A CENTRALIZED WEB SYSTEM FOR INDONESIAN STUDENTS AT UNIVERSITI KEBANGSAN MALAYSIA TO ENHANCE INFORMATION ACCESS AND COMMUNITY ENGAGEMENT

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ABSTRACT

The purpose of this project is to design an Indonesian student web system for Universiti Kebangsaan Malaysia as a focal information system to improve access to information and increase community participation. Indonesian students currently typically have fractured access to important academic, administrative, and social information via fragmented means like social media groups or casual networks, which consistently leads to miscommunication, inefficiencies, and decreased participation in campus events.

In order to address this problem, the proposed solution is an online platform that unifies various resources, including academic material, visa and housing information, campus events, and student marketplace. By centrally making information available, the platform aims to simplify information retrieval, facilitate communication between students, and allow for better-informed decision-making among existing and future students.

The system has been developed utilizing the Agile development methodology to ensure flexibility and continuous improvement throughout the process. The major technologies include HTML, CSS, JavaScript, PHP, Bootstrap, jQuery, and the CodeIgniter framework, with phpMyAdmin employed to ensure secure database management. For deployment, the project used Domainesia as the hosting service and cPanel for efficient server and file management. User Acceptance Testing (UAT) and Usability Testing were conducted with actual users to confirm that the system fulfils the specified functional and non-functional requirements.

The outcome is an easy-to-use and user-friendly centralized system that has been widely accepted by target users. Testing confirmed that the system functions as intended, and feedback highlighted its potential for increasing day-to-day access to information and creating a sense of belonging among Indonesian students at Universiti Kebangsaan Malaysia. The project shows how tailored digital solutions can be appropriately used to deliver specific student needs.

INTRODUCTION

Digital technologies have transformed ways of accessing information and resources by students in particular. The centralized platform is important in facilitating access to academic, administrative, and social resources and has been found useful, especially for international students who have to adapt to an environment that might be quite challenging for them. At UKM, Indonesian students represented through the Indonesian Students Association at Universiti Kebangsaan Malaysia find it difficult to navigate through fragmented systems in search of very important resources such as academic materials, guidance on how to obtain a visa, and housing information. In addition to this, research indicates the different challenges that international students are very likely to face, with access to institutional resources negatively impacting the academic achievement and social integration of international students at institutions of higher education. Glass et al. (2019); Zhou & Zhang (2021) thus underline the urgent need for an approachable solution.

A centralized platform, therefore, addresses these challenges by consolidating all the most important resources under one point of access. Beyond simplifying ways of accessing information, the approach encourages student community engagement, which enhances the sense of belonging among members. For instance, it has been proved that platforms for the integration of academic and social resources facilitate a better experience for international students, who sometimes feel isolated, and increase the level of satisfaction among them (Chen et al., 2020; Kahu & Nelson, 2018).

The proposed project is the development of a web system for Indonesian students at UKM. The academic, administrative, and community resources are to be organized in such a manner that accessibility and engagement will increase among current students, while the prospective students and alumni will also have a source of reliable information and a coherent resource hub.

RESEARCH METHODOLOGY

The Agile Development Methodology will be applied to the development of the centralized web platform for Indonesian students at UKM. This model is chosen because it is adaptive and iterative; the platform will evolve to meet the dynamic needs of its users. The Agile approach focuses on continuous improvement, enabling better task optimization and project predictability.

Requirement and Planning

During this phase, the functional and non-functional requirements were collected by conducting surveys and interviews with the stakeholders that included the Indonesian students and PPI UKM representatives. The core goals were to be able to bring all the academic, administrative and community information into one and use it and to make it easy with minimal effort on the side of the general users and the people administering it. Before

development, it was established that the development work will focus on the project scope, constraints and its key features: academic resources, visa and housing guidance, events, and a marketplace.

Design
The system architecture, database schema, and interface layouts were worked out in a way, which helps to guarantee scalability, maintainability, and positive user experience. The UI/UX prototyping and visual design, the emphasis made in Figma, was based on a clean, modernized, and mobile-friendly design. The functionality during navigation flows, role-base access controls, and content management structures were described to facilitate both the administrative functions and users.

Development
HTML, CSS, JavaScript, PHP, Bootstrap, jQuery, and CodeIgniter framework were used in the development of the platform whose database was managed in MySQL using phpMyAdmin. Work was done in iterative sprints, with one sprint dedicated to one of the modules, the academic resources, event announcements, or the marketplace listings.

Testing
Testing was carried out to ensure that the web centralized system met all requirements, which include functional and non-functional before it was placed on deployment. There were two major types of testing techniques to be implemented, which were User Acceptance Testing (UAT), and Usability Testing.

In the case of User Acceptance Testing, the test scenarios have been defined in advance to test all the major functionalities of the system by both the general and administrators. To complete such tasks as account registration, getting logged in and browsing scholarly resources, as well as the work with the visa and housing blocks, seeing news about events, using the search and filter options, and interacting with listings in the marketplace, testers relied on step-by-step procedures.

Usability Testing was also done to determine the level of clarity, ease of navigation, and user experience concerning the design. The structured questionnaire was broken down into several parts such as the application efficiency, interface satisfaction, usability and performance. It has been established that respondents had a 5-point Likert-scale rating system to rate their experience. Using this method, quantitative survey on ratings and feedback could be gathered thus enabling further improvement.

Implementation
The last phase involved the incorporation of all the developed modules to a complete functioning web system. The hosting platform was placed on Domainesia hosting and server and file management was controlled through cPanel.

RESULTS AND DISCUSSION

The centralized web system for Indonesian students at Universiti Kebangsaan Malaysia (UKM) has been successfully developed, integrating academic resources, visa and housing guidance, event announcements, and a student marketplace into a single accessible platform. The development focused on ensuring a responsive design, efficient navigation, and robust administrative tools. Below is the detailed implementation of each module.

The homepage acts as the entry point to the platform, designed with a full-width hero section, concise introductory text, and navigation to core modules such as Academic Resources, Visa and Housing, Events, and Marketplace (Figure 1).
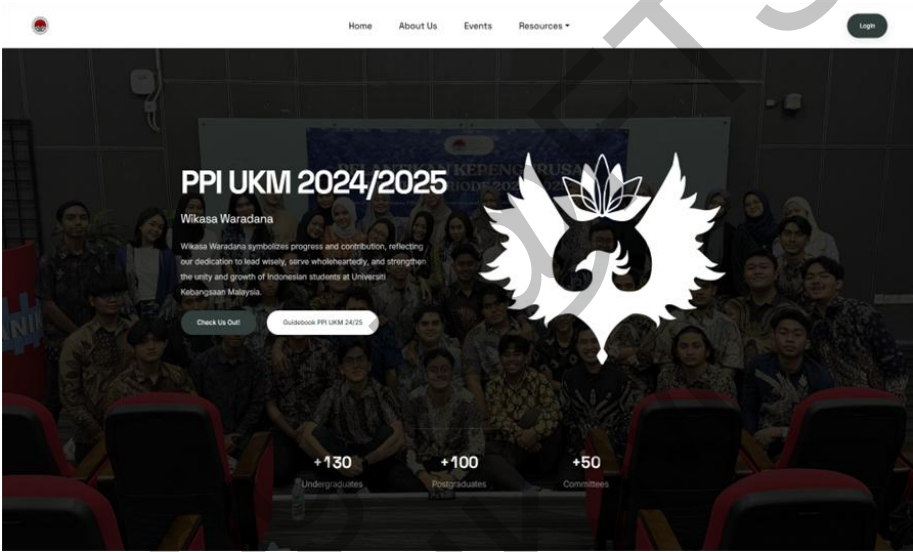
Figure 1 Home Page Interface

The events page presents a list of upcoming and past events relevant to the Indonesian student community. Each entry includes the event name, date, location, and a brief description. A link to a detailed event page allows users to view complete information (Figure 2).
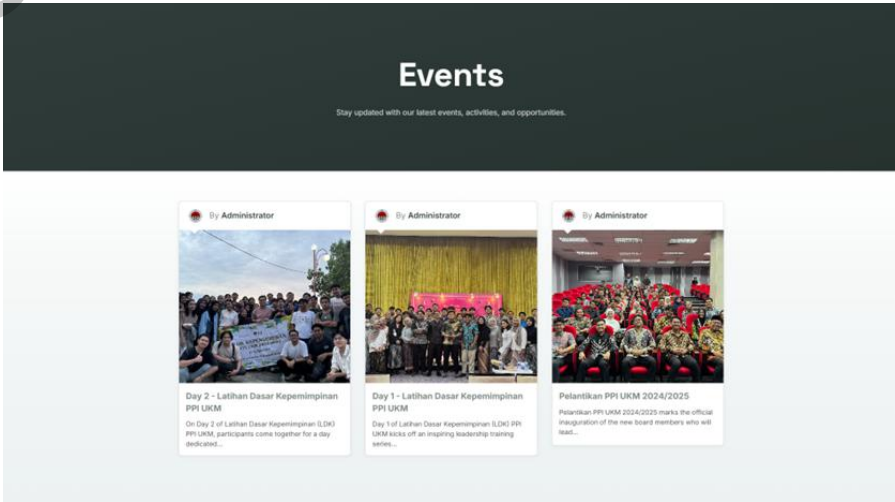

Figure 2 Events Page Interface

The academic page serves as a repository for learning resources, including lecture materials, past examination papers, and relevant references (Figure 3). Administrators have the ability to upload, edit, and remove resources as needed.
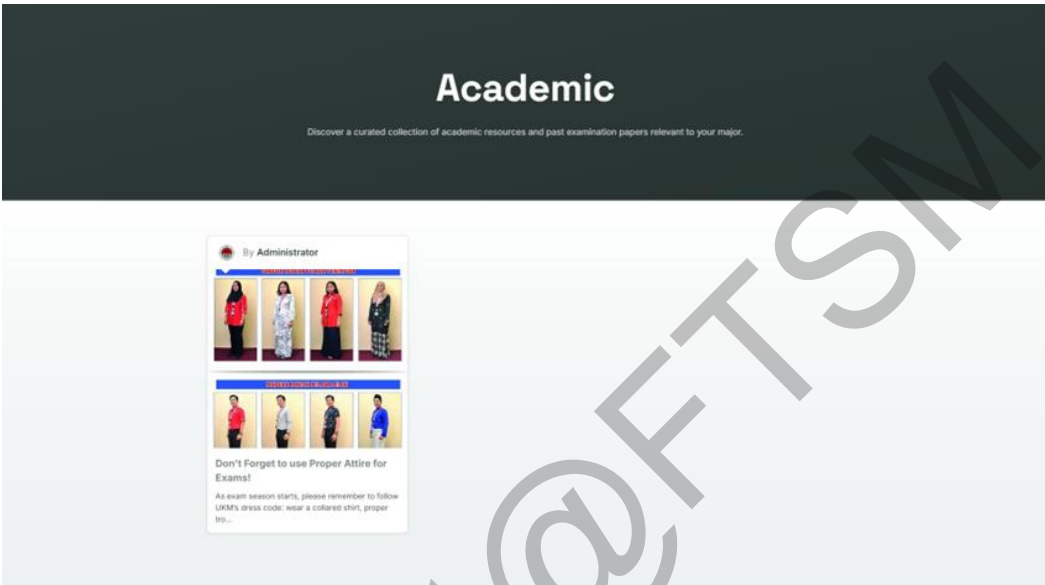

Figure 3 Academic Page Interface

Figure 4 provides essential information for international students regarding visa application procedures, renewal processes, and available housing options. Content is presented in a structured and easy-to-read format.
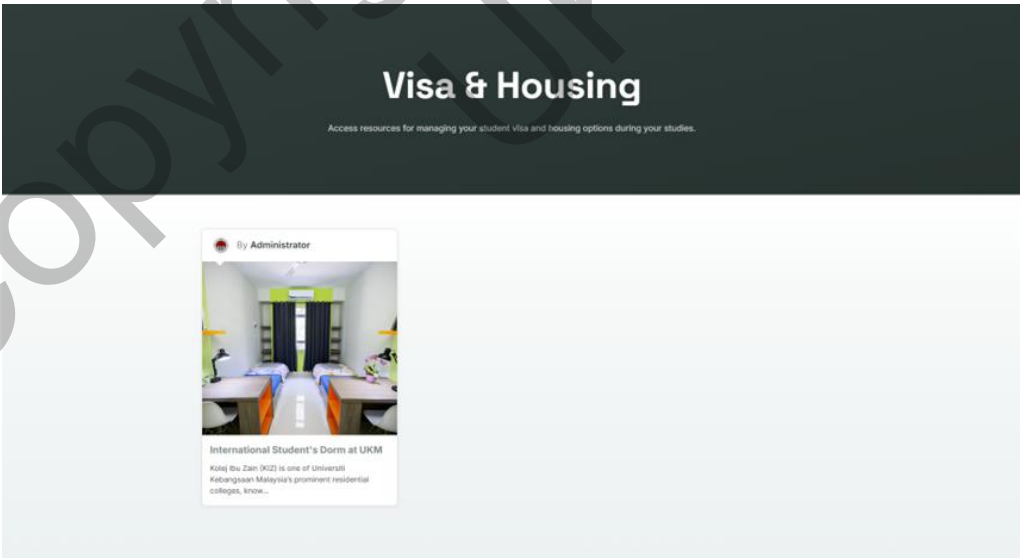

Figure 4 Visa and Housing Page Interface

The marketplace page (Figure 5) enables students to buy, sell, and promote goods or services within the community. Listings display a title, image, description, price, and seller contact details.
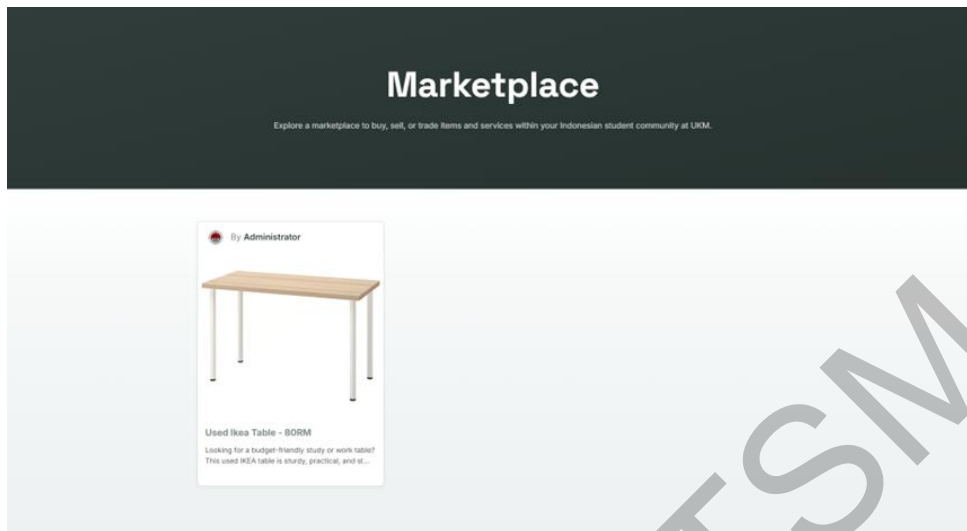
Figure 5 Marketplace Page Interface

Selecting any event, marketplace listing, or academic resource opens a detailed page view. For events, users can see the full description, venue details, and date (Figure 6). For marketplace listings, seller contact information is provided alongside product details.

Figure 6 Post Detail Page Interface

The login page (Figure 7) provides a secure authentication gateway for both administrators and registered users. It includes form fields for username and password, with error prompts for incorrect inputs. This ensures only authorized users can access the administrative functions of the system.
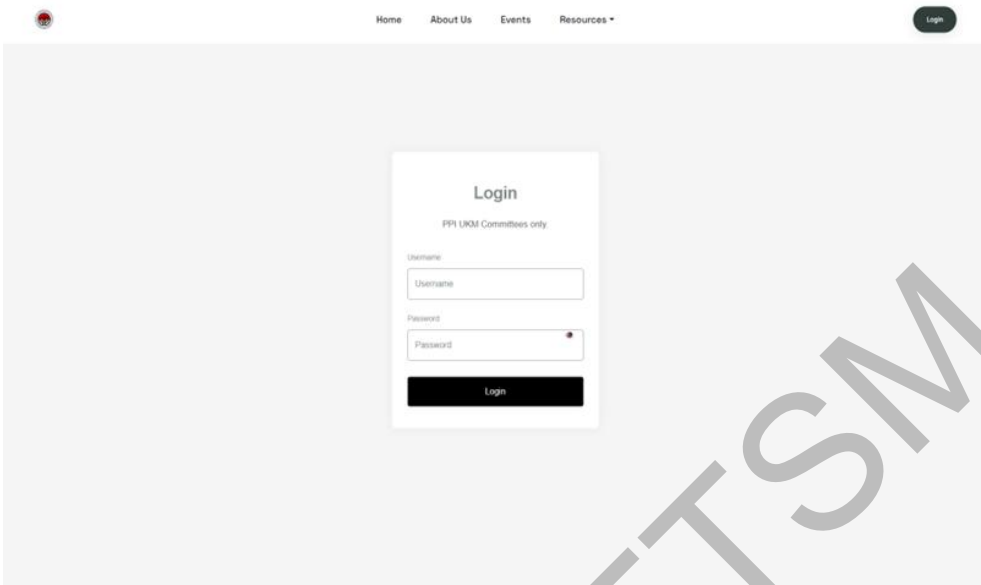
Figure 7 Login Page Interface

The backend post page (Figure 8) lists all submitted content: academic resources, events, and marketplace listings, allowing administrators to manage them efficiently. From this interface, posts can be edited or deleted as required.
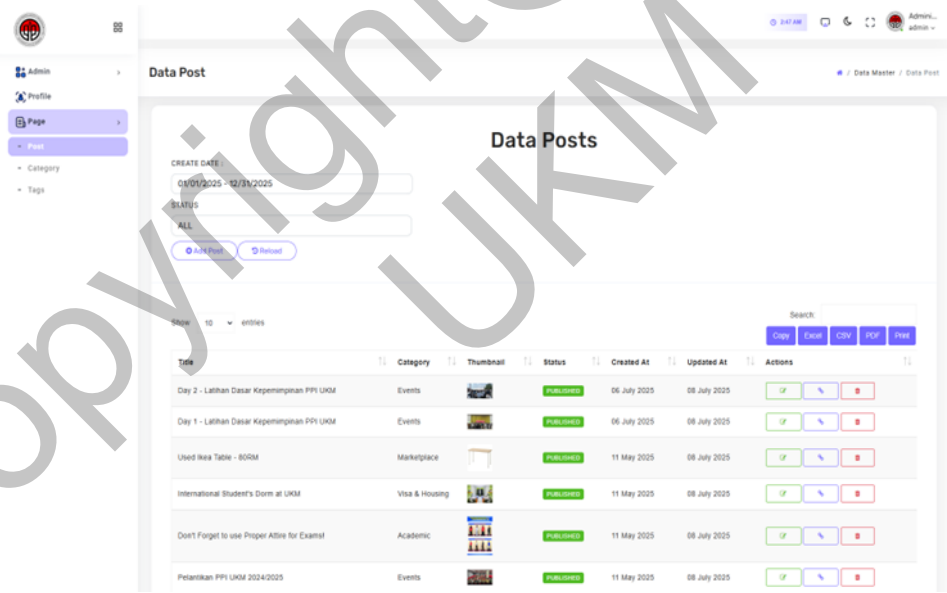

Figure 8 Backend Post Page Interface

The backend post content page (Figure 9) is used to create or edit posts in detail. It supports uploading files, entering titles and descriptions, and assigning content to categories. The interface ensures consistency in formatting and simplifies the update process for administrators.
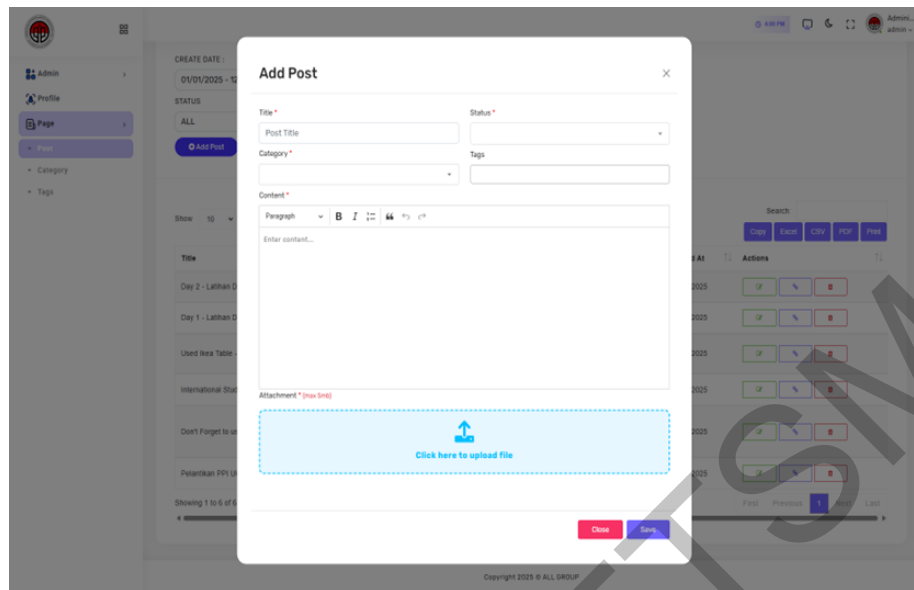
Figure 9 Backend Post Content Page Interface

The add user page (Figure 10) allows administrators to register new accounts, assign specific roles, and manage access rights. This feature ensures that only approved individuals can perform content management tasks, enhancing system security.
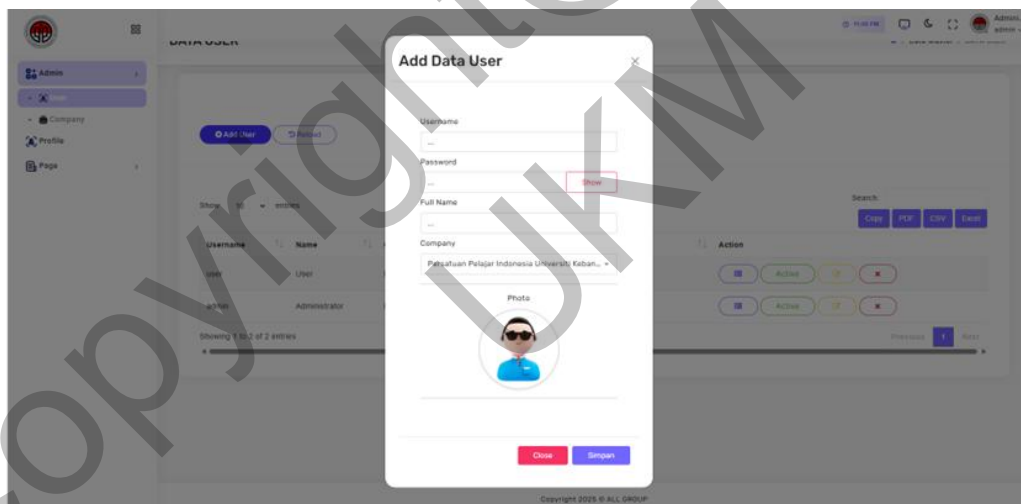

Figure 10 Add User Page Interface

User Acceptance Testing

A member of the PPI UKM committee performed a user acceptance testing to ensure that all functionalities of the system are performing as desired. Based on the test results shown in Table 4.3, all eleven scenarios: posting management (add, edit, delete), user management, committee login, up to general user activities such as viewing the homepage, academic resources, visa and housing information, event details, marketplace listings, and detailed information pages, were executed successfully. All use cases reached their expected result without failures, indicating that the system is deployable, stable, and user-friendly.

Table 1 User Acceptance Testing (UAT) Results

No.	Use Case / Scenario	Expected Result	Result
1	Committee logs in with valid credentials	Successful login	Pass
2	Committee adds a new post	Post is saved and visible	Pass
3	Committee edits a post	Post is updated correctly	Pass
4	Committee deletes a post	Post is removed successfully	Pass
5	Committee adds a user	User is added successfully	Pass
6	General user views homepage	Homepage information displays correctly	Pass
7	General user views academic resources	Academic resources accessible	Pass
8	General user views visa & housing information	Information displays correctly	Pass
9	General user views event information	Events display correctly	Pass
10	General user browses marketplace listings	Marketplace content visible	Pass
11	General user views detailed information pages	Detail pages open and display correctly	Pass

Usability Testing

For the usability testing of the Centralized Web System for Indonesian Students at UKM, a structured survey was conducted through Google Forms with 31 respondents. The purpose of this survey was to assess users' perceptions of the system's design, layout, navigation, functionality, and overall satisfaction. The questionnaire was divided into five sections: Demographic (Section A), Interface Design & Layout (Section B), Navigation & Feedback (Section C), Task Efficiency & Functionality (Section D), and Overall Satisfaction & Recommendations (Section E).

The demographic results indicate that 61.3 percent of the respondents were between the age of 21-25 and another range, 32.3 percent, were under 20 with a very minor percentage between 26 and 30. The proportions of gender were 71 percent men and 29 percent women. Most of them (93.5) were undergraduates but other few were alumni or postgraduates. On the experience with the web systems, the majority of the respondents were fairly experienced (45.2%) or experienced (38.7%), whereas other people had limited experience or no experience at all.

User perception of the interface design and layout was highly positive. A total of 93.5% agreed the system's design is attractive and professional, 90.4% felt the information

layout is clear and well-organized, 90.3% found the font size and style easy to read, and 93.5% agreed the colour scheme and theme are comfortable to view. These results indicate strong satisfaction with the visual presentation of the platform.

Navigation and feedback within the system were also rated positively. A total of 87.1% agreed the navigation is clear and not confusing, 80.7% felt the system provides adequate feedback after actions, and 83.9% indicated they could complete tasks without requiring additional help. This shows that the platform is intuitive and user-friendly.

Performance and functionality scored the highest among all categories. A total of 96.8% reported being able to complete tasks on time, 83.9% agreed all functions run smoothly without errors, and 93.6% felt the features were useful in carrying out tasks effectively. These results confirm that the system is both reliable and efficient in supporting user needs.

Overall satisfaction was high, with the majority of respondents expressing positive experiences using the system. Feedback highlighted appreciation for the clean design, clarity of information, and the platform's usefulness in daily student activities. Suggested improvements included adding more academic content (recommended by 22.6% of respondents), increasing marketplace variety (19.4%), refining button placements and text alignment (16.1%), and implementing features such as event/resource notifications (12.9%) to further enhance engagement.

Suggested Improvements
In order to increase the usability of the system and long-term value, several improvements can be considered for future development. First of all, focus should be given to increasing full mobile compatibility so that all pages, features, and layouts appear correctly and function well across various devices and screen sizes. Since most students consume information on mobile phones, a mobile-optimized version will greatly improve accessibility and satisfaction.

Second, incorporating live interaction features such as live chat, push notification, or instant messaging would make the platform dynamic and more responsive to users' immediate needs. It would facilitate faster communication between administrators and students and allow timely updates on events, news, or announcements of importance.

In addition, having an actual search and sort function for scholarship documents, event postings, and marketplace products would help users find certain information more conveniently. It would make browsing through mounds of material easier and keep the site relevant as additional data and posts are added in the future.

Finally, creating a clear workflow for regular content updating and incorporating continual user input will have the platform stay current and credible. Periodic usability checks and modular functionality for adding new features will allow the system to adapt to the evolving needs of Indonesian students in UKM.

CONCLUSION

Overall, this project was able to achieve its general goal of creating a working, centralized digital platform that ensures ease of access to important information and sustains the feeling of belonging among Indonesian students at UKM. The outcome demonstrates that through a planned scheme and responsive development, digital technologies can be effectively adopted to meet the unique needs of specific student groups.

System Advantages

One of the most important strengths of the system built is that it has the capacity to integrate scattered academic, administrative, and community resources into a single clear, understandable, and accessible platform. The neat presentation of the system, nice user interface, and systematic content management make it usable and convenient for day-to-day users and administrators as well. Another benefit is its capacity to enable interaction with the community, and hence students can remain updated on activities and opportunities and communicate with fellow students through a credible source.

System Weaknesses

Limitations also exist, and these should be addressed in future upgrades. Although the system is based on a responsive design platform, its full mobile compatibility is not yet entirely optimised, and this can affect user experience when opened through some mobile devices or screen sizes. Furthermore, the system currently lacks real-time interaction features such as real-time alerts or instant messaging, which can enhance user interaction and convenience even further. The website also depends on frequent content updates and constant management to provide updated and accurate information.

APPRECIATION

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