



Faculty of Computer Science and Information Technology

***UNIMAS EVENTHUB: REAL-TIME EVENT TRACKER AND MERIT POINT
SYSTEM***

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Bachelor of Software Engineering with Honours

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UNIMAS EVENTHUB: REAL-TIME EVENT TRACKER AND MERIT POINT
SYSTEM

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This project is submitted in partial fulfilment of
the requirements for the degree of Bachelor of Computer Science with Honours
(Software Engineering)

Faculty of Computer Science and Information Technology

UNIVERSITI MALAYSIA SARAWAK

2024

Declaration

I hereby declare that this project is my original work. I have not copied from any other student's work or other sources except where reference or acknowledgement is not made explicitly in the text, nor has any part been written for me by another person.



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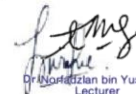
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ABSTRACT

Students at Universiti Malaysia Sarawak (UNIMAS) face challenges in discovering and managing their participation in campus events due to scattered information and inefficient tracking systems. The UNIMAS EventHub addresses these issues with a centralized web platform that simplifies event discovery, registration, and attendance tracking. It also supports event organizers with tools to manage updates and monitor participation effectively. Key features include automatic merit point tracking, QR code-based merits tracking and a volunteer system to encourage student involvement. Developed using Agile Scrum methodology, the platform aims to enhance student engagement and create a more connected campus community.

ABSTRAK

Para pelajar di Universiti Malaysia Sarawak (UNIMAS) menghadapi pelbagai cabaran dalam usaha untuk mengenal pasti dan mengurus penyertaan mereka dalam aktiviti kampus disebabkan oleh penyebaran maklumat yang tidak teratur serta sistem penjejakan yang kurang efisien. UNIMAS EventHub dibangunkan bagi menangani isu ini melalui sebuah platform web berpusat yang memudahkan proses pencarian maklumat acara, pendaftaran, serta penjejakan kehadiran. Platform ini turut menyediakan kemudahan kepada penganjur acara untuk mengurus maklumat terkini dan memantau tahap penyertaan dengan lebih sistematik. Antara ciri utama yang ditawarkan termasuk penjejakan mata merit secara automatik, sistem pengesahan kehadiran berasaskan kod QR, serta sistem sukarelawan yang bertujuan menggalakkan penglibatan pelajar secara aktif. Platform ini dibangunkan menggunakan metodologi Agile Scrum dengan matlamat untuk meningkatkan keterlibatan pelajar dan membentuk komuniti kampus yang lebih inklusif dan bersepadu.

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LIST OF ABBREVIATIONS

Abbreviation	Full Form
UNIMAS	Universiti Malaysia Sarawak
FYP	Final Year Project
UI	User Interface
API	Application Programming Interface
DFD	Data Flow Diagram
MVP	Minimum Viable Product
IDE	Integrated Development Environment
UAT	User Acceptance Testing
WCAG	Web Content Accessibility Guidelines
PDPA	Personal Data Protection Act
HTML	HyperText Markup Language
CSS	Cascading Style Sheets
PHP	Hypertext Preprocessor
QR	Quick Response
SU	Students' Union
RSVP	Répondez S'il Vous Plaît (Please Respond)

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CHAPTER 1: INTRODUCTION

1.0 Introduction

UNIMAS EventHub is a web application developed to improve campus life at Universiti Malaysia Sarawak (UNIMAS) by providing students with an easy and centralized platform to explore, register for, and track participation in university events. With a wide range of academic and social activities, campus events play a central role in shaping the student experience. However, finding, organizing, and keeping up with these events can be challenging without a centralized, accessible system. This is especially true for students seeking to earn merit points through event participation, which contributes to their overall campus involvement and achievements as students can become more involved with their campus and the community through college events.

(Momentum Technologies, 2023)

UNIMAS EventHub is designed to bridge this gap by creating a single, user-friendly platform that centralizes event information for the university community. By combining event registration, attendance tracking, and a volunteer feature, *UNIMAS EventHub* aims to foster a more inclusive and active campus environment. With its focus on enhancing student engagement and supporting event organizers, the app is set to play a key role in making campus life at UNIMAS more accessible, organized, and engaging, contributing to a stronger, more connected university community.

1.1 Problem Statement

Students at Universiti Malaysia Sarawak (UNIMAS) face challenges in staying informed about university events and managing their participation efficiently. Without a unified platform, event information is often scattered, leading to missed engagement opportunities and making it difficult for students to track their event attendance and merit points. This decentralized approach also affects event organizers, who struggle to manage attendance, communicate timely updates, and track participation effectively. These challenges are not unique to UNIMAS; surveys have shown that a lack of integrated student engagement tools is a widespread issue in higher education, leading to reduced student participation and disengagement from campus life. These challenges are common in higher education, as the absence of integrated engagement tools often leads to lower student involvement and connection with campus life (Suitable, 2023; Regpack, 2023).

Additionally, many students seek volunteer or staff roles to earn merit points, but these opportunities are not always accessible, creating further barriers to engagement. Research highlights that simplifying access to campus events and fostering a strong sense of community through wellorganized activities significantly improves student participation, retention, and overall campus experience (Inside Higher Ed, 2023).

1.2 Scope

The *UNIMAS EventHub* project aims to create a web application to simplify event management and participation for Universiti Malaysia Sarawak (UNIMAS) students and organizers. The platform will enable students to stay informed of upcoming, ongoing, and past events, with features like easy event tracking, QR code merit tracking, Google Maps integration for event locations, and a direct event registration process.

UNIMAS EventHub will also include a volunteer section where students can find opportunities to earn merit points by supporting events. To enhance accessibility, events will be organized by type, faculty, or external groups, allowing students to filter events that match their interests.

Primary users will be UNIMAS students, benefiting from improved event access and merit tracking, while secondary users include event organizers who can manage and promote their events more efficiently. Accessible on various devices, this platform aims to support a more connected and active campus community at UNIMAS.

1.3 Aims and Objectives

The aim of this project is to develop the UNIMAS EventHub, a centralized web platform to enhance student engagement and efficient event management at Universiti Malaysia Sarawak (UNIMAS). The application will simplify event discovery, participation, and merit tracking for students while equipping organizers with efficient management tools.

The objectives of the project are:

1. **To design and implement a centralized platform for event discovery and registration**, enabling students to easily access, filter, and register for university events based on their preferences and needs.
2. **To automate the tracking of event merit points**, ensuring an efficient and transparent system that encourages consistent student participation while reducing administrative workload for organizers.
3. **To integrate features like real-time updates volunteer matching, and Google Maps navigation.**

1.4 Brief Methodology

The *UNIMAS EventHub* will be developed using an Agile methodology, specifically Scrum, to allow flexibility and regular user feedback. (Team KissFlow, 2024)

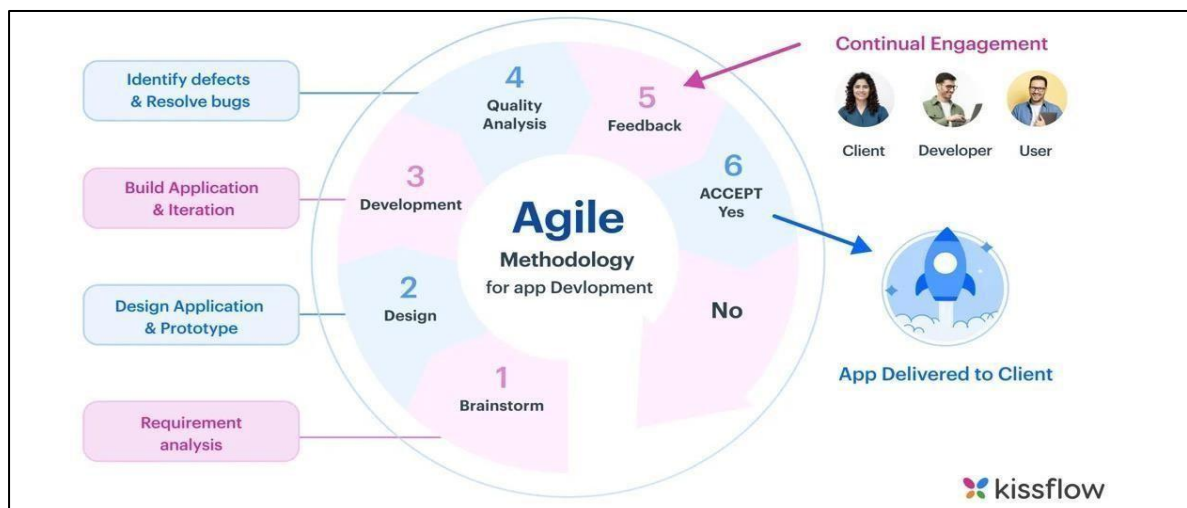


Figure 1 Agile Development Approach

1.4.1 Agile Development Approach

Development will occur in sprints (2–3 weeks) focused on prioritized features. Each sprint includes:

- A) User Stories to define features based on user needs.
- B) Sprint Planning and Reviews to set goals, assess progress, and gather feedback.
- C) Continuous Testing to ensure quality.

1.4.2 Phases of Development

The UNIMAS EventHub will be developed using the Agile Scrum framework to ensure flexibility and continuous improvements based on user feedback. The development process is divided into clear phases to ensure the platform meets the needs of students and organizers.

In the **Planning Phase**, information will be collected from surveys and interviews with students and faculty. This helps to identify problems they face with event management and what features they need, like merit point tracking and event navigation. Based on this, a list of features and a development plan with timelines will be created to guide the project.

The **Prototyping Phase** will focus on creating an early version of the platform, called a Minimum Viable Product (MVP), to test the core features. This phase uses Figma to design the user interface and visualize how the platform will look and function. Features such as event lists, registration, and notifications will be modelled in Figma, ensuring the design is user-friendly and visually appealing.

In the **Development Phase**, the team will build the platform in small steps called sprints, each lasting 2–3 weeks. The first sprints will focus on basic features, such as listing events, tracking attendance with QR codes, and merit points. Later sprints will add more advanced features, like

Google Maps for navigation, real-time updates, and a system to connect students with volunteer opportunities. Each sprint will include testing to fix any issues right away.

The **Testing and Feedback Phase** will ensure the platform works well and is easy to use. After every sprint, users like students and organizers will test the system and give feedback. This feedback will help fix problems and improve features. A full round of testing will also check that the platform is fast, secure, and reliable.

Finally, in the **Deployment Phase**, the platform will be launched and made available to all users. It will be hosted on a cloud platform so it can be accessed anytime and on any device. Training and instructions will be given to help users understand how to use it. After the launch, regular updates and maintenance will keep the platform running smoothly and add improvements as needed.

1.5 Significance of Project

The *UNIMAS EventHub* web application is an important tool for enhancing student engagement and improving event management at Universiti Malaysia Sarawak (UNIMAS). By centralizing event information, and managing merit points, this platform encourages students to actively participate in campus events, helping them connect more deeply with the university community. The application supports personal and academic growth by making it easier for students to find and join activities that enhance their university experience.

For event organizers, *UNIMAS EventHub* streamlines administrative tasks, enabling them to organize, promote, and manage events more effectively. Additionally, the platform's user data will provide insights into student engagement trends, allowing for ongoing improvements to meet students' evolving needs. This project supports UNIMAS's goal of aiming a vibrant campus life and highlights how technology can positively impact student involvement and campus connectivity.

1.6 Project Schedule

Below is the schedule using Gantt Chart. It consisted of two phases where FYP1 is phase 1 and FYP2 is phase 2.

Tasks	Start	Due	Start on Day*	Duration*
FYP1				
Submission of Approved Brief Proposal	10/15/2024	10/20/2024	0	5
Supervisors and Examiners Reviews	10/21/2024	10/28/2024	6	7
Submission of Approved Full Proposal	10/29/2024	11/14/2024	14	16
Submission of Chapter 1	11/15/2024	11/21/2024	31	6
Submission of Chapter 2	11/22/2024	12/13/2024	38	21
Submission of Chapter 3	12/14/2024	1/5/2025	60	22
Submission of Approved Final Full Project Proposal	1/6/2025	1/12/2025	83	6
FYP2				
Planning and Requirement Gathering	1/13/2025	1/19/2025	90	6
System Design & Initial Prototype	1/20/2025	1/26/2025	97	6
DEVELOPMENT AND IMPLEMENTATIONS				
Sprint 1: Homepage/Basic UI/UX Implementation	1/27/2025	2/10/2025	104	14
Sprint 2: Event Registration & Merit Tracking	2/11/2025	2/25/2025	119	14
Sprint 3: Notifications & Event Categorization	2/26/2025	3/12/2025	134	14
Sprint 4: QR Code Attendance & Event Feedback Features	3/13/2025	3/27/2025	149	14
Sprint 5: Volunteer and Vacancy Features Development	3/28/2025	4/10/2025	164	13
Sprint 6: Refine features based on cumulative feedback	4/11/2025	5/24/2025	178	43
User Testing & Final Adjustments	5/25/2025	6/4/2025	222	10
Documentations and Final Submission	6/7/2025	6/16/2025	235	9
Final Refinements and Submission of FYP2 Final Report and Presentation	6/17/2025	6/29/2025	245	12

Figure 2 Gantt Chart List

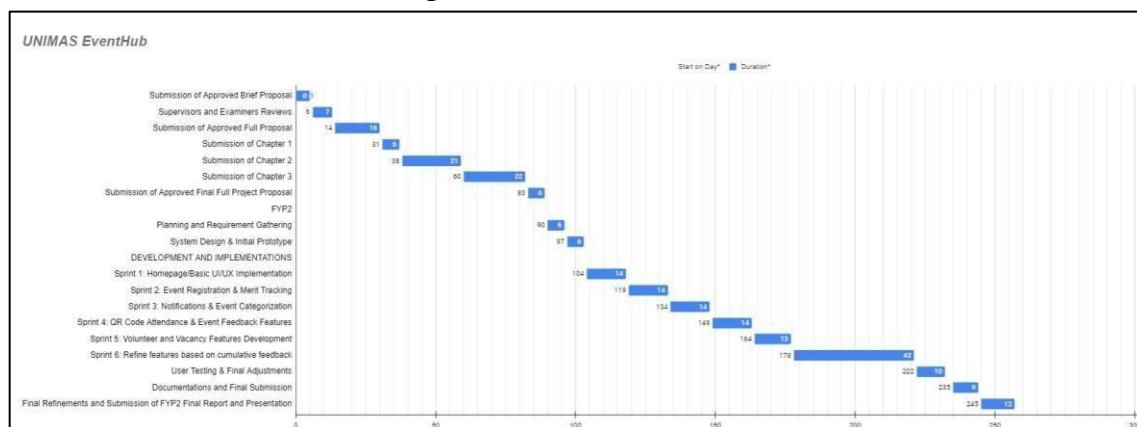


Figure 3 Gantt Chart of UNIMAS EventHub

1.7 Expected Outcome

The *UNIMAS EventHub* project aims to deliver a fully functional web application that simplifies event management and promotes active student participation at Universiti Malaysia Sarawak (UNIMAS). With this platform, students will be able to easily view and register for campus events, check in using QR codes, and track their accumulated merit points automatically. The app is expected to lead to increased student involvement, as students will have a clear overview of events and an efficient way to track their participation.

The volunteer and staffing options are expected to engage more students in campus activities by providing easy access to volunteer roles. Event organizers will also benefit from this platform, as it will streamline the management and promotion of events, providing valuable insights into attendance and engagement.

By sorting events into categories and sending timely notifications, the app will encourage regular student participation. Overall, these outcomes are intended to create a more connected campus community at UNIMAS, where students can easily engage in activities that support both their academic and personal growth.

1.8 Report Outline

This report provides an in-depth explanation of the development of UNIMAS EventHub, a web application designed to streamline event management and participation for the Universiti Malaysia Sarawak (UNIMAS) community. Chapter 1 introduces the project, including its background, the identified problems, the proposed objectives, and its scope, explaining the need for a centralized platform to improve campus event experiences. Chapter 2 explores existing studies and similar systems, focusing on how technology has been used to address issues in event management, student engagement, and merit tracking. Chapter 3 outlines the development process, covering the methodologies and tools used, with a focus on Agile practices to ensure regular user feedback and incremental improvements. Chapter 4 details the implementation phase, including the features developed, the technologies utilized, and the integration of key components like QR code

systems. Chapter 5 describes the testing phase, including feedback analysis and the methods used to ensure the platform meets user needs. Chapter 6 concludes the report by summarizing the project's achievements, reflecting on its impact, and recommending improvements for future iterations.

1.9 Chapter Summary

Chapter 1 introduces the UNIMAS EventHub project, a web-based solution for improving student engagement and event management at UNIMAS. It contains the challenges faced by students and organizers, such as the lack of a centralized system for event information and merit tracking. This chapter also discusses the project's objectives and scope, emphasizing the potential of technology to enhance campus life.

2. CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

This chapter reviews the existing studies and systems related to the development of the UNIMAS EventHub, a web application designed to improve event management and student engagement at Universiti Malaysia Sarawak (UNIMAS). The review explores past research, current event management tools, and technologies for tracking student participation and merit points. It highlights the strengths and weaknesses of these systems, showing where improvements are needed. The chapter also compares different methods and systems to explain the choices made for developing the UNIMAS EventHub. By understanding these insights, the project aims to create a platform that better supports students and event organizers while enhancing campus life.

2.1 Background Study

Student engagement is important in the vibrant campus culture and promoting both academic and personal development. At Universiti Malaysia Sarawak (UNIMAS), campus events are essential to student life, offering avenues for social interaction, skill enhancement, and academic enrichment. However, the current method of event handle and participation tracking present challenges that may

affect effective engagement. Implementing a centralized platform like the *UNIMAS EventHub* could address these issues by combining event management and participation tracking. This section examines the existing methods for event announcements, the advantages of adopting a centralized web application, and the significance of merit point tracking in enhancing student engagement.

2.2.1 Current Method for Event Announcements

At Universiti Malaysia Sarawak (UNIMAS), event announcements are mostly shared through WhatsApp and Telegram group chats. These group chats are linked to specific courses or faculties and are commonly used by students and faculty for sharing updates. This method is popular because it is easy to use and familiar to students.

One of the main benefits of using WhatsApp and Telegram is that messages are sent directly to students' phones, making it quick and easy for them to stay updated about events. These platforms also allow students to ask questions and get responses from organizers or other group members, making the process more interactive. Since most students are already in these group chats, event announcements can reach a large audience quickly.

However, this approach has some major downsides. Important event announcements can get lost among unrelated messages in the group chats, making it hard for students to find them later. Additionally, there is no proper system to organize or save event details, which makes it difficult to retrieve specific information when needed. Another issue is the lack of tools to track attendance, manage registrations, or assign merit points. This creates extra work for organizers and reduces efficiency.

While WhatsApp and Telegram are helpful for fast communication, their limitations show the need for a better system. A centralized platform could organize events more effectively, make it easier for students to find information, and provide tools to simplify event management for organizers.

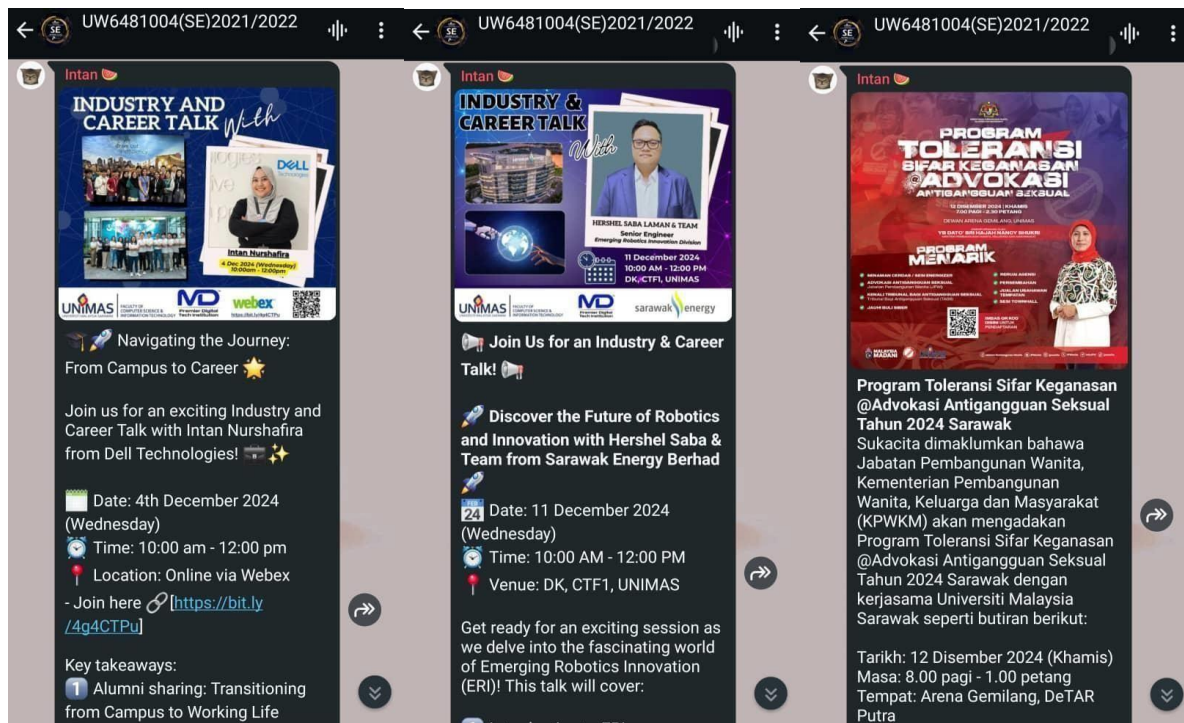


Figure 4 Event Announcements via Whatsapp

The reliance on WhatsApp as shown in Figure 4 for event announcements underscores the necessity for a more structured and organized approach to managing campus events.

2.2.2 Centralized Web Application for Event Management

A centralized web application, like the proposed UNIMAS EventHub, can address the problems of current event announcement methods by providing a dedicated platform for managing and tracking events. Unlike WhatsApp, which serves primarily as a messaging tool, a web application offers a more complete solution for discovering, registering, and monitoring events in an organized and efficient manner. By consolidating these functions in a single platform, the UNIMAS EventHub will simplify event management and enhance student participation.

Research supports the effectiveness of internet-based event management systems in improving communication and engagement. For example, a study conducted at Van Lang University in 2024 found that web-based platforms reduced organizational costs while improving

communication and student engagement. Similarly, the University of San Augustine developed a mobile application that successfully bridged communication gaps between university staff, student organizations, and students, resulting in greater overall engagement. These examples highlight how centralized systems can solve many challenges associated with event management and enhance the student experience. A similar effort has already been implemented at UNIMAS through the UNIMAS Now app, which serves as a reference point for creating a more comprehensive and focused event management platform.

The UNIMAS EventHub will include several key features to improve event organization and accessibility. First, it will act as a centralized repository where all event information is collected in one location, reducing the risk of missed or overlooked announcements. Second, it will categorize and filter events by type, faculty, or organizer, making it easier for students to find events that suit their interests and academic needs. Finally, the platform will integrate with the UNIMAS API to enable seamless user authentication and automate merit point tracking. This integration will save time for students and organizers, as all participation data will be managed automatically within the system.

2.2.3 Merit Point Tracking

Merit points are an important part of student life at Universiti Malaysia Sarawak (UNIMAS). They are often used for applications to college programs, leadership roles, and other opportunities. However, students currently face challenges in tracking their merit points manually, as there is no centralized system in place to manage this process. This manual tracking can be difficult, timeconsuming, and prone to errors, making it harder for students to keep an accurate record of their achievements.

The proposed UNIMAS EventHub aims to solve this issue by automatically tracking merit points for each event students participate in. This feature will allow students to see their merit points in real-time, giving them a clear understanding of their progress. With all merit points stored digitally, students can easily access their records when applying for college programs or leadership roles, saving time and reducing stress.

Other universities have implemented similar systems with great success. For example, the Merit2U system, an IoT-based tool, was developed to manage merit points for student hostel applications. It calculates points automatically and stores them digitally, making the process more accurate and efficient while reducing manual errors.

By including automated merit point tracking in the UNIMAS EventHub, the platform encourages students to participate more actively in campus events while also reducing the workload for university staff. This feature will make the process smoother for everyone and help UNIMAS achieve its goal of creating a lively and connected campus environment. The automated system ensures fairness and reliability, providing students and administrators with accurate records.

In conclusion, the merit point tracking feature in the UNIMAS EventHub offers a practical solution to the current challenges students face. By providing real-time tracking, fair point allocation, and easy access to records, it enhances student engagement and simplifies participation management, benefiting both students and the university.

2.3 Review Existing Systems

This section examines existing systems used for event management and student engagement, highlighting their features, strengths, and limitations. Many universities and institutions have adopted centralized platforms to streamline event organization, improve communication, and enhance user experience. The system used is Maize Pages by University of Michigan, University of Wisconsin Stout Connect System and Bristol Students' Union.

2.3.1 Maize Pages by University of Michigan

Maize Pages is an online platform used at the University of Michigan to help students get involved on campus. It acts as a one-stop hub where students can explore and connect with campus organizations and events. Developed in collaboration with Campus Labs, Maize Pages makes it easier for students to discover, join, and manage their participation in student groups and activities, enhancing their overall campus experience.

For students, Maize Pages offers tools to search for organizations, browse upcoming events, and track their involvement. This helps them find groups and activities that match their interests, hobbies, and academic goals. The platform also provides an event calendar, so students can stay informed about what is happening on campus, making it simpler for them to participate and engage with their peers.

Maize Pages is also very useful for student organization leaders. It includes management tools that allow them to update member rosters, store documents, and communicate with their members all in one place. These features make administrative tasks like keeping track of members and organizing events much easier, giving leaders more time to focus on growing their organizations and improving engagement with their members.

Additionally, Maize Pages plays a big role in promoting campus events. By listing all events and organizations in one accessible directory, it encourages students to explore opportunities and connect with others. This helps build a more connected and active student community, contributing to a vibrant and inclusive campus life.

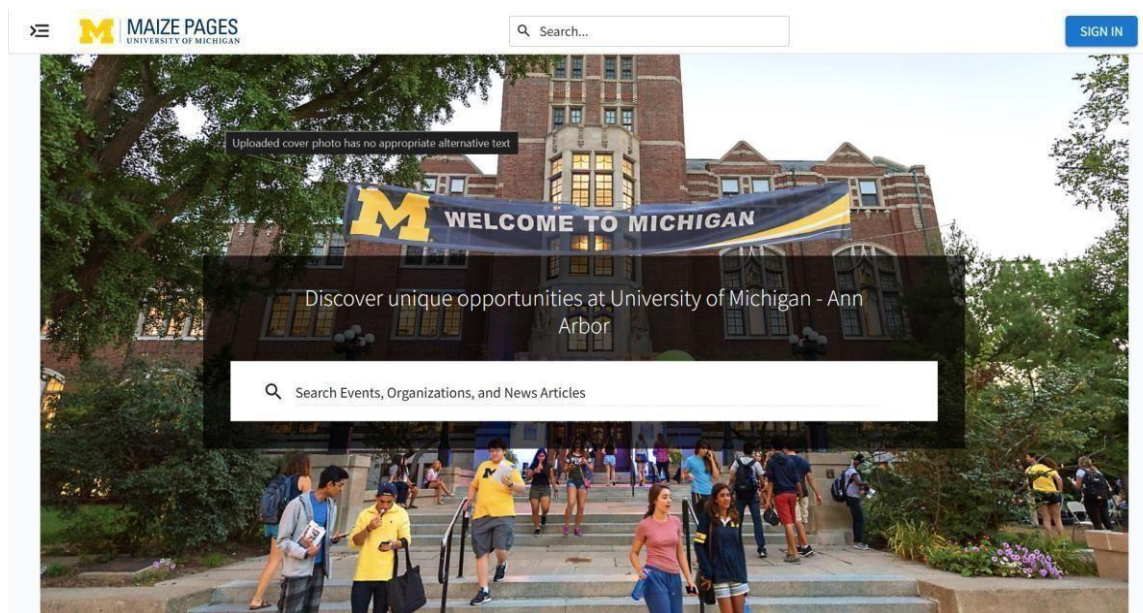


Figure 5 Maize Pages Landing Page 1

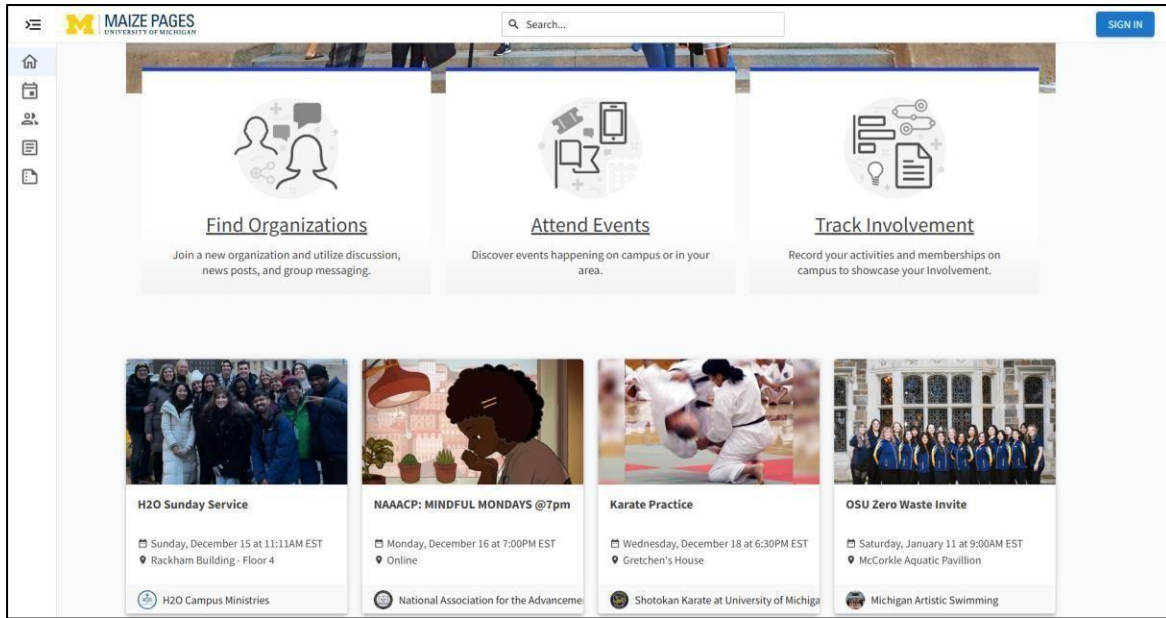


Figure 6 Maize Pages Landing Page 2

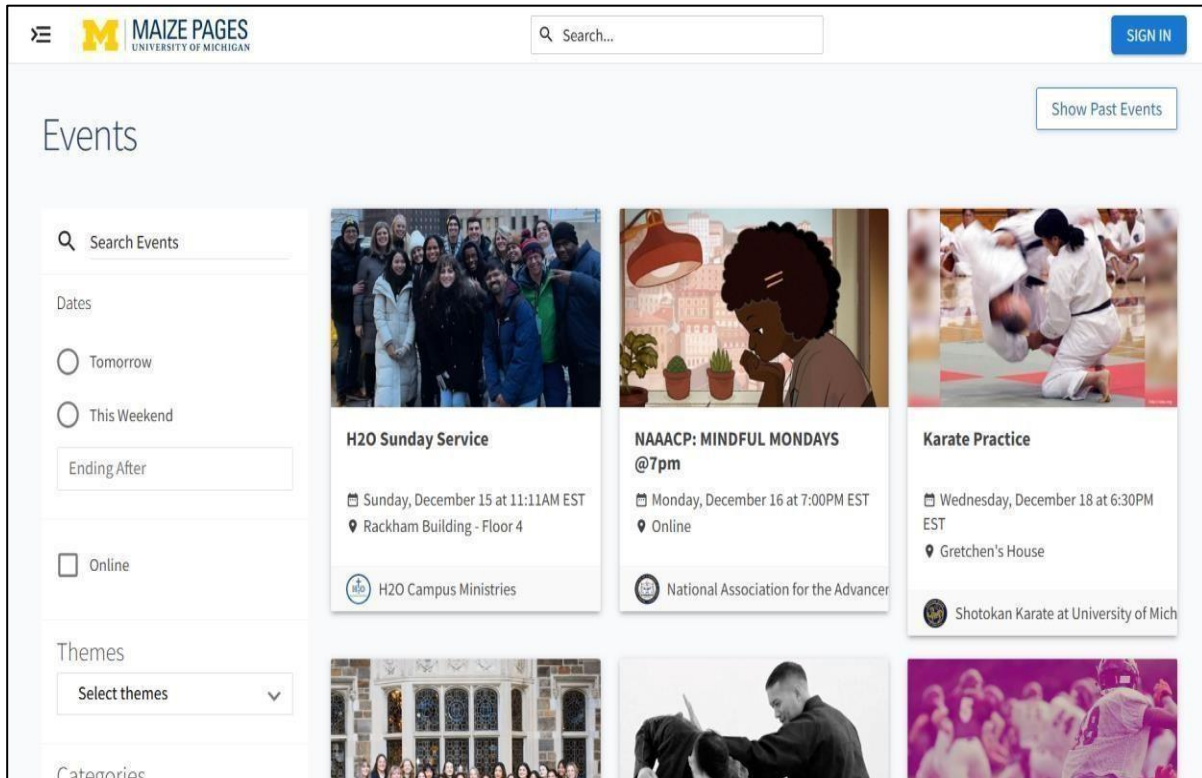


Figure 7 Maize Page Event List

[SIGN IN](#)

NAAACP: MINDFUL MONDAYS

@7pm

Date and Time

Monday, December 16 2024 at 7:00 PM EST to
Monday, December 16 2024 at 8:00 PM EST
Add To [Google Calendar](#) | [iCal/Outlook](#)

Location

Online

Online Location

[Join Event Online](#)

Description

This virtual weekly event, hosted by the NAACP, provides students with a supportive space to prepare for the week ahead. Each session includes study tables, guided meditation, relaxation music, and a dedicated breakout room for mental health check-ins and support. The goal is to help students feel centered, motivated, and empowered to tackle their academic and personal challenges with confidence.

RSVP to Event

[SIGN IN TO RSVP](#)

Figure 8 Maize Pages Event Details

[SIGN IN](#)

Events

[Show Upcoming Events](#)

☐ Online

Themes

Categories

Perks

Figure 9 Maize Pages Event End Details

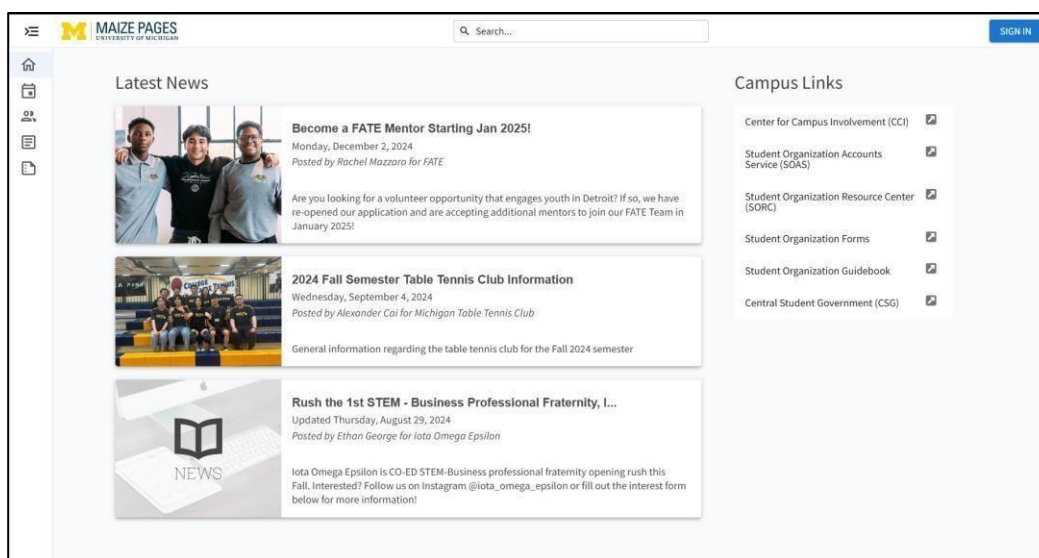


Figure 10 Maize Pages Latest News

2.3.2 University of Wisconsin Stout Connect System

The University of Wisconsin–Stout's CONNECT system is an online platform created to help students get more involved on campus. It serves as a central hub where students can explore different activities, events, and student organizations. The main goal of CONNECT is to encourage students to participate in extracurricular opportunities and to build a stronger campus community.

Using CONNECT, students can easily browse through a wide range of student organizations and find groups that match their interests. They can also check out upcoming events, making it simple to stay updated on campus activities. The platform has a user-friendly design, so it is easy for students to navigate and quickly find the information they need to participate and engage in campus life.

For student organization leaders, CONNECT provides tools to help them manage their groups. These tools allow leaders to keep track of member rosters, schedule and organize events, and communicate with members effectively. By simplifying these administrative tasks, CONNECT helps leaders spend more time focusing on improving their organization's activities and ensuring that their members have a positive experience.

CONNECT is also an effective tool for promoting campus events. Since all event details are gathered in one place, students can easily learn about different opportunities and decide how they want to participate. This centralized approach helps encourage more student involvement and creates a more unified and active campus environment.

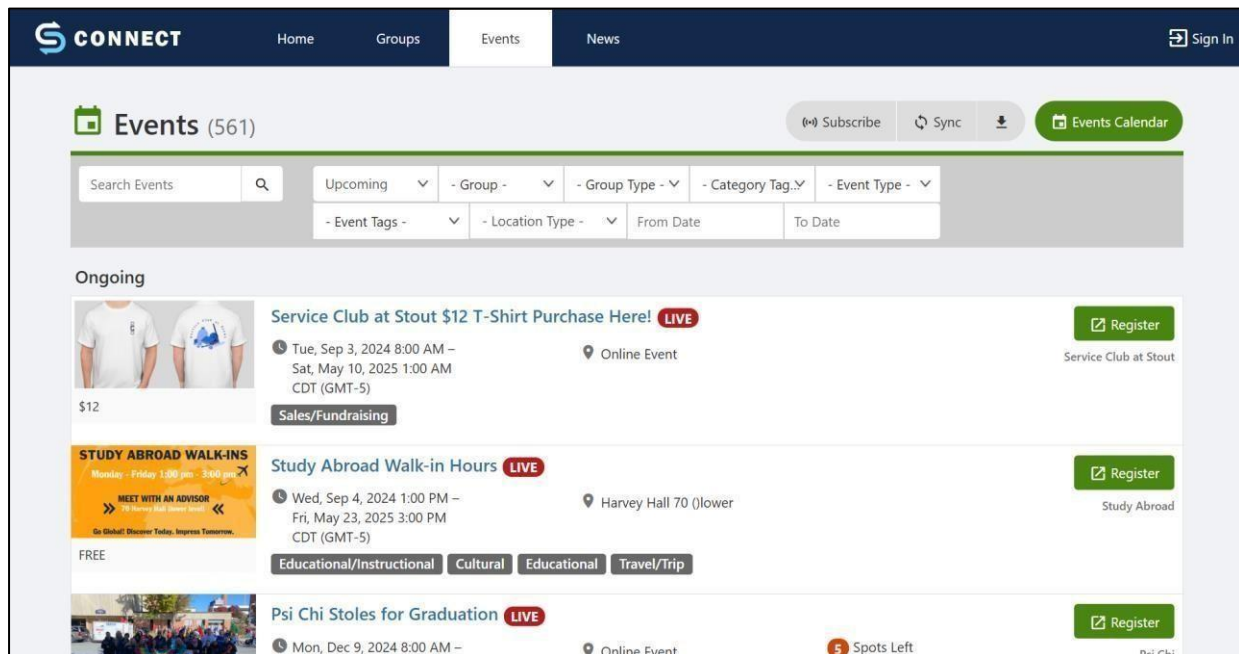


Figure 11 Stout Connect Landing Page

[Home](#)
[Groups](#)
[Events](#)
[News](#)
[Sign In](#)

Upcoming
Group
Group Type
Category Tag
Event Type
Event Tags
Location Type
From Date
To Date

Holiday Magnet Making LIVE

Thu, Dec 12, 2024
8 PM - 11 PM
CST (GMT-6)

Private Location (sign in to display) 7 Spots Left

Curran-Kranzusch-Tustison-Oetting Hall

Register

New Years Goal Kickstart TOMORROW

Fri, Dec 13, 2024
9 AM - 3 PM
CST (GMT-6)

Online Event

University Recreation

View

Ask a Career Coach TOMORROW

Fri, Dec 13, 2024
10 AM - 11:30 AM
CST (GMT-6)

Private Location (sign in to display)

Career Services

Register

Figure 12 Stout Connect Event List Page

[Back to List](#)

Calendar
Subscribe

Dec 8 - Dec 14, 2024
Week Month Today

Filters
All Events
Event type
Event tag
More

Study Abroad Walk-in Hours	Study Abroad Walk-in Hours	Study Abroad Walk-in Hours	Study Abroad Walk-in Hours	Study Abroad Walk-in Hours	Study Abroad Walk-in Hours	Study Abroad Walk-in Hours
1	1	1	1	1	1	1
BOWLING	PSICHI	PSICHI	PSICHI	PSICHI	UREC	DND
CONTINUED	CONTINUED	CONTINUED	CONTINUED	CONTINUED	CONTINUED	CONTINUED
4:00PM - 5:00PM CST (GMT-6)	8:00AM - 11:55PM CST (GMT-6)	8:00AM - 11:55PM CST (GMT-6)	8:00AM - 11:55PM CST (GMT-6)	8:00AM - 11:55PM CST (GMT-6)	9:00AM - 3:00PM CST (GMT-6)	3:00PM - 6:00PM CST (GMT-6)
Bowling Club UW Whitewater Warhawk Open	Psi Chi Stoles for Graduation	Psi Chi Stoles for Graduation	Psi Chi Stoles for Graduation	Psi Chi Stoles for Graduation	New Years Goal Kickstart	The Cracked Gem (Dnd Club)
10	10	10	10	10	10	10
UREC	SSA	UWCS	QUBE	NATURALAREAS	UREC	DND
CO-HOSTED	CO-HOSTED	CO-HOSTED	CO-HOSTED	CO-HOSTED	CO-HOSTED	CO-HOSTED
9:20AM - 7:00PM CST (GMT-6)	9:00AM - 10:00AM CST (GMT-6)	11:00AM - 12:30PM CST (GMT-6)	10:00AM - 1:00PM CST (GMT-6)	10:30AM - 4:00PM CST (GMT-6)	10:00AM - 11:30AM CST (GMT-6)	6:00PM - 9:00PM CST (GMT-6)
Minnesota Vikings Bus Trip	Stout Student Association 55th Congress	Ask a Career Coach	Hot Chocolate Wednesdays	Plant Sale! Natural Areas Club	Ask a Career Coach	Balance & Ash (Dnd Club)
13	13	13	13	13	13	13
PERFORMANCE	PSICHI	BOXING	MSS	CKTO	UREC	DND
CO-HOSTED	CO-HOSTED	CO-HOSTED	CO-HOSTED	CO-HOSTED	CO-HOSTED	CO-HOSTED
2:00PM - 3:00PM CST (GMT-6)	4:30PM - 5:30PM CST (GMT-6)	5:00PM - 7:00PM CST (GMT-6)	11:00AM - 12:30PM CST (GMT-6)	3:00PM - 4:00PM CST (GMT-6)	10:00AM - 12:00PM CST (GMT-6)	6:00PM - 9:00PM CST (GMT-6)
Stout Symphonic Band	Psi Chi New Officer Meeting	Blue Devil Boxing Club Practice	Ask a Career Coach	4th Curran Craft and Chill Study Time	EDJ Council Meeting	Inheritance (Dnd Club)
1	1	1	1	1	1	1

Figure 13 Stout Connect Event Calendar Page

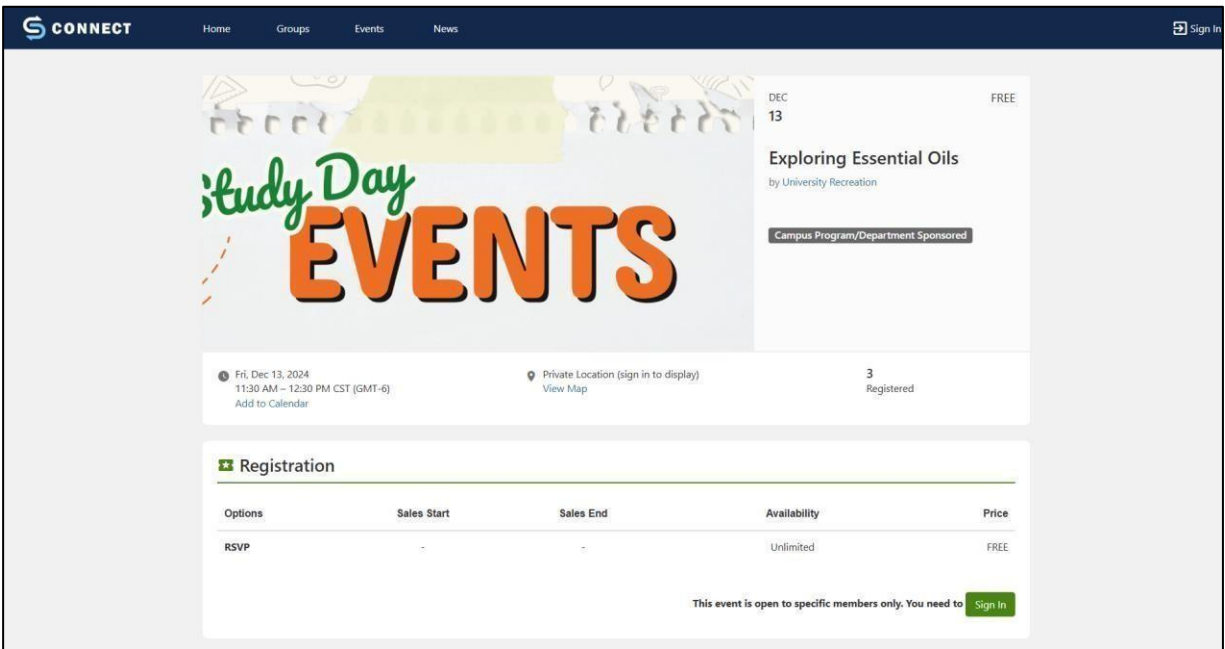


Figure 14 Stout Connect Event Details Page

2.3.3 Bristol Students' Union

Bristol SU (Students' Union) is a central part of student life at the University of Bristol. It offers a wide range of events, activities, and support services designed to improve the student experience. The Bristol SU events platform is designed to make it easier for students to find and participate in campus activities. The platform provides a categorized directory of events, enabling students to filter and explore activities that suit their interests, such as workshops, social events, or campaigns. This structure ensures that students can easily navigate the platform to discover opportunities that align with their preferences. Additionally, the platform includes an integrated ticketing and registration system, which simplifies the process of signing up for events or purchasing tickets. This makes it quick and hassle-free for students to secure their place at various activities.

Bristol SU also offers robust support for student-led event organizers. It provides resources and detailed guidelines on event planning, including how to set up events on their system, UnionCloud, and how to utilize the community spaces managed by the SU. These spaces, such as the Bristol SU Living Room and the Anson Rooms, host a wide range of events, from casual meetups to large-scale activities, giving organizers versatile options for their needs. By offering these tools

and facilities, Bristol SU empowers students to take initiative in creating and managing successful events.

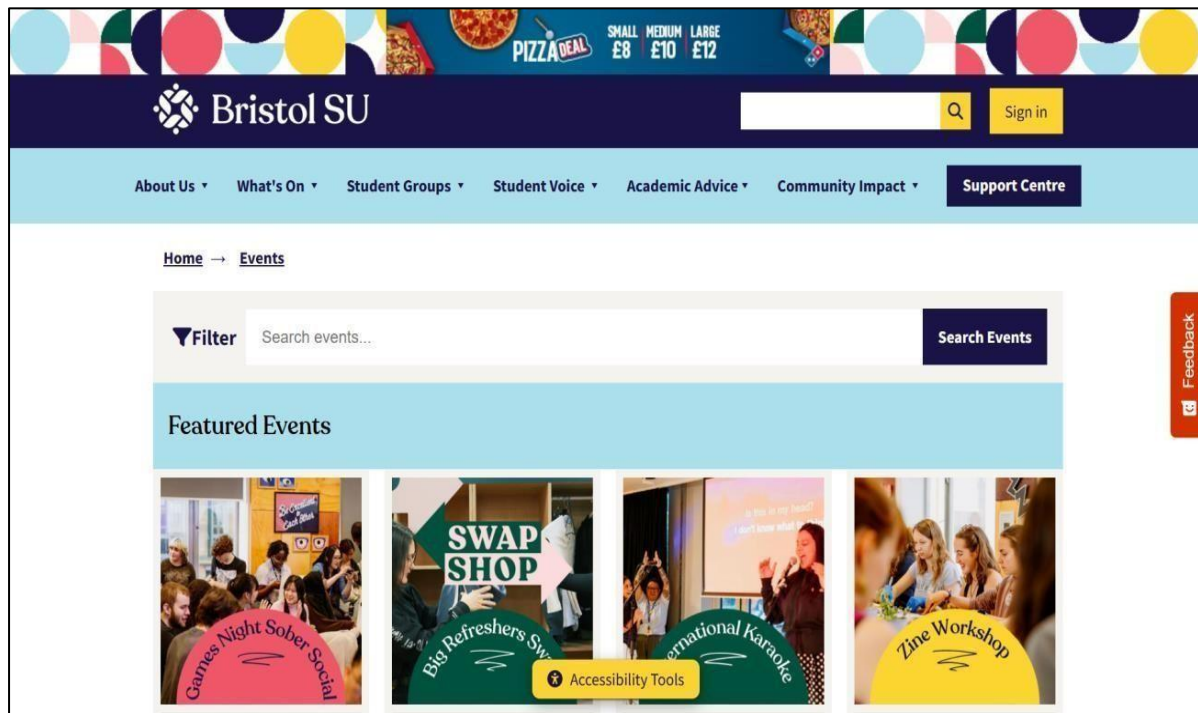


Figure 15 Bristol SU Event Page

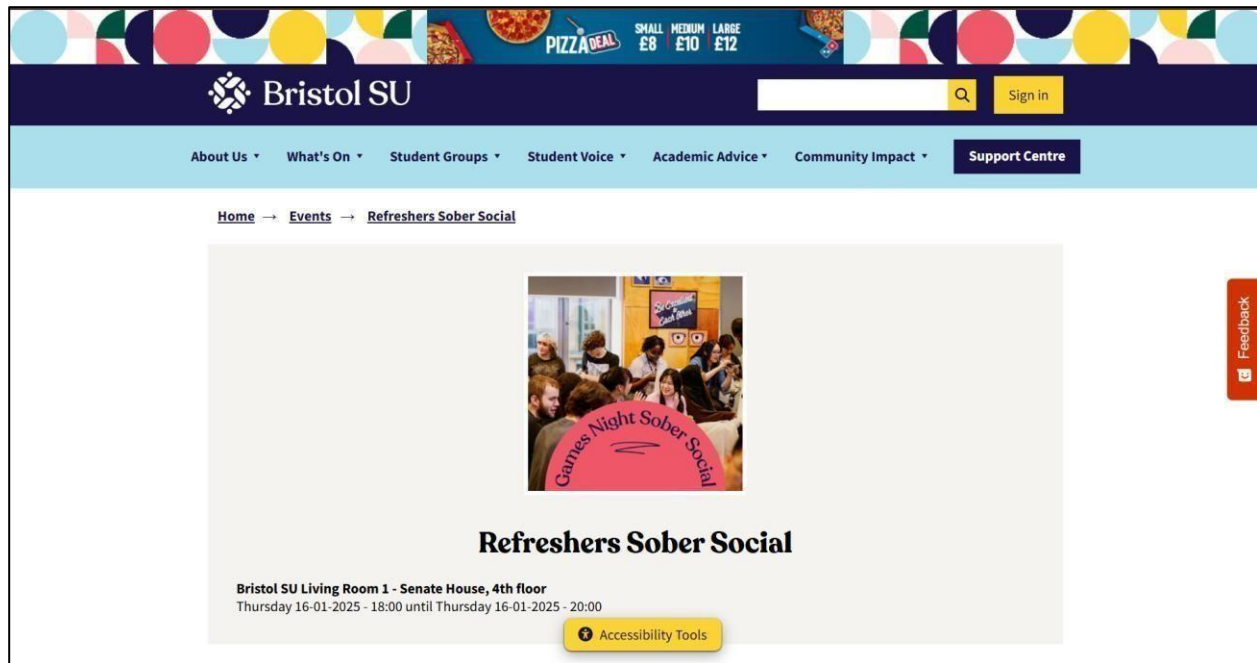


Figure 16 Bristol SU Event Detail Page 1

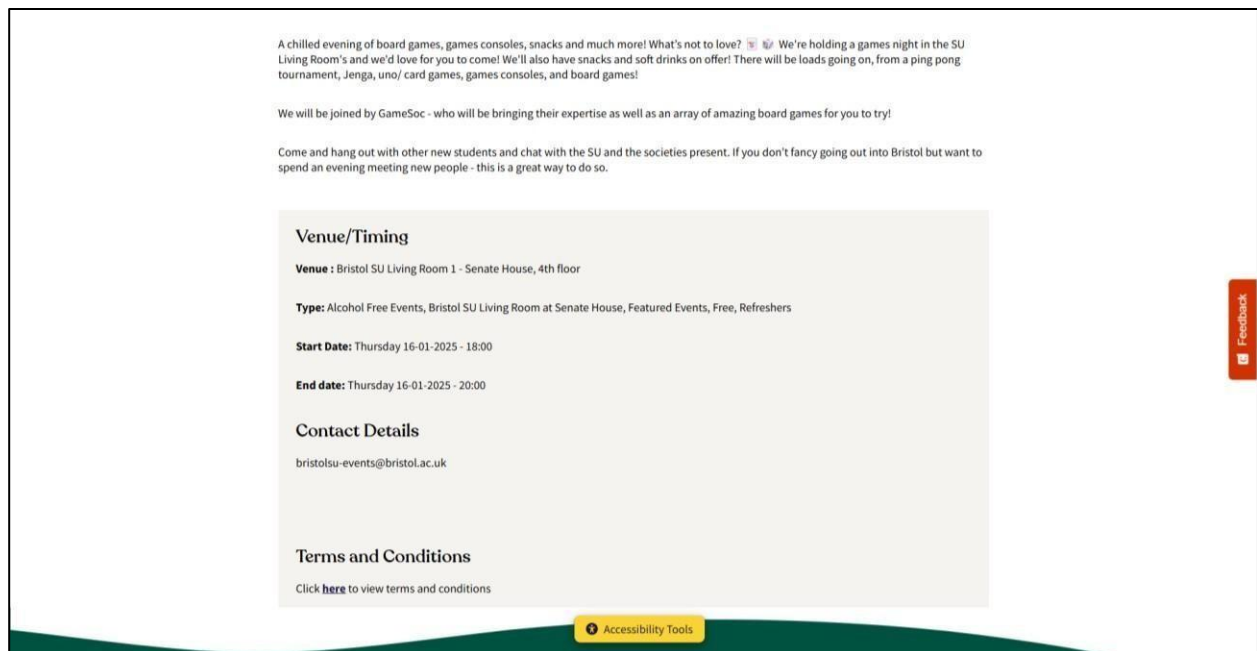


Figure 17 Bristol SU Event Detail Page 2

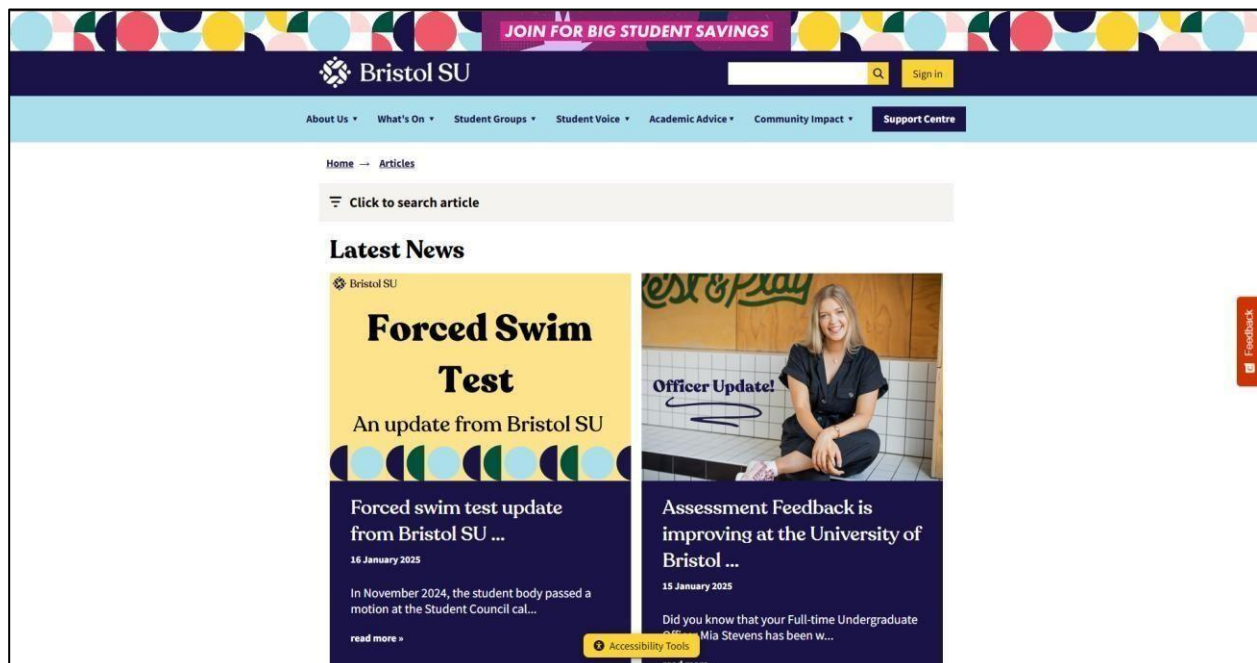


Figure 18 Bristol SU Event News Feed Page

2.4 Comparison between the Proposed System and the Existing Systems

The *UNIMAS EventHub* is designed to address the unique needs of Universiti Malaysia Sarawak by providing an integrated platform for event management, participation tracking, and merit point automation. This section compares the proposed system with three existing platforms, Maize Pages by the University of Michigan, Stout Connect by the University of Wisconsin-Stout and Bristol SU. The comparison focuses on functionality, features, and alignment with the specific goals of UNIMAS.

Below are Table 1 consisting of the comparison of Maize Pages, Stout Connect, Bristol SU and UNIMAS EventHub, Table 2 consisting of Strengths of the Proposed UNIMAS EventHub and Table 3 consisting of Limitations of Existing Systems:

Table 1: Comparison Table of Different Case Study for University Event Hubs.

Feature	Maize Pages (University of Michigan)	Stout Connect (University of Wisconsin-Stout)	Bristol SU (University of Bristol)	UNIMAS EventHub (Universiti Malaysia Sarawak)
Platform	Web Browser	Web Browser	Web Browser	Web Browser
Event Management	Comprehensive event management, including registration and tracking.	Provides a calendar of events with RSVP functionality.	Facilitates event discovery, registration, and ticketing through an organized event directory	Combines event registration, tracking and real-time updates
Student Organization Management	Enables organizations to manage rosters, schedules, and communications.	Facilitates club registration, membership management, and promotion.	Supports student groups by providing resources for event planning and promotion.	Organizes student events and categorizes by faculty or interest.
Attendance Tracking	Includes attendance tracking tools for student activities.	Offers RSVP tracking and attendance reporting	Allows organizers to monitor attendance through registration and ticketing systems.	Automated merit tracking for participation and engagement.
Mobile Access	Mobile-friendly interface for students and organizers.	Mobile responsive design but less interactive.	Mobile-friendly design, providing accessibility across devices.	Fully responsive, accessible across devices.
Integration with University Systems	Integrated with university databases for authentication and data sharing.	Integrated with university systems for authentication and event approvals.	Integrated with UnionCloud for authentication and event management, ensuring secure access and data management.	Deep integration with UNIMAS API for data syncing and updates.

led

Search and Discovery	Advanced search options for events, organizations, and categories.	Simple search functionality with fewer filter options.	Offers categorized search options for events by type.	Volunteer matching, merit point categorization, and map integration.
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Table 2: Strengths of the Proposed UNIMAS EventHub

Strength	Description
Merit Point Integration	UNIMAS EventHub features an automated merit point tracking system that ensures transparency and simplifies the integration process. This feature is unique compared to platforms like Maize Pages and Stout Connect, addressing the specific needs of UNIMAS students and staff.
Volunteer Matching	The platform includes a volunteer-matching feature that connects students with opportunities to participate in community and university events. This encourages active engagement and supports student development.
Integration with UNIMAS Systems	Deep integration with the UNIMAS API enables efficient authentication, secure data synchronization, and automated merit tracking. This integration improves efficiency for both students and university administrators.

Table 3: Limitations of Existing Systems

Strength	Description
Maize Pages	1. Does not include a merit point tracking system or volunteer support, both of which are critical for

	UNIMAS. 2. Advanced analytics features may be too resource intensive for smaller universities with limited budgets or technical infrastructure.
Stout Connect	1. Simplified features restrict its ability to handle complex event management tasks and advanced tracking needs. 2. Lacks tools for robust student engagement analytics and does not support merit point tracking.
Bristol SU	1. Focused more on event discovery and ticketing, with limited automation for tracking participation and merit points. 2. While it offers event planning resources, it does not include advanced integration features like API-based systems for seamless data synchronization and automated processes.

2.5 Software and Hardware

This section lists the hardware and software used in the development of the *UNIMAS EventHub* project.

Software

1. Visual Studio Code

A lightweight and versatile code editor, used for its ease of use and wide range of extensions that support multiple programming languages.

2. PHPStorm

A specialized IDE for PHP development, selected for its advanced features like debugging, code suggestions, and support for frameworks such as Laravel which is the main framework that will be used in this project.

3. GitHub

Used for version control, track changes, share code, and manage project workflows efficiently.

Hardware

1. Lenovo ThinkPad E14 GEN 5

A light and portable laptop, easy to be used for daily coding, debugging, and project management tasks.

2. MSI GS66 15.6

Used for resource-intensive tasks like interface design and testing.

3. Samsung Galaxy S24 Ultra

Used for testing the application's mobile responsiveness and ensuring compatibility with Android devices.

2.6 Chapter Summary

This chapter reviewed the current methods and systems for managing events and engaging students, highlighting their features, limitations, and how they relate to the development of the UNIMAS EventHub. The comparison of systems like Maize Pages and Stout Connect provided useful ideas about effective features and areas that need improvement. The hardware and software selected for this project were also explained, showing how they will support the development and testing process.

The information gathered in this chapter forms a strong foundation for designing and building the UNIMAS EventHub. By addressing the issues in current systems and using the strengths of existing platforms, the proposed system aims to create a simple and effective solution for the UNIMAS community.

CHAPTER 3: REQUIREMENTS, ANALYSIS AND DESIGN

3.0 Introduction

This chapter elaborates on the requirements and design framework of the UNIMAS EventHub project. The goal of this chapter is to ensure the system is designed in a way that meets the needs of the users while addressing the challenges identified earlier in the project. It provides an overview of the software requirements, outlines methods used to collect system requirements and describes the design approach. Detailed diagrams and descriptions are included to visualize system architecture and functionality, ensuring alignment with the project objectives and addressing key challenges.

3.1 Requirements Analysis

This section describes the process of analysing and defining the requirements for the UNIMAS EventHub project. By understanding the needs of students and event organizers, this analysis ensures the system design aligns with user expectations and project objectives. It includes both technical requirements for development and user-centred features for functionality and usability.

3.1.1 System and Software Requirements

The UNIMAS EventHub project requires a set of specialized tools and technologies to support its core functionalities. These software requirements are essential for developing a scalable backend, a user-friendly frontend, and easy integrations for event management, merit tracking, and location services.

For backend development, the **Laravel Framework** is utilized. Laravel offers powerful features, scalability, and efficient management of application logic and server-side operations, making it a good choice for handling the platform's backend needs. To manage the database, such as event details, user information, and merit points, the system uses phpMyAdmin Database. This database system provides a reliable and scalable solution for storing and organizing the platform's data.

For merit tracking and verification, the platform uses QR code libraries. These enable the scanning and verification of attendance and merit points, ensuring the process is both accurate and transparent.

The frontend of the UNIMAS EventHub platform was developed using **HTML5**, **CSS3**, and **JavaScript**. These languages were used to create a responsive and easy-to-use interface that works well on both computers and mobile devices. They helped ensure that users could access the system smoothly with any kind of device they used.

To improve the design and speed up development, the project used **Bootstrap version 5.3.0**, a popular CSS framework for building mobile-friendly websites. A ready-made Bootstrap theme was chosen as a base design and was later customized to match the platform's color scheme and style. This helped keep the overall look of the platform clean and consistent.

The platform also used **PHP (Hypertext Preprocessor)** as its main programming language. PHP is a server-side language that is commonly used in web development. It is flexible and works well with the frontend to handle user actions and display information.

In addition, the system includes a payment feature through **ToyyibPay**, a Malaysian-based online payment gateway. ToyyibPay was integrated to allow secure and simple payment processing for paid events. This feature makes it convenient for users to complete payments directly within the platform, improving the overall event registration experience.

Version control and collaboration are managed through **GitHub**. GitHub enables the development team to track changes, collaborate effectively, and maintain a well-organized codebase throughout the project.

3.1.2 Hardware Requirements

The UNIMAS EventHub project requires reliable and efficient hardware to support the development, testing, and deployment processes. These hardware components ensure great performance during coding, debugging, and system testing, as well as compatibility with various user devices as shown in Table 4: Hardware Requirements.

Table 4: Hardware Requirements

Strength	Description
----------	-------------

Lenovo ThinkPad E14 GEN 5	A lightweight and portable laptop used for daily coding, debugging, and project management tasks.
MSI GS66 15.6	A high-performance laptop designed for resource-intensive tasks, including interface design and testing.
Samsung Galaxy S24 Ultra	A smartphone used for testing the mobile responsiveness and functionality of the platform on Android devices.

3.1.3 Functional Requirements

Functional Requirements are the specific behaviors, tasks, or functions a system must perform to meet the needs of its users. These requirements define what the system should do, focusing on the features and capabilities it must provide. This section will explain on the user requirement specifications and the restriction and constraints.

3.1.3.1 User Requirement Specification

The user requirement specification outlines the specific needs and expectations of the endusers of the UNIMAS EventHub system as shown in Table 5: User Requirement Specification.

Table 5: User Requirement Specification

Requirement	Description
Event Discovery	Students should be able to browse, filter, and search for events based on type, faculty, or organizer preferences.

Registration and RSVP	Users must have the ability to register for events and RSVP directly through the platform.
Merit Point Tracking	The system should automatically calculate and display merit points earned from event participation.
Volunteer Matching	Students must have access to a section where they can find and apply for volunteer opportunities at events.
Event Management Org	Event organizers must be able to create, edit, and manage event details, including schedules and participant lists.
Location Integration	Events should include location details with Google Maps integration for easy navigation.
Cross-Device Accessibility	The platform must be accessible across various devices, including desktops, tablets, and smartphones.

3.1.3.2 Restriction and Constraints

The development of the UNIMAS EventHub system has to work within certain limitations and boundaries. These restrictions can affect how the system is designed, built, and used. Below are the key restrictions and constraints.

One important limitation is **time constraints**. The project needs to be completed within a specific period, which means there is limited time for extra development or adding less important features. The focus must remain on delivering the most essential functions first.

There are also **technical limitations**, especially when it comes to integrating the system with the UNIMAS API. The existing infrastructure and available documentation might require adjustments, which could slow down development. Additionally, the system must ensure **device compatibility**, meaning it must work well on different devices like smartphones, tablets, and computers.

Another important consideration is **data privacy regulations**. The platform must follow laws like the Personal Data Protection Act (PDPA) to keep user data safe and secure. This means using tools like secure login systems, data encryption, and careful handling of personal information.

The platform's **internet dependency** is another challenge. It needs a stable internet connection to work, which could be a problem for users in areas with poor connectivity. To address this, the system should be optimized to use less data and work efficiently even with slower internet.

Scalability constraints are also a factor. At the start, the system might only be able to support a limited number of users at the same time due to resource limitations. Future updates will need to make the platform capable of handling more users as its popularity grows.

3.1.4 Non-Functional Requirements

Non-functional requirements define the quality attributes, performance, and operational standards that the UNIMAS EventHub must meet. These requirements ensure that the system operates effectively, remains reliable, and delivers a satisfactory user experience. Unlike functional requirements, they focus on how the system performs rather than what it does as shown in Table 6: Non-Functional Requirements below.

Table 6: Non-Functional Requirements

Category	Description
Performance	The system should handle at least 500 concurrent users without significant performance degradation.
Scalability	The platform must be scalable to accommodate an increasing number of users and events as the university grows.
Reliability	The system should maintain an uptime of 99.5%, ensuring availability for students and organizers.
Usability	The interface must be intuitive and easy to use, requiring minimal training for students and event organizers.

Security	The platform must implement secure login mechanisms, data encryption, and regular vulnerability assessments to protect user information.
Accessibility	The platform should comply with accessibility standards (e.g., WCAG 2.1) to support users with disabilities.
Compatibility	The system must be compatible with popular browsers (e.g., Chrome, Firefox, Safari) and devices (desktop, tablet, mobile).
Maintainability	The system codebase should follow clean coding practices and include proper documentation to simplify maintenance and updates.
Response Time	Key operations, such as page loading and event registration, should be completed within 2 seconds under normal conditions.
Backup and Recovery	The platform must have regular automated backups and a recovery mechanism to minimize data loss in case of failure.

3.2 Agile Methodology Integration with Surveys and Findings

The Agile methodology, specifically the Scrum framework, forms the foundation of the UNIMAS EventHub's development, ensuring adaptability and user-centered design. This iterative approach is linked to the surveys and findings gathered from students and faculty, making them pivotal in shaping the project's goals, features, and implementation strategy.

3.2.1 Leveraging Surveys for Agile Development

A survey-based approach was utilized to identify the event management needs and preferences of students and faculty at Universiti Malaysia Sarawak (UNIMAS). Questionnaires were distributed to potential users, and informal feedback was gathered to gain deeper insights into their challenges

and expectations. A total of 24 responses were collected, forming a foundational dataset for guiding the development of the UNIMAS EventHub. The survey covered the following key aspects:

1. Frequency of Participation in Campus Events
2. Types of Campus Events Attended
3. Current Methods of Discovering Events
4. Device Preferences for Accessing Event Information
5. Importance of Platform Features
6. Preferred Platform Type
7. Satisfaction with Current Methods
8. Additional Suggestions

3.2.2 Survey Findings

The survey targeted students and faculty at Universiti Malaysia Sarawak (UNIMAS) to gather insights into their experiences with campus events and expectations for a centralized event management platform. The findings reveal key trends and challenges, which are elaborated in Figures below:

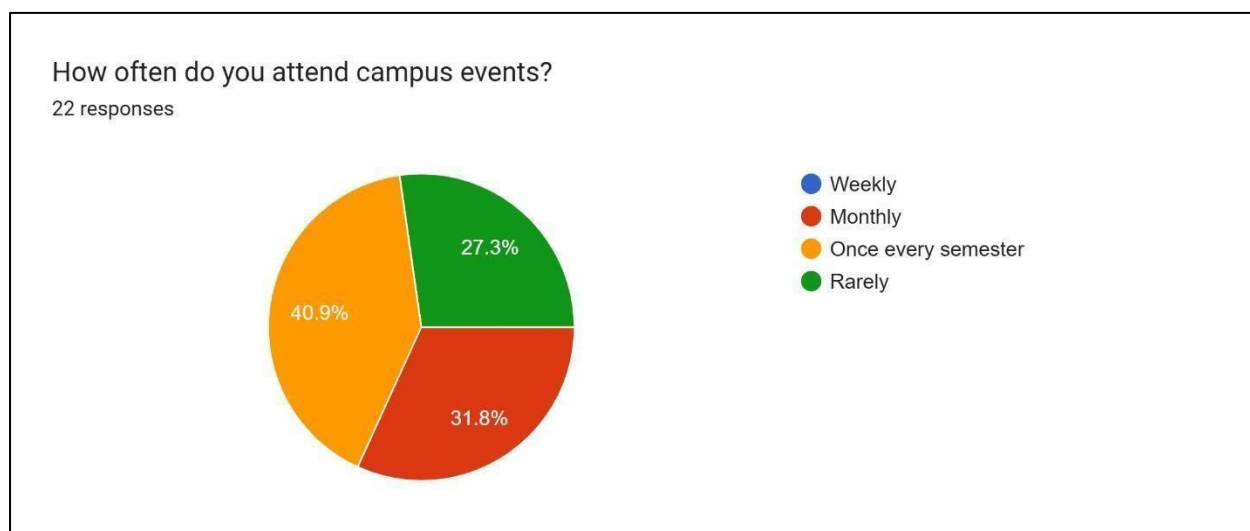


Figure 19: Pie Chart of Participation Frequency in Campus

1. Frequency of Participation in Campus Events

Figure 19 shows that most respondents reported occasional participation in campus events, with the majority attending events once every semester. However, a significant portion of participants stated that they attended monthly, while a smaller number indicated they rarely participate in events. This low engagement rate points to the need for strategies to improve accessibility and event visibility, as well as features that encourage regular participation, such as tailored notifications and incentives.

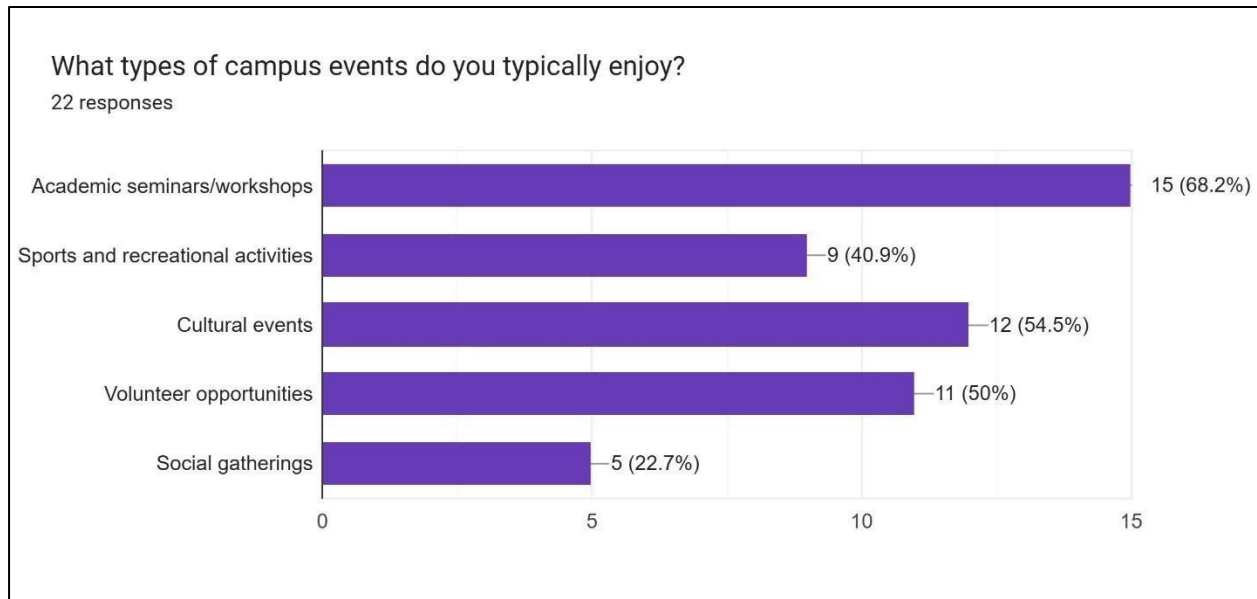


Figure 20: Bar Chart of Types of Campus Events Attended

2. Types of Campus Events Attended

The most popular types of events among respondents are academic seminars and workshops, which were favored by 68.2% of participants as shown in Figure 20. Other commonly attended events include cultural activities (54.5%), volunteer opportunities (50%), and sports or recreational events (40.9%). Social gatherings were less popular, with only 22.7% of respondents expressing interest. These preferences highlight the importance of prioritizing academic and skilldevelopmentrelated events in the platform, while also ensuring cultural and recreational activities are adequately represented.

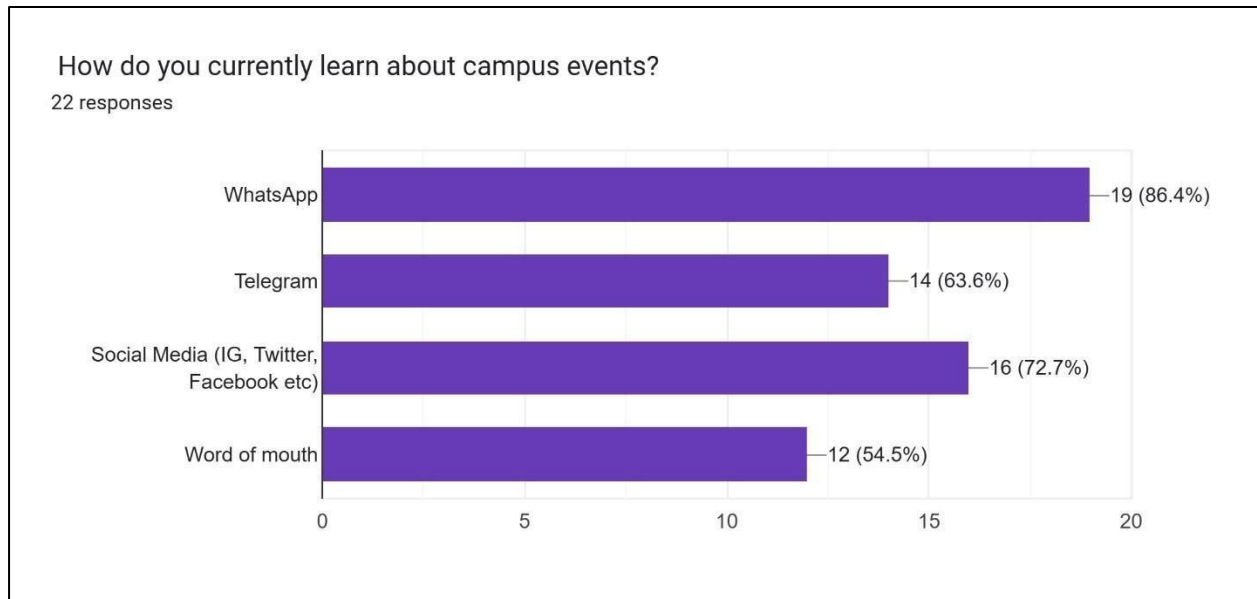


Figure 21: Bar Chart of Current Methods of Discovering Event

3. Current Methods of Discovering Events

Currently, most respondents rely on WhatsApp (86.4%) and Telegram (63.6%) to learn about campus events, with social media platforms such as Instagram, Twitter, and Facebook being the next most common source as shown in Figure 21. Word of mouth and email notifications also play a role but are less frequently utilized. Despite these various channels, 54.5% of participants find it challenging to stay informed due to fragmented communication methods and scattered event announcements. This emphasizes the need for a centralized platform like UNIMAS EventHub to consolidate event information and make it more accessible.

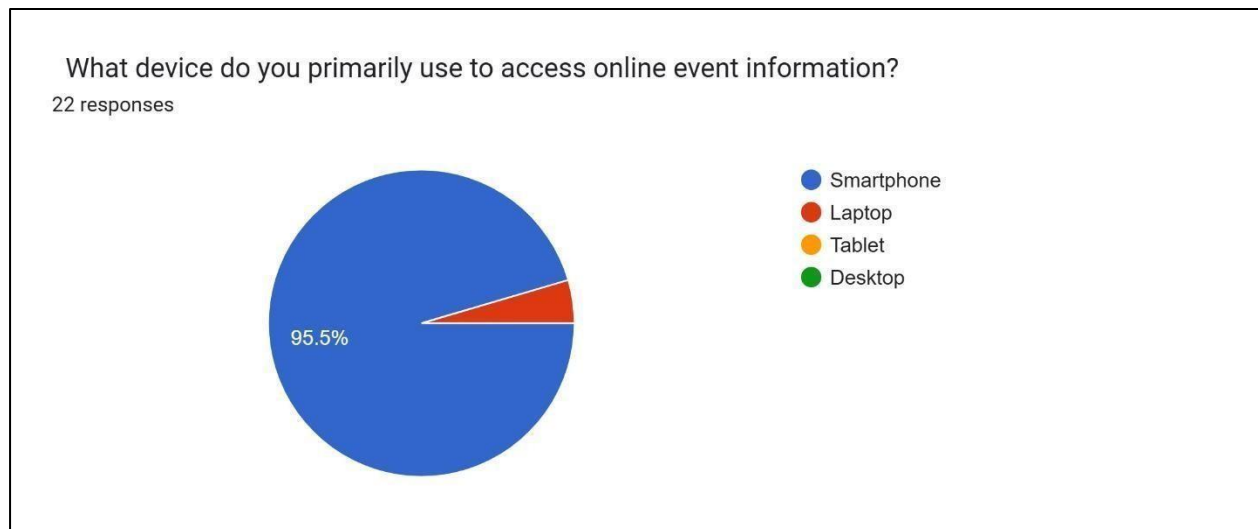


Figure 22: Pie Chart of Device Preferences for Accessing Event

4. Device Preferences for Accessing Event Information

The survey results in Figure 22 indicate that smartphones are the primary device used by over 90% of respondents to access online event information. A minority reported using laptops or other devices. This overwhelming preference for smartphones underlines the necessity of prioritizing a mobile-friendly design for the EventHub platform. A dedicated mobile app or a highly responsive web-based interface would best align with user habits and enhance accessibility.

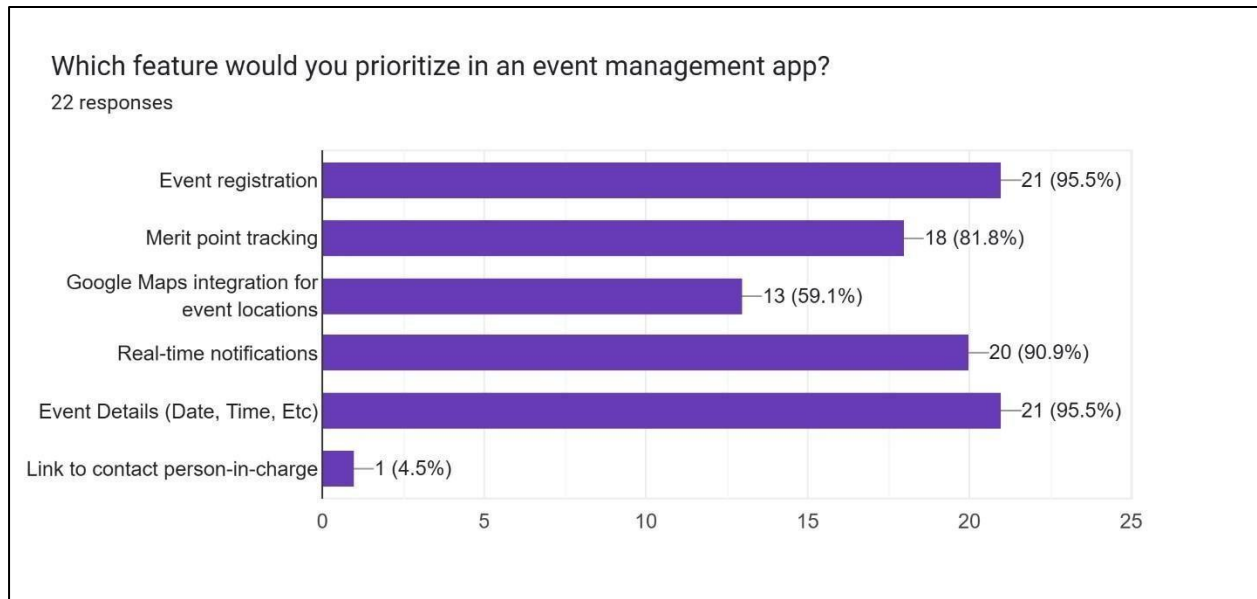


Figure 23: Bar Chart of Importance of Platform Features

5. Importance of Platform Features

Respondents placed a high value on several features, with 90.9% rating real-time updates for event changes or cancellations as very important as shown in Figure 23. Automated merit point tracking was also a priority for 81.8% of participants, while 95.5% highlighted the importance of event registration. Other features, such as event registration and Google Maps integration for navigation, were similarly viewed as critical. These findings reinforce the need for a platform that combines these functionalities to enhance user convenience and engagement.

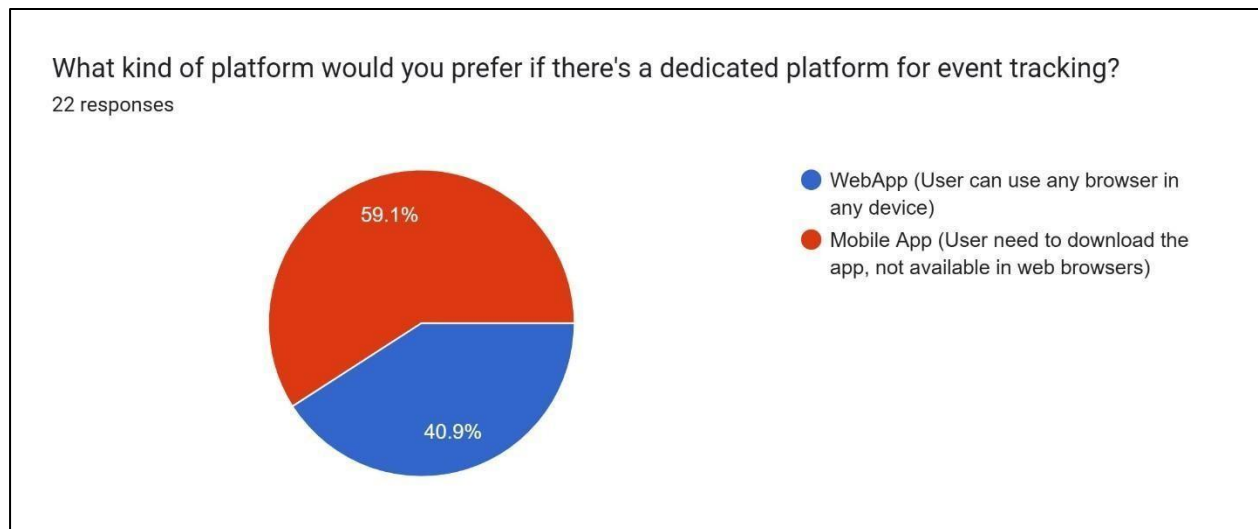


Figure 24: Pie Chart of Platform Preferences for Accessing Event

6. Preferred Platform Type

In Figure 24, when asked about their preferred platform type, 55% of respondents expressed a preference for a dedicated mobile app, while 45% favoured a web-based platform accessible through browsers. This near-even split suggests that offering both a mobile app and a responsive web interface would cater to the diverse preferences of users and ensure broad adoption of the platform.

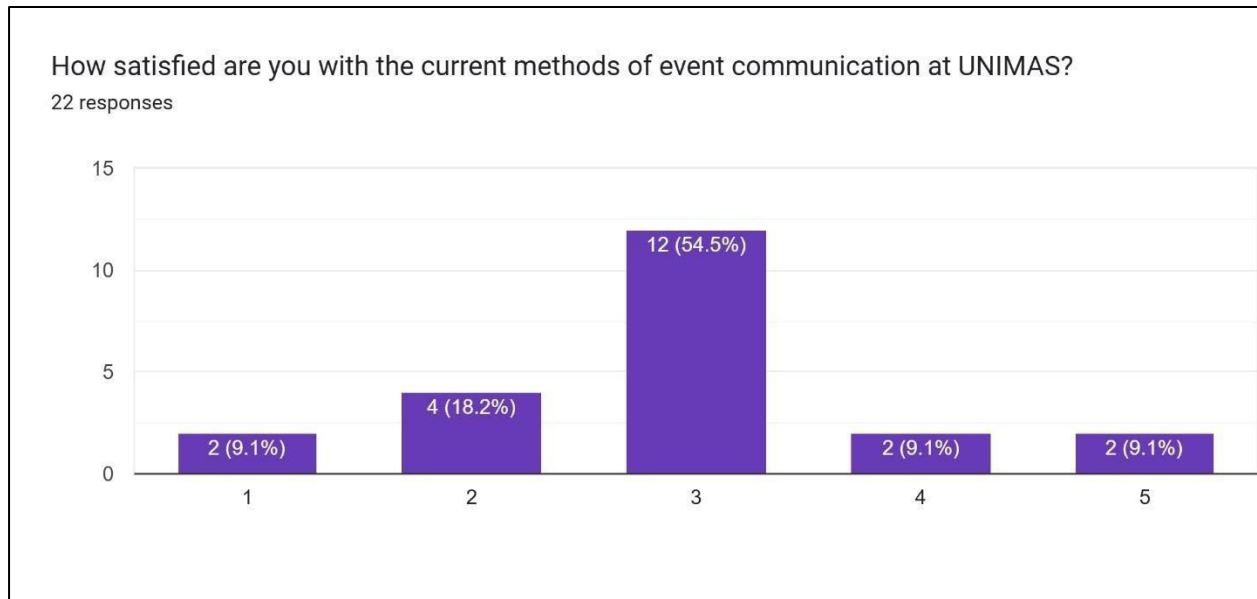


Figure 25: Bar Chart of Satisfaction with Current Methods

7. Satisfaction with Current Methods

Respondents expressed moderate dissatisfaction with existing communication methods for event announcements as shown in Figure 25. Many cited inefficiencies in receiving timely updates and difficulties in tracking relevant information. This dissatisfaction further validates the need for a more effective communication tool, such as the UNIMAS EventHub, which can provide timely notifications and a centralized hub for event-related information.

Do you have any additional suggestions or features you would like to see in the UNIMAS EventHub?

7 responses

No.

I hope there is a feedback function and an assistance function in the app.

no

No

The ability to browse for available events

Meow themed

Sync events with Google Calendar, Outlook, or Apple Calendar for easy planning.

Figure 26: Suggestions for UNIMAS EventHub features

8. Additional Suggestions

As shown in Figure 26 above, participants provided several valuable suggestions for additional features in the EventHub platform. These included integrating feedback and assistance functions to improve user experience and allowing users to sync events with calendars such as Google or Apple Calendar. Addressing these suggestions would make the platform more usercentric and functional.

3.3 System Design

The system design for the UNIMAS EventHub outlines the structure and components needed to achieve its objectives. It focuses on creating a modular and scalable architecture that supports efficient event management, user engagement, and real-time updates. This section includes visual representations such as Context Diagram and Data Flow Diagram Level 1 to illustrate how the

system processes data and interacts with users, administrators, and the database. By designing a clear and organized framework, the system ensures functionality, usability, and maintainability.

3.3.1 Overview

The system design emphasizes modularity and scalability, with key components being: 1.

Frontend: Developed using responsive design principles with Bootstrap

2. **Backend:** Managed by Laravel.

3. **Database:** php MyAdmin for data storage and retrieval.

3.3.2 System Architecture

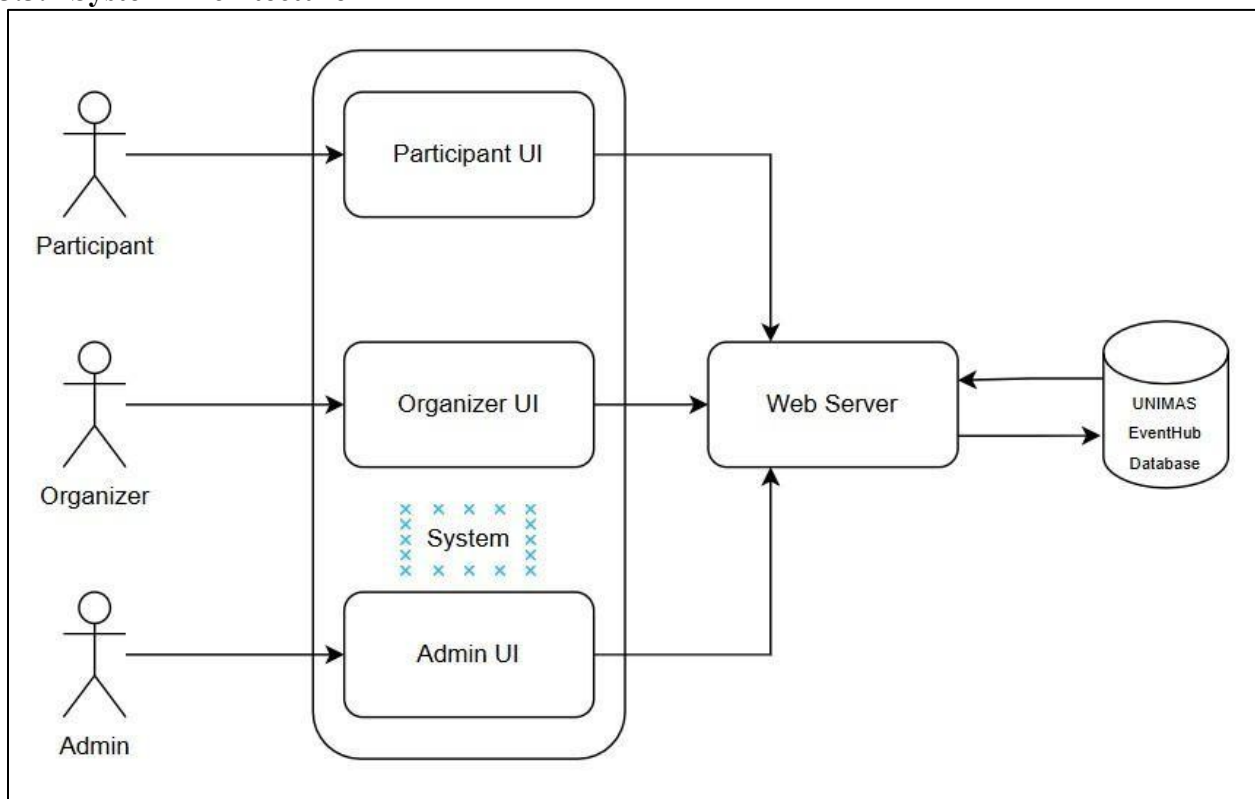


Figure 27: System Architecture for UNIMAS EventHub

The system architecture for the UNIMAS EventHub platform demonstrates the seamless interaction between its various components, ensuring efficient event management and user

engagement. At the core of the architecture are the users, categorized into three roles: students, event organizers, and administrators. Students use the platform to discover events, register for them, track their attendance, and earn merit points. Event organizers are responsible for managing event creation, tracking attendance, and overseeing participant engagement. Administrators, on the other hand, maintain the system, oversee platform data, and ensure the smooth operation of all processes.

The system provides three main interfaces: the Participant UI, the Admin UI and the Organizer UI. The User UI (Participant UI) serves as the primary interface for students and event organizers, allowing them to interact with the platform's functionalities. The Admin UI, designed for administrators, provides tools to manage the system, including data oversight, user management, and system maintenance while the Organizer UI handles event management of their own organization.

At the heart of the platform is the Web Server, which acts as the central hub connecting all components. It processes requests from the user interfaces and ensures smooth communication with external services and the database.

The platform's data is stored in the UNIMAS EventHub Database, a repository that manages user accounts, event details, attendance records, and merit points. The database ensures real-time data synchronization and efficient retrieval for all operations.

3.3.3 Context Diagram

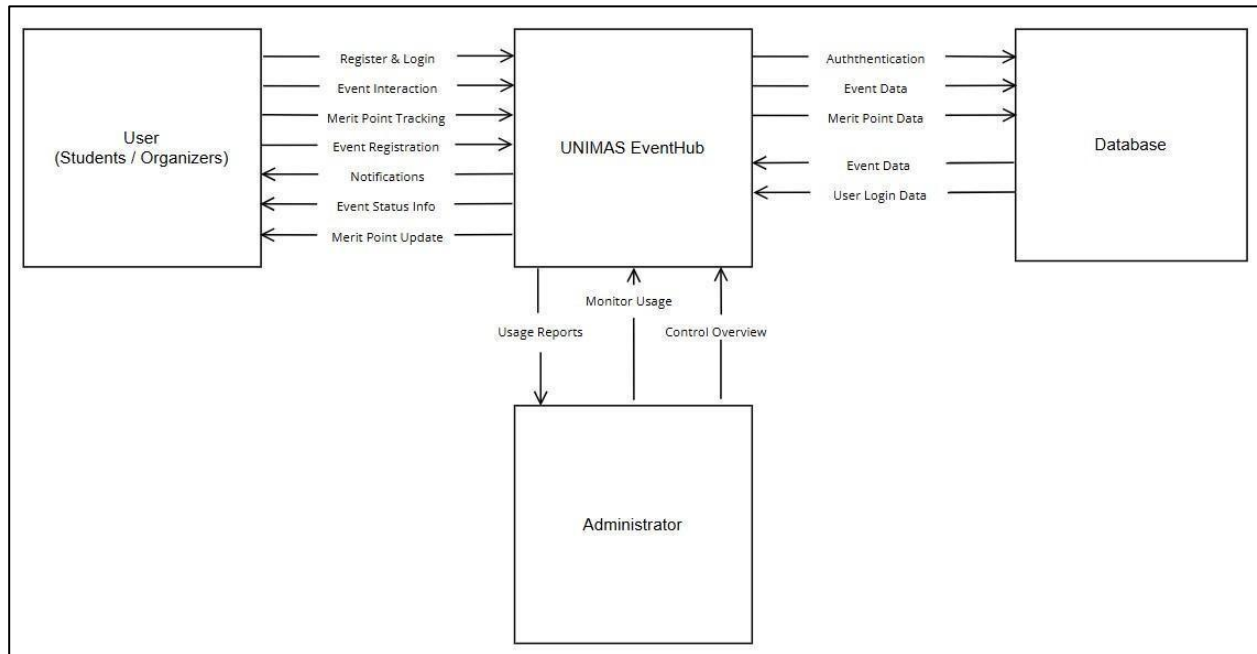


Figure 28: Context Diagram for UNIMAS EventHub

The context diagram for the UNIMAS EventHub system shows how the system interacts with its main users and components. It highlights the flow of data between the system and external entities, explaining how the system handles inputs, processes, and outputs. Table 7, Table 8 and Table 9 will explain each key activities in the context diagram above.

Table 7 describes the key activities performed by the users of the system, such as registering for events, logging in, and tracking merit points. It highlights the interaction between the **Users** (Students and Organizers) and the **UNIMAS EventHub**, showcasing how data flows between the user interface and the backend system. The table explains the input actions (e.g., event registration) and the corresponding system responses (e.g., confirming registration or updating merit points).

Table 7: Table of Processes

Process	Source	Destination	Details
Register & Login	Users (Students/Organizers)	UNIMAS EventHub	Users log in to the system using their credentials. UNIMAS EventHub validates these credentials through the database. If authentication is successful, users gain access to the platform's functionalities.
Event Interaction	Users	UNIMAS EventHub	Users browse and interact with events by viewing details, filtering events, or marking favourites. The system retrieves event details from the database and provides real-time updates to users.
Merit Point Tracking	Users	UNIMAS EventHub	Users can view their accumulated merit points. The system fetches merit point data from the database and displays it on the user dashboard.
Event Registration	Users	UNIMAS EventHub	Users register for events. The system updates the event data in the database to reflect the new participant and provides a confirmation to the user.
Notifications	UNIMAS EventHub	Users	Notifications about event updates, reminders, or merit point updates are sent to users. These are triggered by system events and delivered through the user interface.
Event Status Info	UNIMAS EventHub	Users	Users receive real-time updates on event statuses (e.g., canceled, postponed, completed). The system retrieves this data from the database and displays it to users.

Merit Point Update	UNIMAS EventHub	Users	After event participation, the system updates users' merit points in the database and notifies users of the changes.
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Table 8: Table of Database Interactions

Interaction	Source	Destination	Details
Authentication	UNIMAS EventHub	Database	The system verifies user credentials during login by querying the database for matching records.
Event Data Retrieval	UNIMAS EventHub	Database	When users interact with events, the system fetches event-related data (e.g., title, location, participants) from the database.
Merit Point Data	UNIMAS EventHub	Database	The system retrieves merit point data for display on the user dashboard.
Event Data Update	UNIMAS EventHub	Database	After event registration or updates, the system modifies event data in the database (e.g., adding new participants or updating event details).

User Login Data	UNIMAS EventHub	Database	Tracks and logs user login attempts and access details for security and analytics purposes.
------------------------	--------------------	----------	---

Table 8 outlines how the UNIMAS EventHub communicates with the Database to store, retrieve, and update information. It describes the backend processes, such as verifying user credentials during login, fetching event details, and logging user activity. The database serves as the central repository for managing user data, event details, and merit points, ensuring the platform operates seamlessly.

Table 9: Table of Administrator Functions

Function	Source	Destination	Details
Monitor Usage	Administrator	UNIMAS EventHub	The system verifies user credentials during login by querying the database for matching records.
Control Overview	Administrator	UNIMAS EventHub	When users interact with events, the system fetches event-related data (e.g., title, location, participants) from the database.
Usage Reports	UNIMAS EventHub	Administrator	The system retrieves merit point data for display on the user dashboard.

Table 9 explains the role of the Administrator in overseeing the platform. It details how administrators monitor usage, generate reports, and make system adjustments, such as managing events and users. The table emphasizes the administrative tasks necessary for maintaining the system, including data analysis and control over platform operations.

3.3.4 Data Flow Diagram (DFD) Level 0

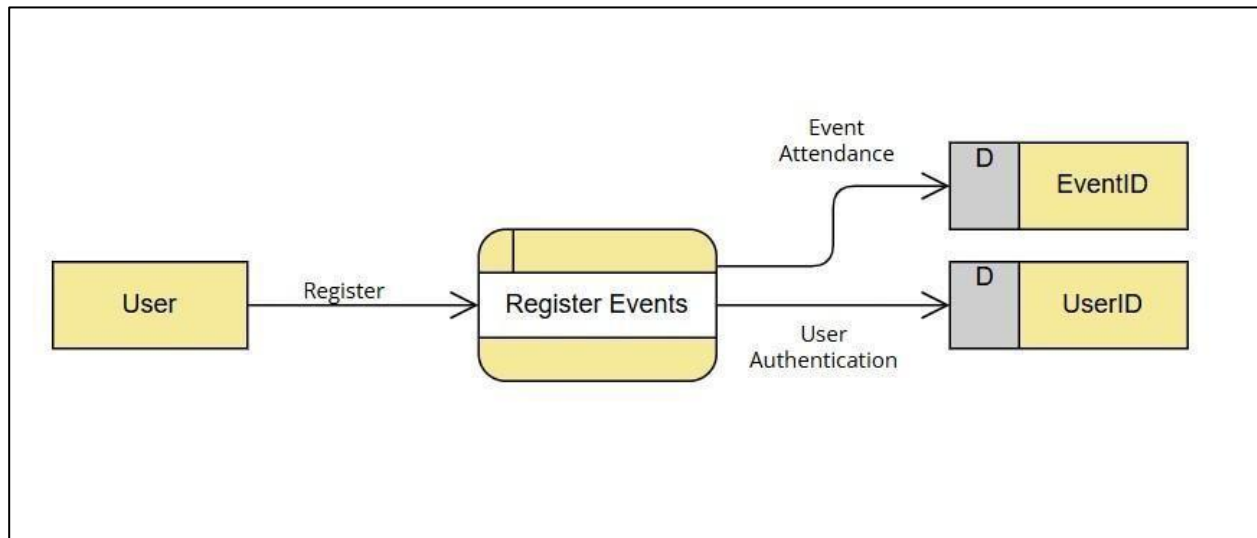


Figure 28: Data Flow Diagram Level 0 for UNIMAS EventHub

1. Components

Table 10 below explains the roles of each component in the system. It defines the external entities (Users), the central process (Register Events), and the two primary data stores (EventID and UserID). Each component is essential for managing event registrations, user authentication, and attendance tracking, forming the building blocks of the UNIMAS EventHub system.

Table 10: Table of Components in DFD Level 0

Component	Description
-----------	-------------

User	Represents students and organizers who interact with the system by registering for events and confirming their attendance.
Register Events	The main process in the system, responsible for handling user registration, verifying credentials, and logging attendance for events.
EventID	A data store that holds unique identifiers for each event, storing event-related details such as attendance and registration data.
UserID	A data store that holds unique identifiers for each user, storing credentials and event participation records for authenticated system interactions.

2. Processes

Next, table 11 below provides a detailed breakdown of the processes within the system. It highlights how the Register Events process handles user interactions, including authentication and attendance logging. It also explains the inputs and outputs associated with each process, showing how data flows between the system and its users.

Table 11: Table of Process in DFD Level 0

Process	Input	Output	Details
---------	-------	--------	---------

Register Events	User registration data	Event attendance data, User authentication	The process takes user-provided registration data, authenticates the user, and logs attendance by linking the UserID to the EventID.
User Authentication	User credentials	Access permissions or error message	Verifies the UserID credentials to ensure the user is authorized to register for events or access attendance functionalities.
Event Attendance	EventID and UserID	Attendance records	Links the UserID with the corresponding EventID to track event participation and maintain accurate attendance records.

3. Structure

Next, table 12 below describes the overall structure and flow of the data in the Level 0 DFD. It outlines the role of inputs (from Users), the core process (Register Events), outputs (e.g., attendance records), and data stores (EventID and UserID). The structure ensures that the system operates efficiently and that all interactions are properly logged and managed.

Table 12: Table of Structure in DFD Level 0

Component	Role in Diagram
Inputs	Users provide data for event registration, which is processed by the central system (Register Events).
Processes	The Register Events process acts as the core hub for handling user requests and interactions with the system.

Outputs	A data store that holds unique identifiers for each user, storing credentials and event participation records for authenticated system interactions.
Data Stores	UserID and EventID data stores are used to maintain records for users and events, ensuring data consistency.

3.3.5 Data Flow Diagram (DFD) Level 1

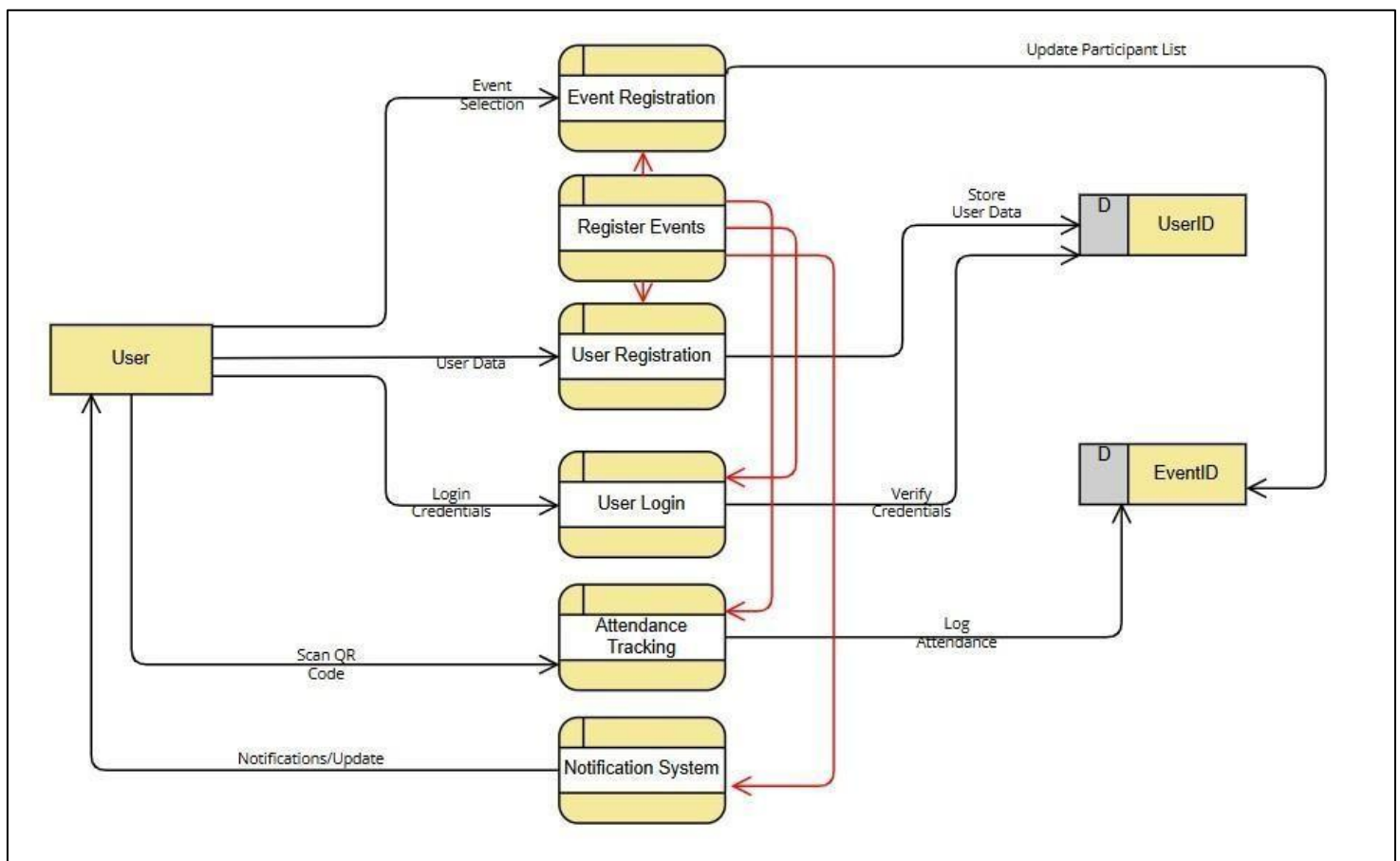


Figure 29: Data Flow Diagram Level 1 for UNIMAS EventHub

1. Component

Table 13 describes the primary components involved in the **DFD Level 1** for the UNIMAS EventHub. It explains the role of external entities like the **User**, the central process (**Register Events**), its subprocesses, and the supporting data stores. These components form the foundation of the system, allowing for event registration, login, attendance tracking, and notifications. The descriptions clarify how each component contributes to the overall functionality.

Table 13: Table of Component in DFD Level 1

Component	Description
Inputs	Represents the external entity (students and organizers) who interact with the system. Users perform actions such as registering, logging in, and attending events.
Register Events	The central process that manages all subprocesses, ensuring seamless user interaction for event registration, login, attendance tracking, and notifications.
User Registration	A subprocess that collects user data, validates it, and stores it in the UserID data store for future use.
User Login	Handles authentication by verifying user credentials against the UserID data store, granting or denying access to the system.
Event Registration	Manages the registration process by linking the user's UserID to the selected event's EventID in the database, updating participant lists.

Attendance Tracking	Tracks event attendance by scanning a QR code and linking the user's UserID with the corresponding EventID in the data store.
Notification System	Sends notifications and updates to users about event registration status, event changes, or attendance confirmations.
UserID (Data Store)	Stores user credentials and personal details. Used for authentication, registration, and participation tracking.
EventID (Data Store)	Stores event-related details, including event participants, schedules, and attendance logs.

2. Subprocess

Table 14 breaks down the main Register Events process into its individual subprocesses. Each subprocess handles a specific task, such as registering users, logging them in, managing event registrations, tracking attendance, and sending notifications. The table also provides details about the inputs, outputs, and key functionality of each subprocess, showing how data flows and is processed within the system.

Table 14: Table of Subprocess in DFD Level 1

Subprocess	Input	Output	Details
User Registration	User-provided data	Confirmation of registration	Accepts user data, validates it, and stores it in the UserID data store.

User Login	Login credentials	Success/Error authentication	Verifies the credentials provided by the user against the UserID data store and grants/denies access accordingly.
Event Registration	Event selection and UserID	Registration confirmation	Links the user's UserID with the chosen event's EventID in the database, updating the participant list.
Attendance Tracking	Scanned QR code and UserID	Attendance confirmation	Logs attendance by associating the user's UserID with the respective EventID in the database.
Notification System	Data from other processes	Notifications to user	Sends event-related updates, such as registration confirmations or attendance updates, directly to the user.

3. Data Stores

Table 15 provides an overview of the system's data stores (UserID and EventID) and their purpose. The UserID data store handles user information and credentials, while the EventID data store focuses on event-related data, such as participant lists and attendance logs. It also highlights how these data stores interact with various subprocesses to store, retrieve, and update information, ensuring seamless system operations.

Table 15: Table of Data Stores in DFD Level 1

Data Stores	Purpose	Interactions
--------------------	----------------	---------------------

UserID	Stores user credentials and personal data.	1. Updated during User Registration . Queried during User Login for 2. authentication. 3. Linked to events during Event Registration .
EventID	Maintains event-related data, including participant lists and attendance logs.	1. Updated during Event Registration . Queried during Attendance 2. Tracking to log participation. 3. Accessed for notifications.

4. Data Flow

Table 16 outlines the movement of data between the system components, including the User, subprocesses, and data stores. It specifies the type of data being transmitted (e.g., user credentials, event selection, attendance records) and the purpose of each data flow. The table emphasizes the relationships and dependencies among components, ensuring that data flows are accurately represented and understood.

Table 16: Table of Data Flow in DFD Level 1

Source	Destination	Data	Purpose
User	User Registration	User data	Allows users to create accounts by submitting their personal and login information.
User	User Login	Login credentials	Enables users to log in and gain access to the system after successful authentication.

User	Event Registration	Event selection and UserID	Facilitates event registration by linking the user with the selected event in the database.
User	Attendance Tracking	Scanned QR code and UserID	Tracks event participation by associating the user with the event they attended.
User Registration	UserID	User data	Stores validated user information in the UserID data store.
User Login	UserID	Login credentials	Verifies the user's credentials against the UserID data store for authentication.
Event Registration	EventID	Participant list updates	Links the user's UserID to the selected EventID , updating the event's participant list.
Attendance Tracking	EventID	Attendance records	Logs attendance by updating the relevant EventID with the user's UserID .
Notification System	User	Notifications/ Updates	Sends notifications to users about their registration status, event updates, and attendance confirmations.

5. Interaction Flow

Table 17 focuses on the overall interaction and relationships among the User, the central Register Events process, its subprocesses, and the data stores. It describes how the system processes user input, delegates tasks to subprocesses, and provides feedback. The table ensures a clear

understanding of how the system operates as a cohesive unit, with each component and process contributing to its functionality.

Table 17: Table of Interaction Flow in DFD Level 1

Interaction	Description
User to Register Events	The user interacts with the central process for all activities, such as registration, login, event participation, and notifications.
Register Events to Subprocesses	The central process delegates tasks to specific subprocesses based on user input (e.g., registration, attendance).
Subprocesses to Data Stores	Each subprocess accesses the data stores (UserID and EventID) to store, update, or retrieve information as needed.
System to User	The system provides feedback, such as registration confirmations, attendance records, and notifications, back to the user.

3.3.6 Data Flow Diagram (DFD) Level 2

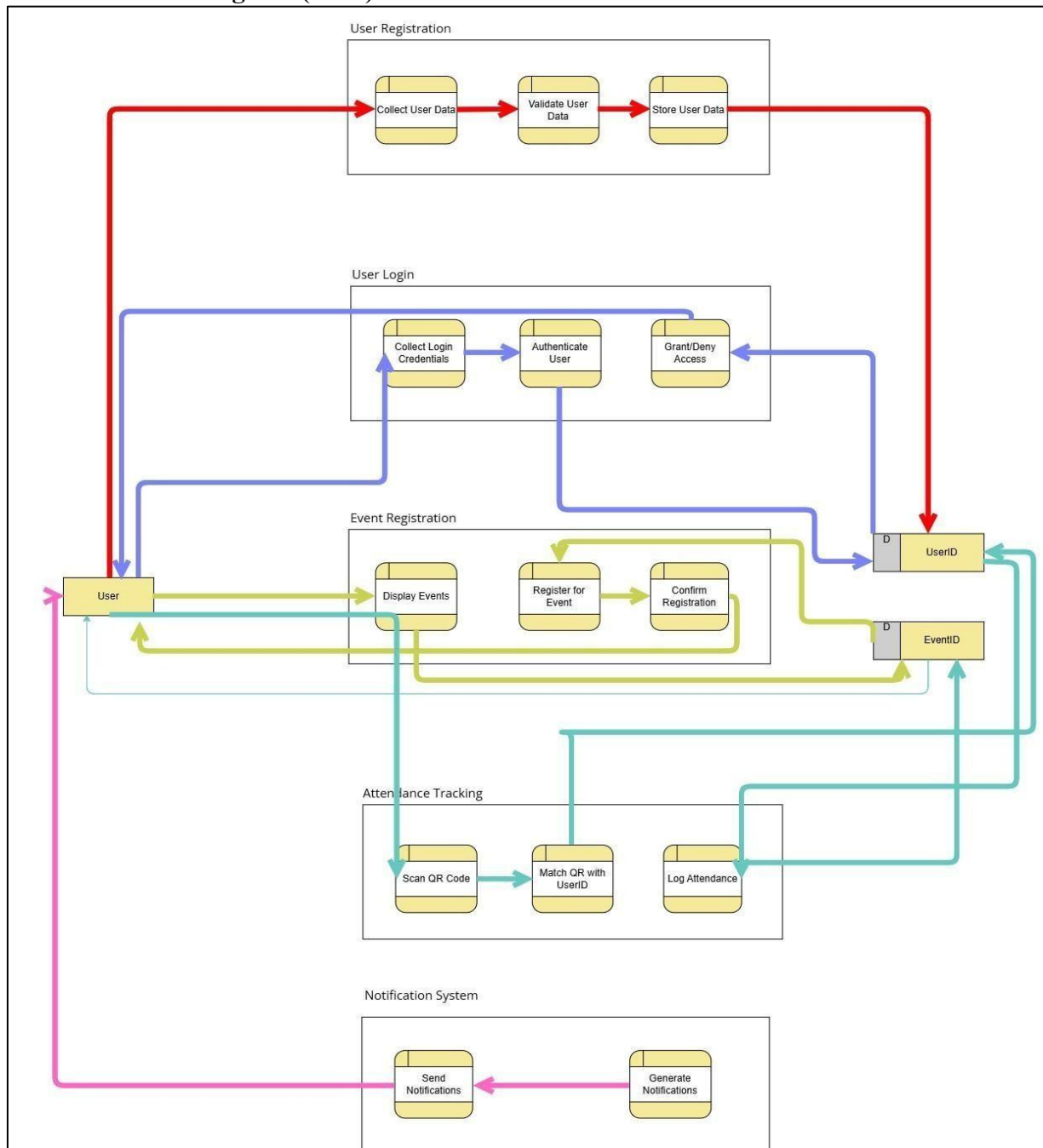


Figure 30: Data Flow Diagram Level 2 for UNIMAS EventHub

1. Subprocess

Table 18 details each subprocess in **DFD Level 2**, focusing on the inputs, outputs, and specific functionality of each task. It breaks down higher-level processes like registration and login into more granular activities.

Table 18: Table of Subprocess in DFD Level 2

Subprocess	Input	Output	Details
Collect User Data	User-provided data	Submitted user data	Captures user information (e.g., name, email, password) for the registration process.
Validate User Data	Submitted user data	Valid or invalid user data	Ensures that user data meets required standards (e.g., no missing fields, valid email format).
Store User Data	Valid user data	Confirmation of registration	Saves validated data into the UserID data store for future use.
Collect Login Credentials	Username and password	Login credentials submitted	Collects the user's login details for authentication.
Authenticate User	Login credentials	Authentication result	Verifies credentials against the UserID data store.
Grant/Deny Access	Authentication result	Access granted or error message	Grants access to the system if authentication succeeds or sends an error message if it fails.
Display Events	User event request	List of available events	Retrieves available events from the EventID data store and presents them to the user.
Register for Event	Selected event and UserID	Registration confirmation	Links the user's UserID to the selected EventID for event registration.
Confirm Registration	Registration result	Registration confirmation message	Sends confirmation of successful event registration to the user.
Scan QR Code	Scanned QR code	Submitted attendance data	Captures the QR code from the user to track attendance.

Match QR with UserID	Scanned QR code	Matched user attendance data	Verifies the QR code and links it to the corresponding UserID in the data store.
Log Attendance	Matched attendance data	Attendance confirmation	Updates the EventID data store with the user's attendance record.
Generate Notifications	Process data (e.g., registration)	Notification content	Prepares notifications based on actions like successful registration or attendance tracking.
Send Notifications	Notification content	Notification to user	Sends notifications to the user about registration status, event updates, or attendance confirmations.

2. Data Stores

Table 19 below explains the purpose and usage of the system's data stores (**UserID** and **EventID**). It highlights how each subprocess interacts with these data stores to store, retrieve, and update information.

Table 19: Table of Data Stores in DFD Level 2

Data Stores	Purpose	Interactions
UserID	Stores user credentials, personal data, and registration history.	1. Updated by Store User Data during registration. Queried by Authenticate User for 2. login. 3. Linked by Match QR with UserID.
EventID	Maintains event-related data, including participant lists, schedules, and attendance records.	1. Queried by Display Events to show available events. Updated by Register for Event and 2. Log Attendance to track participants.

3. Data Flow

Table 20 below provides a complete view of how data moves between components, subprocesses, and data stores in the system. Each row details the source, destination, type of data, and the purpose of the flow.

Table 20: Table of Data Flow in DFD Level 2

Source	Destination	Data	Purpose
--------	-------------	------	---------

User	Collect User Data	User-provided personal details	Provides information necessary for registration.
Collect User Data	Validate User Data	Submitted user data	Sends the collected information for validation.
Validate User Data	Store User Data	Valid user data	Saves the validated user information to the data store.
User	Collect Login Credentials	Username and password	Inputs login credentials for authentication.
Collect Login Credentials	Authenticate User	Submitted credentials	Sends credentials for verification.
Authenticate User	Grant/Deny Access	Authentication result	Decides whether to grant or deny access to the user.
User	Display Events	Event request	Requests available events.
Display Events	EventID	Fetch event list	Retrieves a list of available events.
Display Events	Register for Event	Selected event	Sends the selected event for registration.
Register for Event	EventID	Update participant list	Updates the event data with the registered user.
User	Scan QR Code	QR code	Inputs attendance data by scanning a QR code.

Scan QR Code	Match QR with UserID	QR code data	Verifies the attendance QR code.
Match QR with UserID	Log Attendance	Verified attendance data	Sends verified attendance for logging.
Log Attendance	EventID	Log attendance record	Updates the event attendance data.
Generate Notifications	Send Notifications	Notification content	Prepares updates or alerts for the user.
Send Notifications	User	Notifications/up dates	Delivers messages to the user about system actions or events.

4. Interaction Flow

Finally, Table 21 below describes the overall flow of interactions in the system, including how the user interacts with subprocesses, how subprocesses interact with data stores, and how feedback is returned to the user..

Table 21: Table of Interaction Flow in DFD Level 2

Interaction	Description
User to Collect Data	The user provides input for various actions, including registration, login, event selection, and attendance tracking.
Collect Data to Validation	Data collected from the user is sent for validation to ensure it meets the system's requirements.
Validation to Data Store	Validated data is saved in the relevant data store (UserID or EventID).
Subprocesses to Data Stores	Subprocesses like registration, login, and attendance interact with data stores to retrieve or update information.
Data Store to User	Processes retrieve stored data to provide feedback or notifications to the user.

3.3.7 Data Dictionary

The **Data Dictionary** defines the key data elements used in the UNIMAS EventHub system, including their attributes, types, and purposes.

3.3.6.1 Entity: Users

Table 22 defines the key attributes of users, including their unique ID, credentials, role, and merit points. It supports user registration, login, and tracking of merit point accumulation.

Constraints like unique emails and non-negative merit points ensure data integrity.

Table 22: Data Dictionary for Users

Attribute	Data Type	Description
UserID (Primary Key)	Integer	Unique identifier for each user.
Name	String	Full name of the user.
Email	String	User's email address for login and notifications.
Role	String	User role (e.g., Student, Organizer, Admin).
MeritPoints	Integer	Total merit points accumulated by the user.
Password	String	Encrypted password for user authentication.

3.3.6.2 Entity: Events

Table 23 describes attributes for managing events, such as the event title, date, location, and organizer. Additional attributes like maximum participants and status make event management more flexible and informative.

Table 23: Data Dictionary for Events

Attribute	Data Type	Description
EventID (PK)	Integer	Unique identifier for each event.
Title	String	Name of the event.
Date	Date	Date the event takes place.
Location	String	Venue of the event.
OrganizerID (FK)	Integer	UserID of the event organizer.
MaxParticipants	Integer	Maximum number of participants allowed.
Description	String	Detailed description of the event.
Status	String	Event status (e.g., Upcoming, Ongoing, Completed, Canceled).

3.3.6.3 Entity: Attendance

Table 24 captures attendance data, linking users to events and recording their participation status. Attributes like timestamps and attendance status enable real-time tracking and historical attendance analysis.

Table 24: Data Dictionary for Attendance

Attribute	Data Type	Description
AttendanceID (PK)	Integer	Unique identifier for attendance records.
UserID (FK)	Integer	UserID of the attendee.
EventID (FK)	Integer	EventID the user attended.
Status	String	Attendance status (e.g., Present, Absent).
Timestamp	Timestamp	Date and time when the attendance was recorded.

3.3.8 Interface Design

The **Interface Design** outlines the key screens and user interactions within the system for a userfriendly experience.

1. Login/Registration Screen/Verification:

- i. The main interface that allows users to log in or register with their email and password.

- ii. Includes Verification and Password Reset

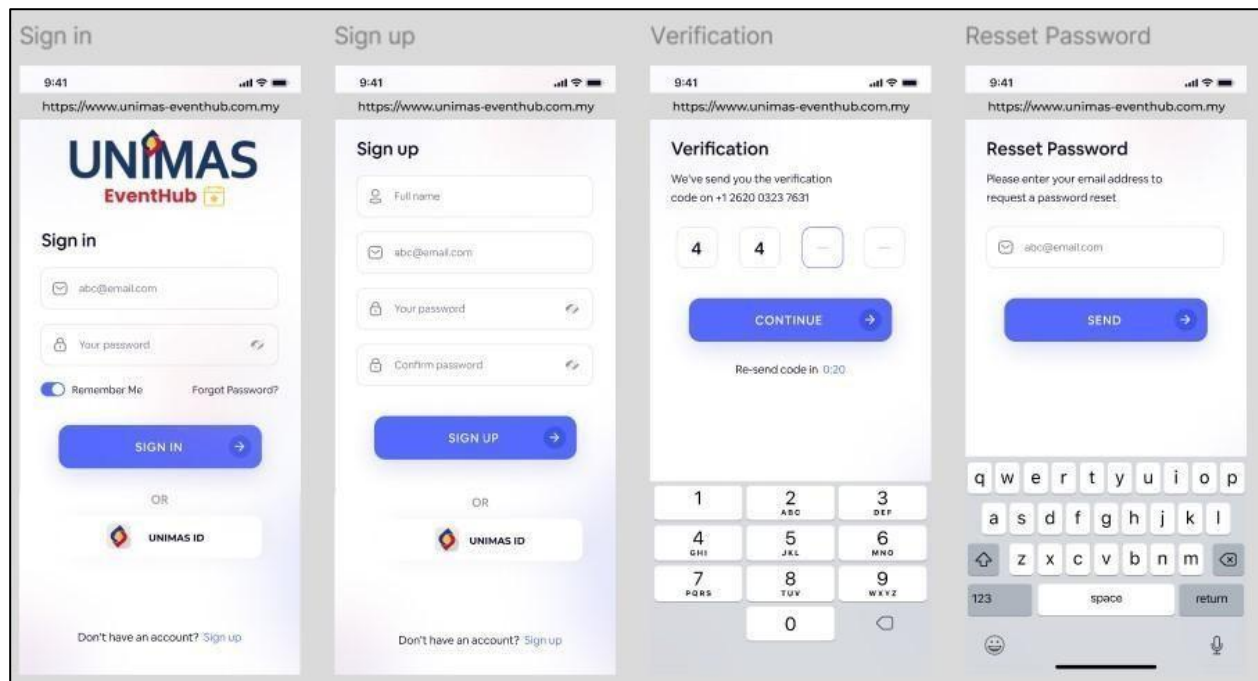


Figure 31: Mockup for Login/Registration Screen/Verification

2. Homepage, Event Details and Map View

- i. The homepage and landing page where users can see Upcoming Event List.
- ii. Event Details Page is filled with Event Name, Details and Map Allocation.

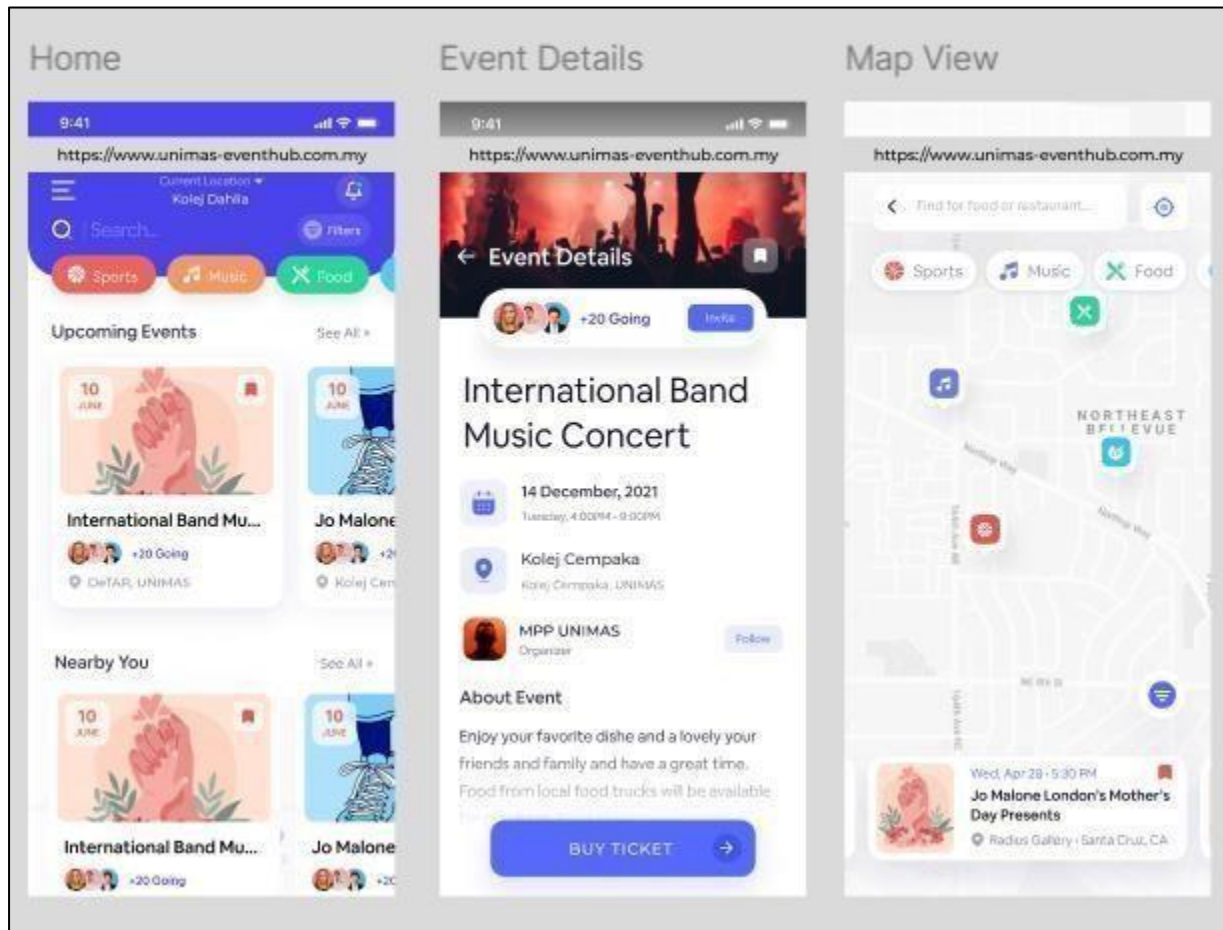


Figure 32: Mockup Homepage, Event Details and Map

3. Notifications and Merits

- i. The notification page mockups will be filled with upcoming registered. events ii.

Merit Page will show accumulated points from all the attended events.

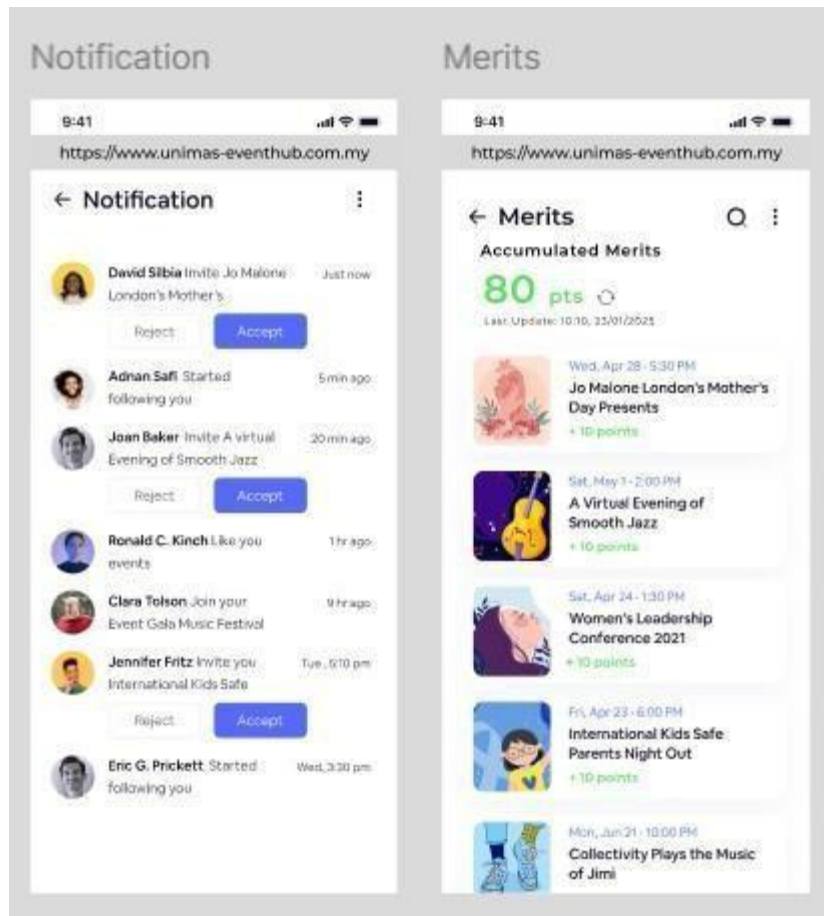


Figure 33: Mockup Notifications and Merits

3.4 Chapter Summary

This chapter has outlined the requirements and design for the UNIMAS EventHub, providing detailed information on the system's data dictionary, interface design, technical architecture, and security features. The design ensures the system meets user needs for event management and merit tracking while maintaining scalability, security, and ease of use. These elements form the foundation for a robust and reliable platform that supports an engaging campus experience.

CHAPTER 4: IMPLEMENTATION

4.1 Introduction

This chapter discusses the system implementation process for the UNIMAS EventHub project. It explains how the planned features were developed and combined to form a fully functional webbased application. It covers the tools, technologies, and steps used during the development process. The system was created based on the features planned in earlier stages, such as event registration, QR code check-in, and merit point tracking. This chapter also describes how each module was developed and how they were combined to form a working system.

4.2 Details of Implementation

This part covers the software used for the system implementation.

4.2.1 Software Requirements

4.2.1.1 Visual Studio Code

Visual Studio Code is a lightweight, open-source code editor used during the front-end development of the system. It supports multiple programming languages and includes helpful features such as syntax highlighting, debugging tools, and a wide range of extensions. It was mainly used for editing HTML, CSS, and JavaScript files. PHP version used is PHP 8.8.4 and Laravel version 8.4.

4.2.1.2 PHPStorm by JetBrains

PHPStorm is a professional Integrated Development Environment (IDE) used for PHP and Laravel-based development. It offers advanced features like intelligent code suggestions, error detection, version control support, and built-in debugging tools. PHPStorm helped with the development of backend features such as event management, user login, and merit point tracking.

4.2.2 Software Installations

4.2.2.1 Visual Studio Code

This software can be downloaded at <https://code.visualstudio.com/> with the installer that matches their operating system (MacOS, Windows, Linux etc.). During installation, enabling options like “Add to PATH” and “Open with Code” is recommended for easier usage. Once installed, useful extensions such as “Live Server” and “PHP Intelephense” can be added to the development environment for live server viewing.

4.2.2.2 PHPStorm by JetBrains

The software can be downloaded from <https://www.jetbrains.com/phpstorm/download/>. After downloading, the installer guides the user through the setup process. A JetBrains account is required to activate the software, and a free 30-day trial is available. PHPStorm supports Laravel through dedicated plugins and allows developers to manage Laravel routes, migrations, and blade files efficiently.

4.3.3 Tool Interface

4.2.2.1 Visual Studio Code and PhpStorm

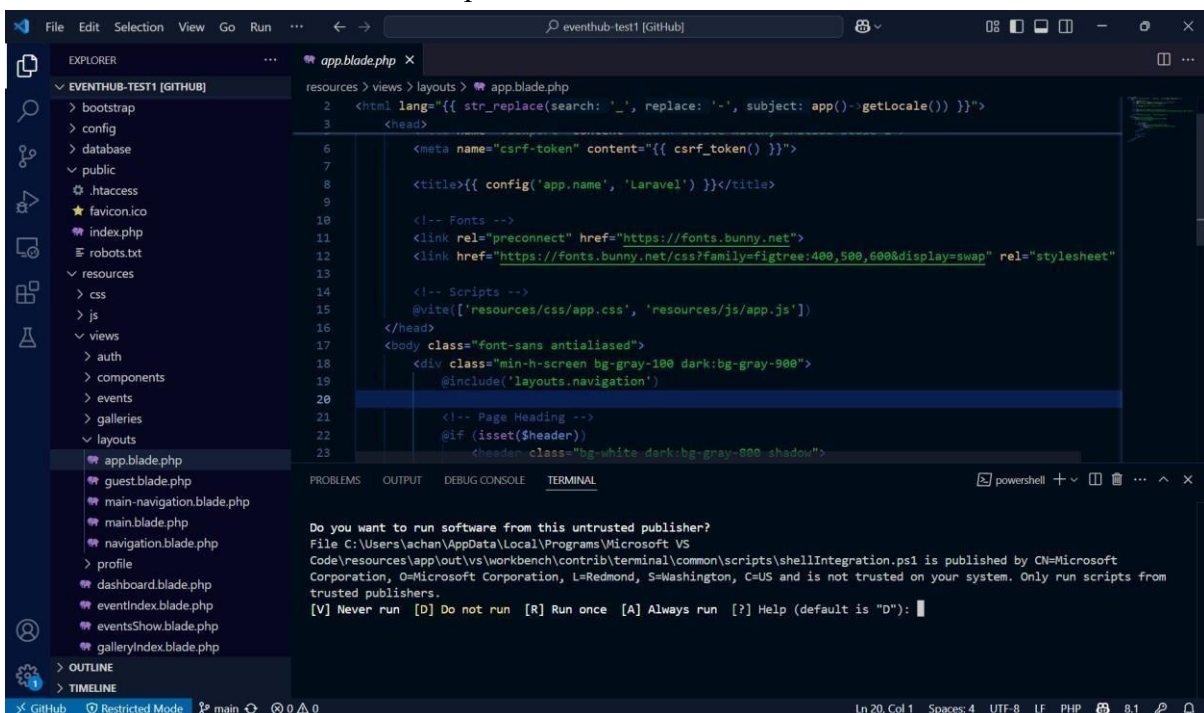


Figure 34: Visual Studio Code Interface

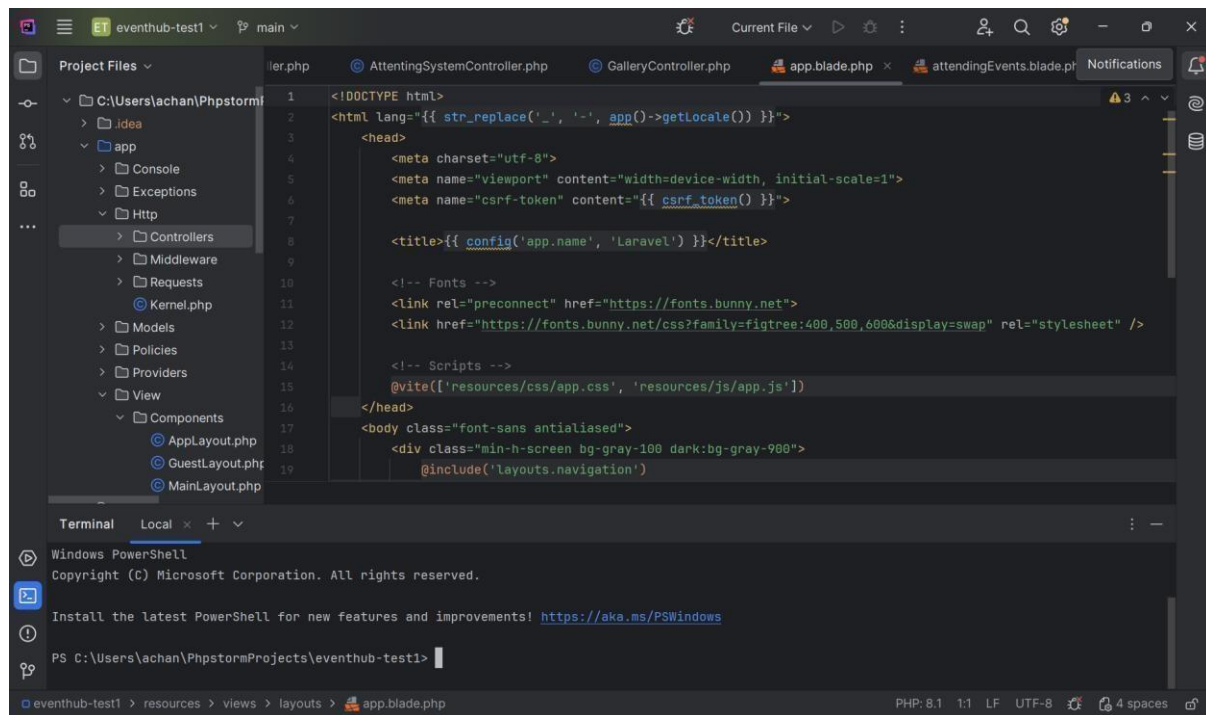


Figure 35: PhpStorm Interface

Based on Figure 4.1, both Visual Studio Code and PhpStorm consist of three main panes with several important and useful features. Located on the left side of the interface, Explorer Pane displays the project's folder structure. It allows easy access to all files and directories, such as controllers, views, routes, and configuration files. This pane helps developers navigate through different sections of the project quickly and keep the project organized.

The center pane is the main workspace where developers write and edit code. In the screenshot, the `app.blade.php` file is open, which is part of the Laravel Blade template used for front-end layout. This pane supports features like syntax highlighting, auto-completion, and bracket matching.

At the bottom of the interface is the terminal and output pane. This section displays logs, errors, and command-line outputs. It is used to run commands, monitor debugging information, and install packages.

4.4 UNIMAS EventHub Web-Based Application

This section will explain about the app that had been developed for this project and its interface.

4.4.1 Homepage

The EventHub homepage (as shown in Figure 36-38) makes it easy for students and organizers to find, join, and manage university events all in one place. At the top of the page, users can quickly start by clicking “Browse Events” or “Get Started.” Important info like how many events have been hosted, how many students have joined, and the support available is shown clearly to build trust. The “Upcoming Events” section shows a variety of events happening soon, with pictures, dates, locations, and a “Join to Register” button that makes signing up fast and simple.

Scrolling further, users will see the “Happening Now” section that highlights events currently taking place, so no one misses out. The “Why Choose EventHub” area explains the helpful features of the platform. These include fast registration, digital tickets using QR codes, easy event browsing, advanced search filters, and tools to connect with other attendees. There’s also an analytics dashboard to help organizers track attendance and improve future events. The page ends with a message encouraging users to get started and take part in the campus experience.

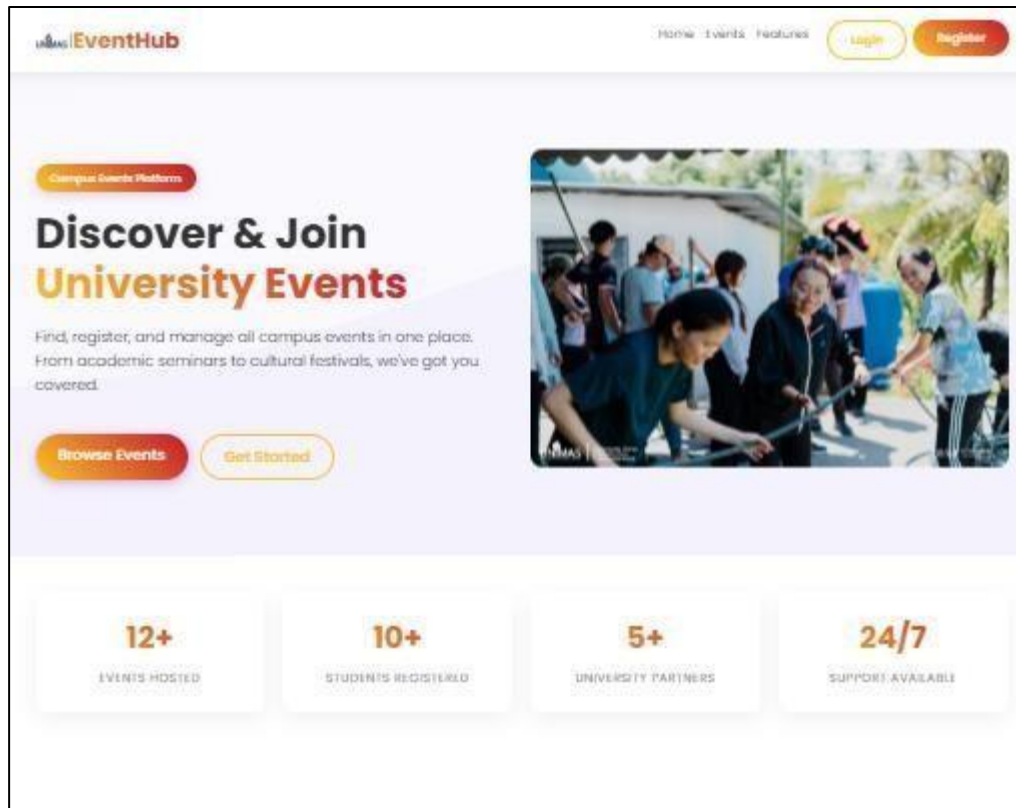


Figure 36: Homepage part 1

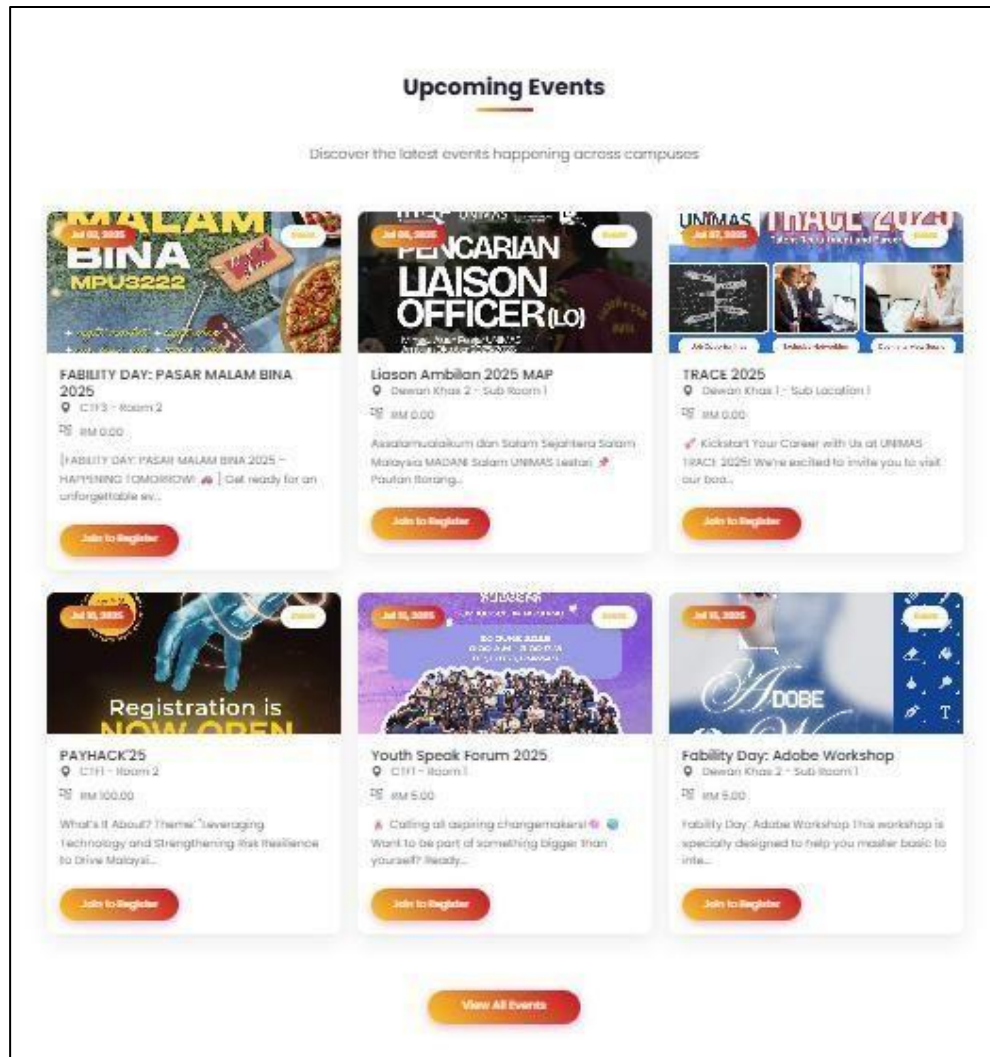


Figure 37: Homepage part 2

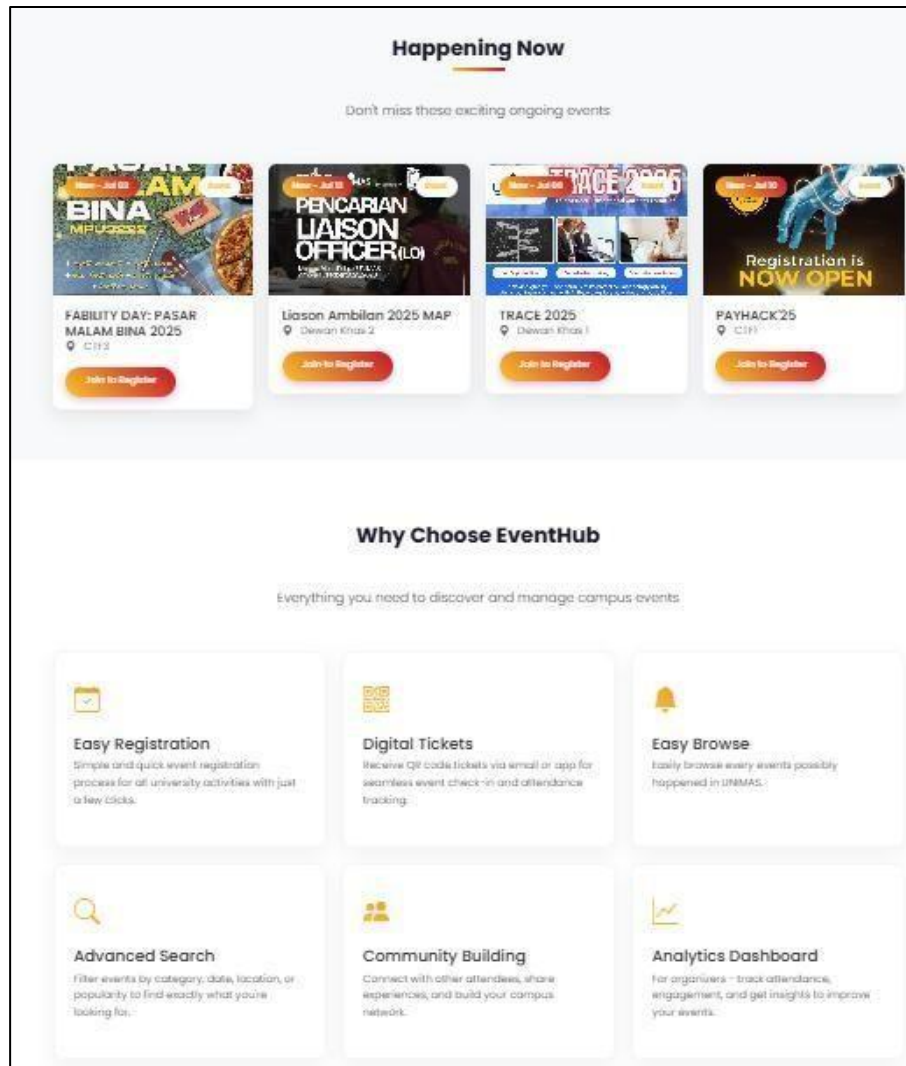
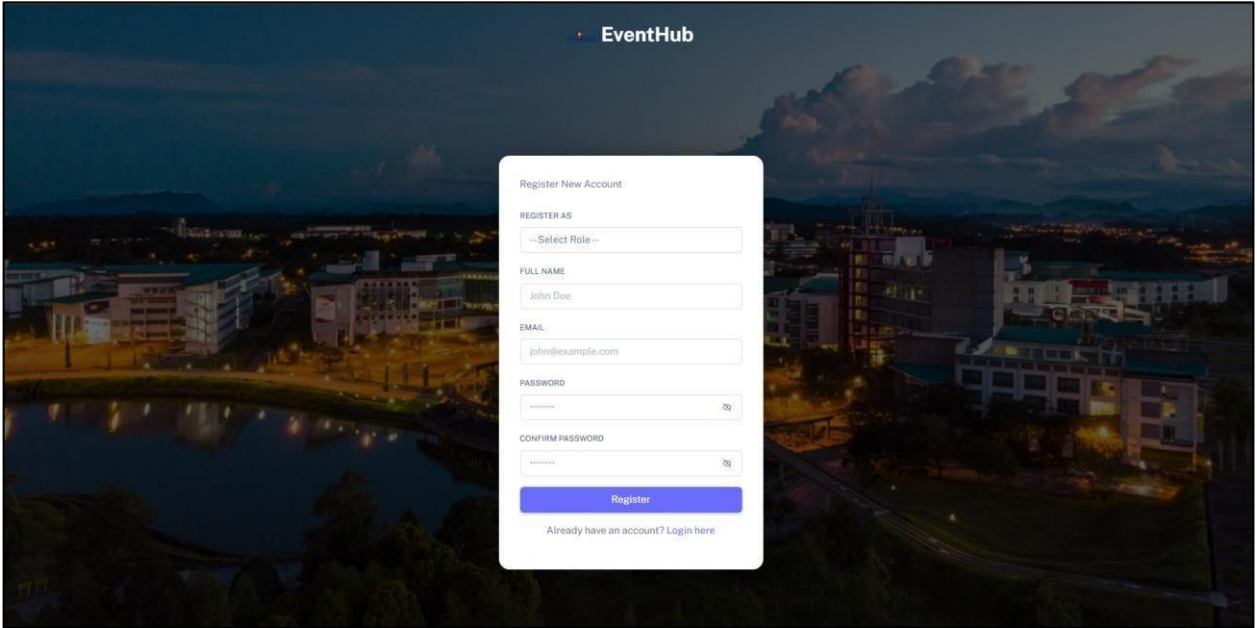


Figure 38: Homepage part 3

4.4.2 Login/Register

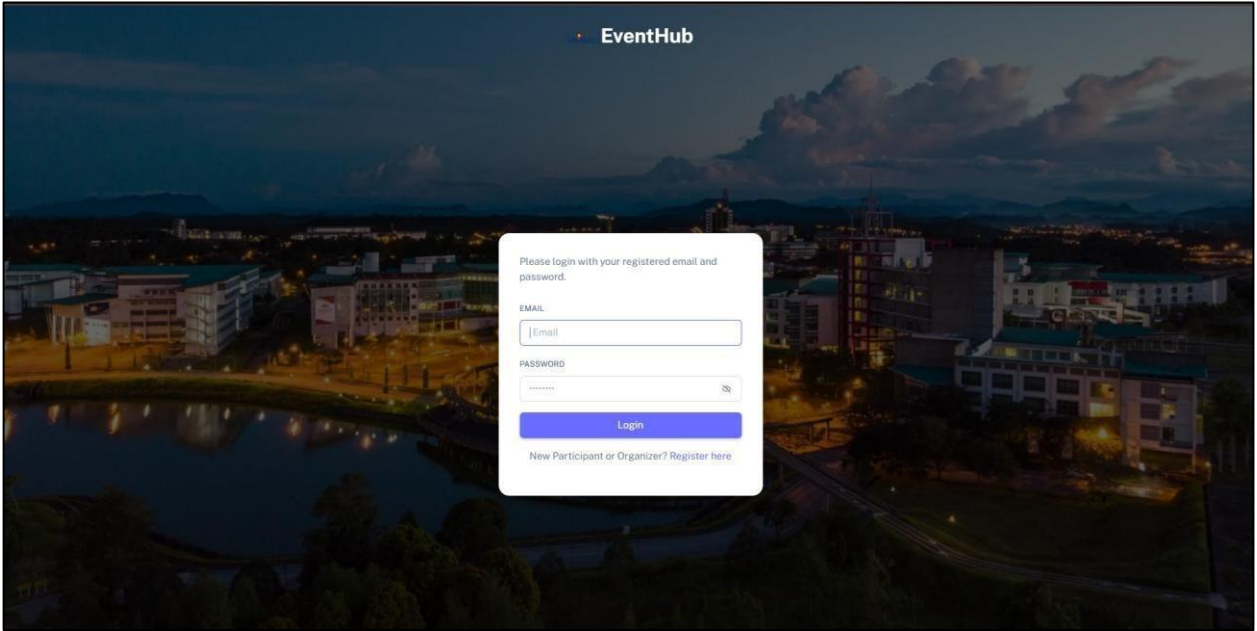
The Login page (Figure 39) allows users to access their account by entering a registered email and password. If users do not have an account, they can click the “Register here” link to create one.

The Register page (Figure 40) lets new users create an account by selecting their role, entering their full name, email, password, and confirming the password. Once registered, users can log in and start using the platform.



The screenshot shows the 'EventHub' logo at the top left. The main content is a 'Register New Account' form. The form includes a 'REGISTER AS' dropdown menu with a placeholder '--Select Role--'. Below this are input fields for 'FULL NAME' (containing 'John Doe'), 'EMAIL' (containing 'john@example.com'), 'PASSWORD', and 'CONFIRM PASSWORD'. Each password field has a strength indicator icon on the right. At the bottom of the form is a blue 'Register' button and a link that says 'Already have an account? Login here'.

Figure 39: User Register



The screenshot shows the 'EventHub' logo at the top left. The main content is a login form with the text 'Please login with your registered email and password.' above two input fields: 'EMAIL' (with a placeholder '[Email]') and 'PASSWORD'. Below the password field is a blue 'Login' button. At the bottom of the form is a link that says 'New Participant or Organizer? Register here'.

Figure 40: User Login

4.4.3 User: Participant

After logging in, users are directed to the **Discover Campus Events** page (Figure 41). This page displays a collection of upcoming campus events with important details such as event name, date, category, location, and price. Users can search for events using keywords or filter them by category. Each event card includes a “View Details” button that leads to more information about the selected event.

On the **Event Details** page (Figure 42), users can view complete event information such as the organizer’s name, description, venue, dates, ticket availability, and any external registration links. If the event allows volunteers, a “Become a Volunteer” button will be shown. Users can also register for the event directly and see reviews or ratings if available.

When users click the **Volunteer** button on an event (Figure 43), they are directed to the **Volunteer Registration** page. This page displays the event name, date, and a simple form asking, “Why do you want to volunteer?” Users can write their motivation in the textbox provided and click **Submit Volunteer Request** to complete the registration. This allows event organizers to gather interested participants and understand their reasons for volunteering.

After clicking the **Register** button for an event (Figure 44), users are directed to the **Payment for Event** page. This page shows the event details, participant information, number of available tickets, and ticket price. Users can select the quantity of tickets they want, and the system will automatically calculate the total amount. Once ready, users can click the **Pay Now** button, which will redirect them to the **ToyyibPay** payment gateway to complete the transaction securely.

The **My Joined Events** page (Figure 45) displays a table of all the events a user has registered for. It includes useful details such as the event name, location, date, quantity of tickets, total price, payment status, and whether the user has volunteered or rated the event. Users can easily track their participation and check the current status of each event, such as whether their registration is confirmed or still pending. This page helps users stay organized and informed about the events they have joined.

The **My Profile** page (Figure 46) allows users to manage their personal information. Users can upload or change their profile picture, set a nickname, write a short bio, and select their gender.

Under the contact section, users can update their email and contact number. However, email and nickname can only be changed once. After making updates, users can click **Save Profile** to store the changes. If they wish to leave the platform, a **Delete My Account** button is available for account removal.

EventHub

1 Points · Browse Events · My Events · achan

Discover Campus Events

Explore workshops, festivals, and talks happening around you

Fabality Day: Adobe Workshop

📍 Dewan Khas 2 - Sub Room 1

🕒 RM 5.00

Fabality Day: Adobe Workshop This workshop is specially designed to help you master basic to inte...

FABILITY DAY: PASAR MALAM BINA 2025

📍 CTF3 - Room 2

🕒 RM 0.00

[FABILITY DAY: PASAR MALAM BINA 2025 – HAPPENING TOMORROW! 🍕] Get ready for an unforgettable ev...

Liaison Ambilan 2025 MAP

📍 Dewan Khas 2 - Sub Room 1

🕒 RM 0.00

Assalamualaikum dan Salam Sejahtera Salam Malaysia MADANI Salam UNIMAS Lestari 🌸 Pautan Borang...

PAYHACK'25

📍 CTF1 - Room 2

🕒 RM 100.00

What's It About? Theme: "Leveraging Technology and Strengthening Risk Resilience to Drive Malaysi...

Youth Speak Forum 2025

📍 CTF1 - Room 1

🕒 RM 5.00

🔥 Calling all aspiring changemakers! 🌈 Want to be part of something bigger than yourself? Ready...

TRACE 2025

📍 Dewan Khas 1 - Sub Location 1

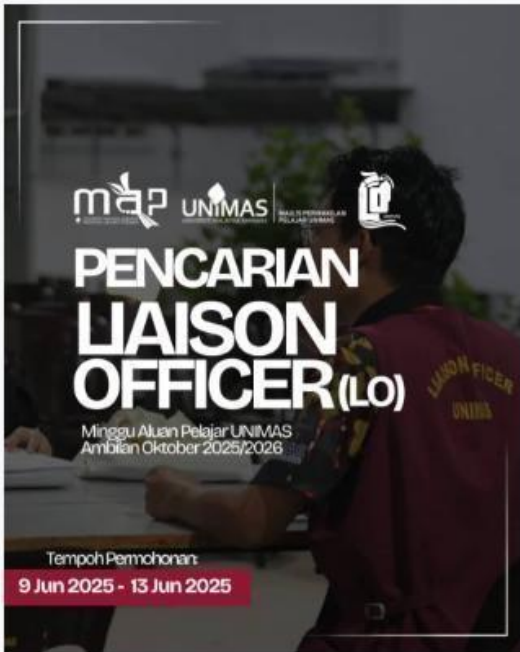
🕒 RM 0.00

🔥 Kickstart Your Career with Us at UNIMAS TRACE 2025! We're excited to invite you to visit our boo...

Figure 41: Event Page


EventHub

1 Points
Browse Events
My Events
achan



Liasan Ambilan 2025 MAP

General

2025-07-06 to 2025-07-12

Dewan Khas 2 - Sub Room 1

Location: Dewan Khas 2

RM 0.00

40 Tickets

[Become a Volunteer](#)

Assalamualaikum dan Salam Sejahtera
Salam Malaysia MADANI
Salam UNIMAS Lestari

✦ Pautan Borang Permohonan Fizikal:
• <https://drive.google.com/file/d/1pFITM9xNyvaOQKIssCS4dWCufsdCgr6/view?usp=sharing>

✦ Pautan Borang Permohonan Atas Talian:
• <https://forms.gle/dLIQ3UNJWfSGxPCj6>

Sebarikan kepada rakan-rakan yang berminat!
Sekian, terima kasih.

organizer achan



"Waddle We Do Without You?" Tagline: Fighting serious issues... one quack at a time. Mission: To promote duck-based humor, honk-based diplomacy, and the global appreciation of webbed feet.

☆☆☆☆☆ (0 reviews)

[Register Now](#)

Reviews

No reviews yet.

Figure 42: Event Details

The screenshot shows the 'Volunteer Registration for: Liason Ambilan 2025 MAP' page. At the top, the UNIMAS EventHub logo is on the left, and user information '1 Points', 'Browse Events', 'My Events', and a profile icon for 'achan' is on the right. The main heading is 'Volunteer Registration for: Liason Ambilan 2025 MAP'. Below it, the date range is 'Date: 2025-07-06 to 2025-07-12' and the location is 'Location: -'. A text prompt asks 'Why do you want to volunteer?' followed by a large text input area. At the bottom left of the form is a blue button labeled 'Submit Volunteer Request'.

Figure 43: Volunteer Registration

The screenshot shows the 'Payment Gateway' page. At the top, the UNIMAS EventHub logo is on the left, and user information '1 Points', 'Browse Events', 'My Events', and a profile icon for 'achan' is on the right. A green success message at the top reads 'Successfully registered! Proceed to payment.' with a close button. Below this is a blue header bar labeled 'Payment for Event'. The event title 'Liason Ambilan 2025 MAP' is displayed. A table lists event details: Participant (achan (achannasri@gmail.com)), Location (Dewan Khas 2 - Sub Room 1), Date (Jul 06, 2025 to Jul 12, 2025), Price per Ticket (RM0.00), Available Tickets (40), and Quantity (1). The total amount is RM0.00. At the bottom is a green button with a credit card icon labeled 'Pay Now'.

Figure 44: Payment Gateway

1 Points [Browse Events](#) [My Events](#) achan

My Joined Events

Show 10 entries Search events...

Image	Event Name	Location	Date	Quantity	Price	Total Amount	Status	Volunteering	Rated	Action
	Liason Ambilan 2025 MAM Student Orientation	Dewan Khas 2 - Sub Room 1	Jul 06, 2025 - Jul 12, 2025	0.00	RM 0.00	RM 0.00	Pending	No	No	

Showing 1 to 1 of 1 entries Previous 1 Next

Figure 45: My Joined Event Page

1 Points [Browse Events](#) [My Events](#) achan

My Profile

Avatar and Basic Info

[Choose File](#)
No file chosen

Profile Details

Nickname

You can only change your nickname once.

About

Gender

-- Select --

Contacts

Email

You can only change your email once.

Contact Number

We'll use this to contact you regarding purchases or alerts.

[Save Profile](#)
[Delete My Account](#)

Figure 46: My Profile Page

4.4.4 User: Organizer

The **Organizer Dashboard** (Figure 47) provides a quick overview of total events created, tickets sold, and participants joined. A chart displays how many participants have registered for each event, helping organizers track engagement at a glance.

The **Event Management** (Figure 48) section lists all events created by the organizer, along with important details such as category, location, price, start and end dates, and whether volunteers are needed. Organizers can click the **Create Event** button to add new events easily. They also can **Edit Event** here.

In the **Scan QR** (Figure 49) section, organizers can check in participants by scanning their QR codes. This page shows event details and tracks who is present or absent in real time, along with a live participant list.

Lastly, the **Profile** page (Figure 50) allows organizers to manage their organization information, including name, description, avatar, cover image, and social media links. They can update their branding to maintain a professional presence on the platform.

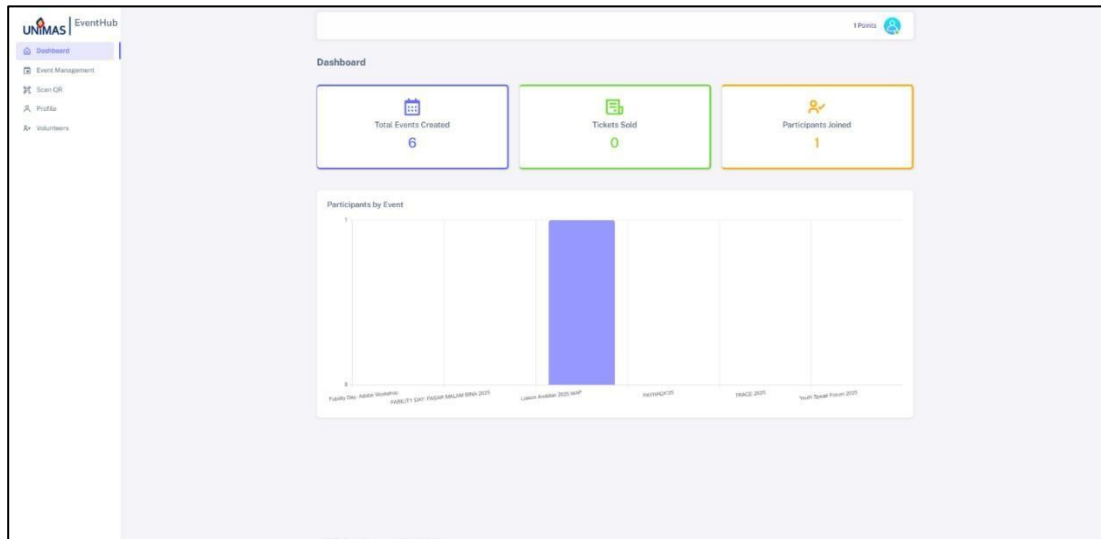


Figure 47: Organizer Dashboard

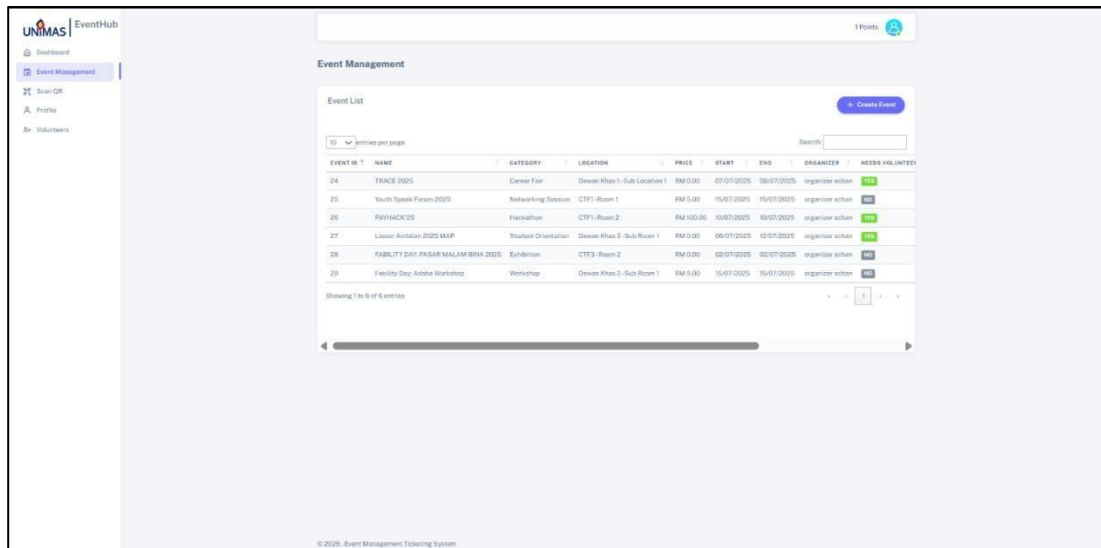


Figure 48: Organizer Event Management

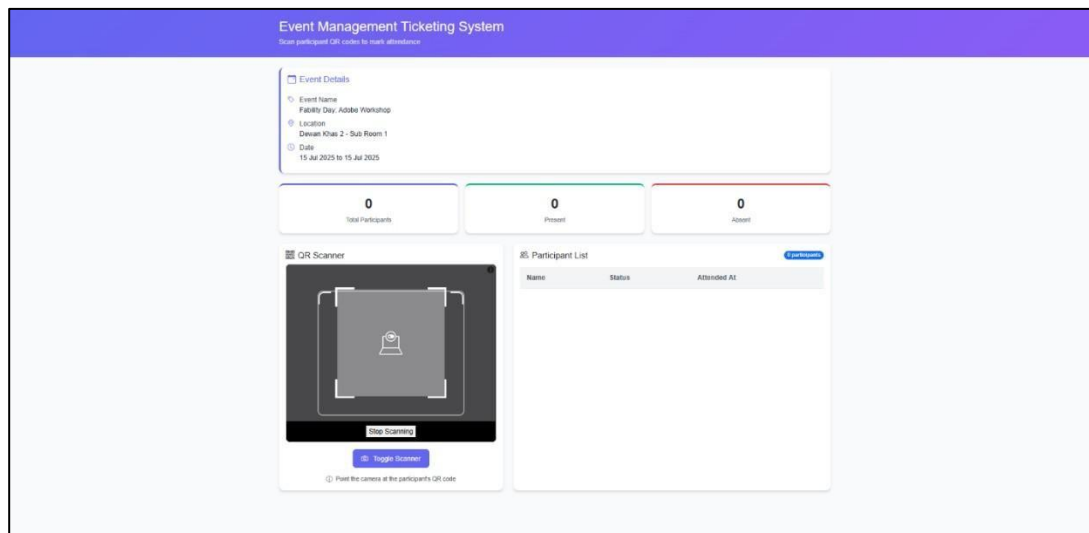


Figure 49: Organizer Event QR Scanner

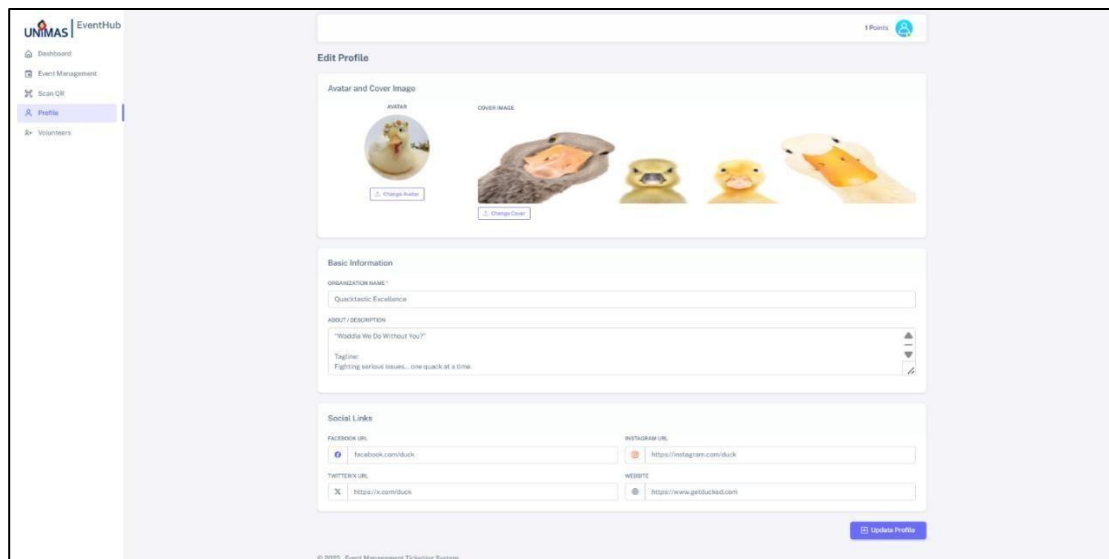


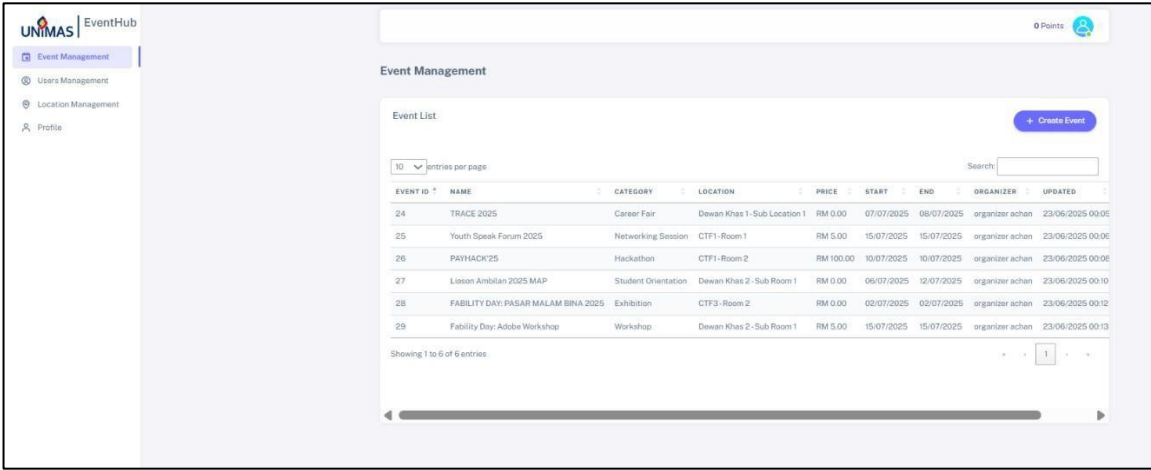
Figure 50: Organizer Profile

4.4.5 User: Admin

The **Admin Panel** (Figure 51) in EventHub provides access to core management tools for maintaining the platform. Under **Event Management**, admins can view all events created across the system, along with details such as category, price, location, and organizer. Admins can use this section to monitor activity and ensure events follow university standards.

In the **User Management** section (Figure 52), admins can view all users, their roles (e.g., Participant, Organizer, Admin), and basic details such as name and email. Admins can also create new users and manage existing ones. Meanwhile, the **Location Management** tab (Figure 53) allows admins to manage event venues by adding or removing locations and sub-locations.

The **Profile** section (Figure 54) lets admins update their organizational profile details, including avatar, cover image, description, and social media links. This ensures that admin-related updates and communications appear official and recognizable throughout the platform.



EVENT ID	NAME	CATEGORY	LOCATION	PRICE	START	END	ORGANIZER	UPDATED
24	TRACE 2025	Career Fair	Dewan Khas 1-Sub Location 1	RM 0.00	07/07/2025	08/07/2025	organizer achan	23/06/2025 00:05
25	Youth Speak Forum 2025	Networking Session	CTF1-Room 1	RM 5.00	15/07/2025	15/07/2025	organizer achan	23/06/2025 00:06
26	PATHACK25	Hackathon	CTF1-Room 2	RM 100.00	10/07/2025	10/07/2025	organizer achan	23/06/2025 00:06
27	Lison Ambilan 2025 MAP	Student Orientation	Dewan Khas 2-Sub Room 1	RM 0.00	09/07/2025	12/07/2025	organizer achan	23/06/2025 00:10
28	FABILITY DAY: PASAR MALAM BINA 2025	Exhibition	CTF3-Room 2	RM 0.00	02/07/2025	02/07/2025	organizer achan	23/06/2025 00:12
29	Fability Day: Adobe Workshop	Workshop	Dewan Khas 2-Sub Room 1	RM 5.00	15/07/2025	15/07/2025	organizer achan	23/06/2025 00:13

Figure 51: Admin Dashboard and Event Management

User Management

User List

10 entries per page Search:

ID	NAME	EMAIL	ROLE	UPDATED	ACTION
1	Admin	admin@gmail.com	Admin	05/05/2025 16:28	
10	Razal	razal.999999@gmail.com	Participant	22/05/2025 07:04	
14	organizer achan	achannachankoli@gmail.com	Organizer	02/06/2025 12:31	
15	achan	achannasri@gmail.com	Participant	05/06/2025 17:41	
16	ayano	starlujung@gmail.com	Participant	06/06/2025 07:31	
17	meow	achannachanal@gmail.com	Participant	08/06/2025 05:27	
18	rwer	test123@gmail.com	Organizer	08/06/2025 05:31	
19	izzatul	izzatulatin21@gmail.com	Participant	08/06/2025 12:02	

Showing 1 to 8 of 8 entries

Figure 52: Admin's Users Management

Event Location Management

Location List

10 entries per page Search:

ID	LOCATION	SUB-LOCATIONS	UPDATED	ACTION
1	Dewan Khas 1	Sub Location 1 Sub Location 2	22/05/2025 07:02	
2	Dewan Khas 2	Sub Room 1	22/05/2025 07:03	
3	CTF3	Room 1 Room 2	08/06/2025 05:34	
4	CTF1	Room 1 Room 2	08/06/2025 12:08	

Showing 1 to 4 of 4 entries

Figure 53: Admin's Location Management

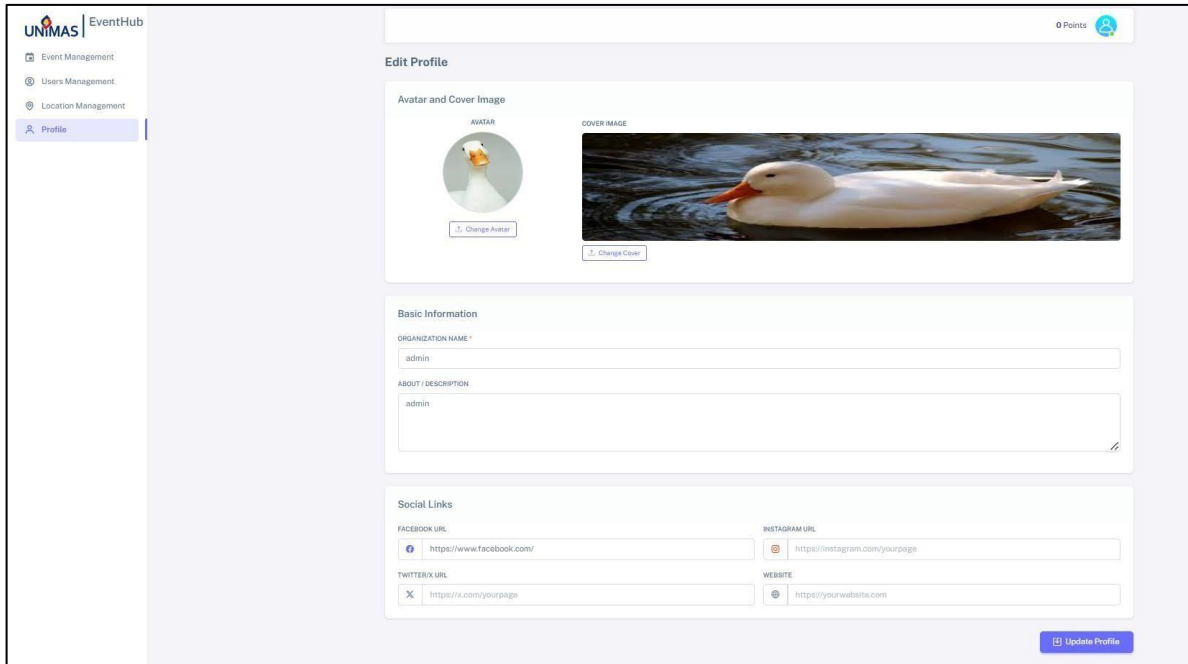


Figure 54: Admin Profile

4.5 Database

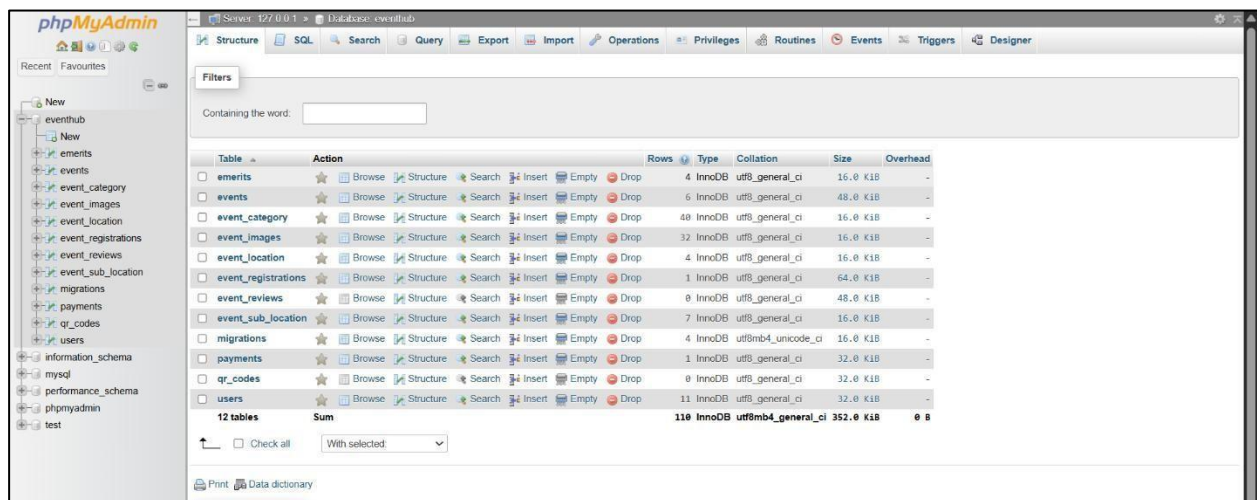


Figure 55: UNIMAS EventHub Database

The **UNIMAS EventHub database** (Figure 55) is organized into 12 main tables, each serving a specific function within the system. The users table stores user information including their roles (admin, organizer, or participant). The events table keeps records of all created events, while event_category defines each event's type, such as workshop or exhibition.

To support event logistics, the event_location and event_sub_location tables handle venue data. Registrations are tracked in the event_registrations table, and any feedback is stored in event_reviews. The payments table manages ticket transactions, while qr_codes is used for scanning attendance. Additional tables like event_images and emerits store media and merit point details respectively. Overall, this structure supports efficient event and user management across the platform.

4.6 Conclusion

This chapter explained how the EventHub system was built. It showed the key features like event registration, volunteer sign-up, QR attendance, and payment using ToyyibPay. The system was developed using PHP, Laravel, and MySQL. All main functions are working well and connected. With this, the system is ready to move to the testing phase.

CHAPTER 5: TESTING

5.1 Introduction

This chapter describes the testing process carried out to make sure the UNIMAS EventHub system works correctly and meets the needs of its users. Testing is an important step in system development because it helps check for errors and makes sure the system functions as expected. The testing focused on both the features and the overall performance of the system. It was done to confirm that key functions such as event registration and automatic merit point tracking were working well. It also looked at how easy the system is to use and whether it works smoothly on different devices. Testing was done by a group of users, including students and event organizers. Their feedback helped identify any problems and improve the system. This chapter will explain the types of testing used, which parts of the system were tested, and the results of the testing process.

5.2 Types of Testing

During the testing phase of the UNIMAS EventHub project, three types of testing were carried out: **unit testing**, **integration testing**, and **user acceptance testing (UAT)**. These tests helped make sure that each feature worked correctly, all parts of the system connected properly, and the system met user needs.

5.2.1 Unit Testing

Unit testing was done to check each feature on its own. For example, the login page and event registration form were tested separately. This helped ensure that every part of the system worked without problems.

5.2.2 Integration Testing

Integration testing checked if the features worked well together. For example, after a student register for an event, the system must update the attendance and add merit points. This type of testing helped confirm that the steps connected smoothly.

5.2.3 User Acceptance Testing (UAT)

UAT was done by actual users, including students and event organizers. They used the system and gave feedback on how easy it was to use and whether it worked as expected. This helped improve the final version of the system before it was completed. The table below shows examples of actions tested and the results:

Table 25: UAT Action and Result

Action	Result
Register user and store data in the system database	Success
Event registration completed in the system database	Success
QR ticket integration	Success
Volunteer button working and user registered is in the database	Success

5.3 Environment Test

The UNIMAS EventHub system was tested on different devices to make sure it works well across various platforms. This is important to ensure users can access the system smoothly whether they are using a phone, laptop, or tablet. The goal of this environment test was to check for compatibility, responsiveness, and overall user experience on each device.

Table 26: Environment Test Details

Device	Model	Purpose of Testing	Operating System	Result
Smartphone	Samsung Galaxy S24 Ultra	To test responsiveness, layout display, and mobile usability	Android	Success
Laptop	Lenovo ThinkPad E14 Gen 5	To test full system performance and multi-tab browsing	Windows11	Success
Tablet	iPad Air (5th Generation)	To test interface layout and touch navigation	IOS	Success

5.4 Unit Testing

Unit testing was done to check whether each individual feature of the UNIMAS EventHub system works correctly on its own. This type of testing focuses on specific modules or functions, such as login, event registration and merit point updates. Each feature was tested separately to make sure it gave the correct result based on the input.

The unit tests helped identify any early problems during development. If a feature did not work as expected, it was fixed before combining it with other parts of the system. All unit tests for this project were completed successfully, and the main functions performed well during testing.

5.4.1 Programming Testing

The system was developed using PHP and the Laravel + Bootstrap5 framework, supported by HTML, CSS, JavaScript, and MySQL. During the coding process, any errors such as missing variables, broken logic, or database connection issues were tested and corrected immediately. Testing was done directly in the development environment using tools like PHPStorm and Visual Studio Code.

5.5 Acceptance Testing

Acceptance testing was done to check if the system meets the needs of real users. In this project, students and event organizers were invited to test the UNIMAS EventHub platform. They used the system and gave feedback based on their experience. This included testing features like logging in, registering for events, viewing maps and tracking merit points.

An evaluation form was given to 20 students who tested the platform. They were asked to rate how easy or difficult each function was. Based on the table of their responses, most users found the system very easy or easy to use. A few users found some features like merit tracking to be slightly average, but no users found the system difficult.

Table 27: Acceptance Testing Details

Functionality	Very Easy	Easy	Average	Difficult	Very Difficult
Sign Up	16	4	0	0	0
Sign In	18	2	0	0	0
Browse Events	17	3	0	0	0
Register for Events	15	4	1	0	0
Track Merit Points	15	4	1	0	0
View Event Location	16	3	1	0	0

Volunteer Sign-Up	14	5	1	0	0
Log Out	20	0	0	0	0

5.5.1 Interface Testing

Interface testing is part of usability testing and focuses on how users interact with the system's design. It checks whether users can easily understand and use the platform. In this project, interface testing was used to get feedback on visual elements such as background color, font, buttons, icons, and layout.

Twenty students tested the UNIMAS EventHub interface and answered a questionnaire. They rated each design element based on their experience. The results are shown in the table below. Table 27: Interface Test Details

Design Element	Excellent	Good	Satisfactory	Poor
Background Color	17	3	0	0
Font Color	16	2	2	0
Font Size	17	1	2	0
Icons	16	3	1	0
Button Colors	19	1	0	0
Activity Layout	17	2	1	0

5.6 Component Testing and Test Case

Component testing is used to test individual parts of the system one by one. In this project, it helped to make sure that each feature worked correctly on its own before being combined into the full system. Each module, such as login, registration, search, event check-in, and logout, was tested with different inputs. The expected results were compared to the actual output to check if the feature worked as planned.

For the UNIMAS EventHub system, component testing confirmed that all key features functioned as intended when tested individually. Users were able to log in and log out of the system without issues, ensuring secure access. Event registration worked smoothly, allowing users to sign up for events with accurate data recording. The search feature also performed well, helping users to find events easily based on filters or keywords. Lastly, the system successfully tracked and displayed updated merit points after each event check-in. These results show that each component of the system was functioning correctly on its own during the testing phase. All components worked correctly during testing, which showed that each function was built according to the project's requirements.

Table 26: Test Case Details Example

Test Case ID	Test Case Description
TC001	User login to their account

Prerequisites

1. User has already registered an account.
2. User has a valid email and password stored in the system.
3. The system is running and accessible via web browser.

Test Scenario

User logs in using their registered email and password.

#	Step Details	Expected Results	Actual Results	Pass/Fail
1	Enter username	Displayed username entered	Displayed username entered	Pass
2	Enter password	Displayed password in masked form	Displayed password in masked form	Pass
3	Click on "Login" button	Display user dashboard/homepage	Displayed user dashboard/homepage	Pass

1) Test Case ID: TC01 Test Case**Description: User Registration Prerequisites:**

User accesses registration page

Form fields are empty

Internet connection is active

Test Scenario

Verify if a new user can register successfully.

#	Step Details	Expected Results	Actual Results	Pass/Fail
1	Fill in the registration form	Form fields accept input	Form fields accept input	Pass
2	Submit the form	Data is submitted	Data is submitted	Pass
3	Redirect to login	User is redirected	User is redirected	Pass

2) Test Case ID: TC02 Test

Case Description: User Login Prerequisites:

User account is registered

Correct credentials ready

Login page accessible

Test Scenario

Verify if a registered user can log in.

#	Step Details	Expected Results	Actual Results	Pass/Fail
1	Enter credentials	Fields accept input	Fields accept input	Pass
2	Click Login	Login process begins	Login process begins	Pass
3	Access dashboard	User dashboard is shown	User dashboard is shown	Pass

3) Test Case ID: TC03 Test Case

Description: Event Registration Prerequisites:

User is logged in

Event exists

Sufficient tickets available

Test Scenario

Verify if user can register for an event.

#	Step Details	Expected Results	Actual Results	Pass/Fail
1	Click event	Event detail page loads	Event detail page loads	Pass
2	Register	Registration form shows	Registration form shows	Pass
3	Confirm registration	Success message appears	Success message appears	Pass

4) Test Case ID: TC04 Test Case

Description: Volunteer Submission Prerequisites:

Event requires volunteers

User is logged in

User is registered to the event

Test Scenario

Check if user can volunteer for an event.

#	Step Details	Expected Results	Actual Results	Pass/Fail
1	Click 'Become Volunteer'	Form displays	Form displays	Pass
2	Fill motivation	Input accepted	Input accepted	Pass
3	Submit	Submission is saved	Submission is saved	Pass

5) Test Case ID: TC05 Test Case

Description: Admin Create Event Prerequisites:

User is admin

Create Event button visible

All form fields available

Test Scenario

Check admin can create an event.

#	Step Details	Expected Results	Actual Results	Pass/Fail
1	Open Create Event	Form appears	Form appears	Pass
2	Fill details	Form accepts input	Form accepts input	Pass
3	Submit form	Event created	Event created	Pass

6) Test Case ID: TC06 Test Case

Description: QR Attendance Scan Prerequisites:

QR codes are generated

Scanner is connected

User has QR code

Test Scenario

Verify if QR attendance scanning works.

#	Step Details	Expected Results	Actual Results	Pass/Fail
1	Open QR Scanner	Camera opens	Camera opens	Pass
2	Scan QR	Code recognized	Code recognized	Pass
3	Mark attendance	User marked present	User marked present	Pass

5.7 Conclusion

This chapter explained the testing activities carried out for the UNIMAS EventHub system. Several types of testing were done, including unit testing, integration testing, user acceptance testing,

interface testing, and component testing. Each test helped to check if the system was working as expected.

The test results showed that the system is reliable, easy to use, and meets its intended goals. Most users gave positive feedback and found the platform easy to navigate. Based on this, it can be concluded that the UNIMAS EventHub performs well and is ready for real-world use.

CHAPTER 6: CONCLUSION AND FUTURE WORKS

6.1 Introduction

This chapter explains the overall achievements of the UNIMAS EventHub project. It discusses how the system met the project's goals, the challenges faced during development, and what can be improved in the future. It also includes suggestions for future updates that can help improve the system's features and performance.

6.2 Project Achievement

The success of this project is based on how well it achieved the goals stated in Chapter 1. The table below shows each objective and the result after completing the system.

Table 28: Achievement

Objectives	Achievements
To provide one platform for students to find and register for campus events	A working web system was built that lets students see events, register, and get updates. This solved the problem of scattered event announcements.
To help event organizers manage and monitor their events	Organizers can post events, see who registered, and track attendance using the admin dashboard.
To integrate volunteering system	Based on user testing, most students and organizers said the volunteering system is very good and easy to use.

6.2 Project Limitations

The UNIMAS EventHub project faced a few limitations during development. These limitations were mainly due to time constraints, technical restrictions, and limited testing resources.

The table below lists the main limitations identified in this project and their descriptions. Table 29:
Limitations

Limitation	Description
Time Limitation	Due to the short development period, some planned features could not be completed within the given timeframe.
Limited User Profile Features	Users are only able to change their passwords. Other profile details such as name and contact information cannot be updated through the system.
No Public Hosting	The system is not uploaded to a live server. It can only be accessed locally or shared manually, which limits its availability to users.
Limited Device Testing	Testing was mostly done on desktop browsers. The system still needs to be fully tested and optimized for smartphones and tablets.

6.4 Future Works

To improve the system in the future, several suggestions are proposed:

1. Add Full Profile Editing

Allow users to update their full profile, including name, contact number, and profile photo.

2. Online Hosting

Upload the system to a hosting service so users can access it from anywhere using the internet.

3. Mobile Device Support

Test and improve the system on mobile phones and tablets to make sure it works well on all screen sizes.

4. Add Notifications

Send reminders or updates to users about events, either through email or on the website.

5. Connect with UNIMAS Login System

Allow students to log in using their UNIMAS email and password to make login easier and more secure.

6.5 Conclusion

To conclude, the UNIMAS EventHub system was successfully developed and tested. It helps students find and join campus events and allows organizers to manage attendance and track merit points. The system solves the issue of scattered event information and supports both students and organizers.

Although some features are still limited and the system is not yet live, it works well and received positive feedback during testing. In the future, more features can be added to improve the user experience and make the system more useful across the university.

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Appendix A

Appendix A: Google Form Survey

FYP1: UNIMAS EventHub

Hey you! 📢

Are you tired of missing out on fun and exciting campus events because you didn't know they were happening? Or maybe you've struggled to keep track of all the merit points you've earned?

I'm Nurul Ain binti Ahmad Nasri, a final-year Software Engineering student at Universiti Malaysia Sarawak (UNIMAS), and I'm working on "**UNIMAS EventHub**", a platform designed to make staying updated on campus events and tracking your merit points super easy!

This quick survey (it'll only take **3 minutes**) will help me understand what students like you want in a platform like this. Your feedback will make all the difference in creating something that's actually helpful.

Your responses are totally anonymous and just for this project. Got questions? Hit me up at:

☎ 019-6244294
✉ 78455@siswa.unimas.my

Thanks for helping out—I really appreciate your time! 😊

How often do you participate in campus events at UNIMAS?

☐ Frequently

☐ Occasionally

☐ Rarely

☐ Never

What types of campus events do you typically enjoy?

☐ Academic seminars/workshops

☐ Sports and recreational activities

☐ Cultural events

☐ Volunteer opportunities

☐ Social gatherings

How often do you attend campus events?

- ☐ Weekly
- ☐ Monthly
- ☐ Once every semester
- ☐ Rarely

How do you currently learn about campus events?

- ☐ WhatsApp
- ☐ Telegram
- ☐ Social Media (IG, Twitter, Facebook etc)
- ☐ Word of mouth
- ☐ Other: _____

What device do you primarily use to access online event information?

- ☐ Smartphone
- ☐ Laptop
- ☐ Tablet
- ☐ Desktop

How do you prefer to find out about events?

- ☐ Social Media
- ☐ Email Notifications
- ☐ Posters/Flyers
- ☐ A dedicated event platform
- ☐ Other: _____

I find it challenging to stay informed about campus events.

	1	2	3	4	5	
Strongly Disagree	☐	☐	☐	☐	☐	Strongly Agree

Rate the importance of being able to track your merit points for campus activities.

	1	2	3	4	5	
Least Important	☐	☐	☐	☐	☐	Very Important

The ability to filter events by category or faculty would make it easier for me to find relevant events.

	1	2	3	4	5	
Very Disagree	☐	☐	☐	☐	☐	Very Agree

Rate the importance of real-time updates for event changes or cancellations.

	1	2	3	4	5	
Least Important	☐	☐	☐	☐	☐	Very Important

How likely are you to use a centralized platform like UNIMAS EventHub?

	1	2	3	4	5	
Very Unlikely	☐	☐	☐	☐	☐	Very Likely

How satisfied are you with the current methods of event communication at UNIMAS?

	1	2	3	4	5	
Very Unsatisfied	☐	☐	☐	☐	☐	Very Satisfied

Which feature would you prioritize in an event management app?

- ☐ Event registration
- ☐ Merit point tracking
- ☐ Google Maps integration for event locations
- ☐ Real-time notifications
- ☐ Event Details (Date, Time, Etc)
- ☐ Other: _____

What kind of platform would you prefer if there's a dedicated platform for event tracking?

- ☐ WebApp (User can use any browser in any device)
- ☐ Mobile App (User need to download the app, not available in web browsers)
- ☐ Other: _____

What would you like to see in the app design?

- ☐ Simple and minimalistic
- ☐ Colorful and engaging
- ☐ Focused on functionality
- ☐ Other: _____

Do you have any additional suggestions or features you would like to see in the UNIMAS EventHub?

Your answer: _____