List	ATC_05	User clicks the 'log masuk' button on the login page	- User must be logged in as an admin to view the student list. - Upon successful login, the user is redirected to the student list page. - The student list page displays a list of students registered with PERSADA clubs.
Program List	ATC_06	User needs to dropdown on the program navigation bar and click 'senarai program'	- The program list page displays all programs organized by PERSADA clubs.

Add Program	ATC_07	User needs to click the 'tambah program' button on the program list page	- User must be registered in the system to add a program. - Upon clicking the button, the user is redirected to the add program page.
Update Program Detail	ATC_08	User needs to click the 'ubah program' button on the program list	- User must be registered in the system to update the program. - Upon clicking the button, the user is redirected to the update program page. - The page displays the details of the selected program for updating.
Delete Program	ATC_09	User needs to click the 'padam program' button on the program list	- User must be registered in the system to delete the program. - The system shows an alert message before deletion. - After confirmation, the program is deleted from the list.

Attendance Program	ATC_010	User needs to dropdown on the program navigation bar and click 'kehadiran'	- User must be logged in as an admin to access the attendance program. - Upon successful login, the user is redirected to the attendance program page.
View Attendance Program	ATC_0111	User needs to click the 'lihat kehadiran' button on the attendance program	- User must be registered in the system to view the attendance program. - Upon clicking the button, the user is redirected to the view attendance program page. - The page displays a list of students who attended the program.
Committee List	ATC_0112	User needs to click 'jawatankuasa' on the navigation bar	- Upon successful login, the user is redirected to the committee list page. - The page displays a list of committee members for PERSADA clubs.

Update Committee List	ATC_0113	User needs to click the 'ubah' button on the committee list	- Upon clicking the button, the user is redirected to the update committee list page. - The page displays the details of the selected committee for updating.
Delete Committee List	ATC_0114	User needs to click the 'padam' button on the committee list	- The system shows an alert message before deletion. - After confirmation, the committee list is deleted.
Report Attendance Program	ATC_015	User needs to click the 'laporan kehadiran' on the navigation bar	- User must click on the report attendance program option in the report section. - Upon selection, the user is redirected to the report attendance program page. - The page displays all programs and student lists organized by PERSADA clubs
Print	ATC_0116	User is required to click the 'cetak' button to print	- The 'cetak' button is only available on the report attendance program page.

			- Upon clicking, the user is redirected to a printable version of the attendance program organized by PERSADA clubs
Upload File	ATC_0117	User needs to click 'aktiviti' on the navigation bar and choose a file to upload	- User must click on the activity navigation bar, select 'choose file', and upload the file.

- The user is redirected to the activity page where the file is uploaded successfully. |
| Delete Upload File | ATC_0118 | User needs to click the 'padam' button on the activity page to delete a file | - User must click the delete button on the activity page.
- The system shows an alert message before deletion.
- After confirmation, the file is deleted. |
| Schedule | ATC_0119 | Event schedule page loads correctly for the club | The event schedule page should load without errors and display all upcoming events for the club. |

Add Schedule Program	ATC_0120	Verify that user create a new event in the schedule	The admin should be able to create a new event, and it should appear in the club's event schedule.
Verify Schedule Program	ATC_0121	Verify that event details are displayed correctly	Event details such as title, date, time, and description should be correctly displayed on the schedule page.
Delete Schedule Program	ATC_0122	Verify that user can delete an event from the schedule	The admin should be able to delete an event, and it should be removed from the schedule.
Displayed Schedule Program	ATC_0123	Verify that events are displayed in chronological order	Events should be displayed in order of their date and time, with the soonest events listed first.
Logout	ATC_0124	User is required to click the 'log keluar' button to log out	- User must be logged in before logging out. - Upon clicking 'log keluar', the user is redirected to the Main page. - The session is ended, and the user is logged out.

- **Test Cases for Student**

Module	Test Case ID	Description	Expected Result
Register Club	STC_01	User needs to click 'pendaftaran kelab' on the navigation bar, fill in the form, and click the 'simpan' button to register a club	- All required fields in the registration form must be filled in. - Upon clicking 'simpan', the user is redirected to the register club page where the club is successfully registered.
View Program	STC_02	User can view programs in the PERSADA club	- User can see the list of programs in the PERSADA club. - Upon selecting a program, the user is redirected to the view program page showing program details.