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Designing a Web-Based Internship Information System for Vocational High Schools

Hardison[1*], Riki Mukhaiyar[1], Mukhlidi Muskhir[1], Waskito[1], Afdal Luthfi[1]

[1] Vocational technology education study program, Universitas Negeri Padang, Padang, Indonesia

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Corresponding Author:
Hardison
hardison@gmail.com

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Abstract: This research aims to develop a web-based information system to overcome administrative inefficiencies in managing the Field Work Practice (PKL) program at Vocational High Schools (SMK). Using the prototype development method, the research followed three stages: collecting user requirements, developing and refining a mock-up, and evaluating system performance through Black Box Testing, specifically assessing system functionality, user interface, and user experience. The results show a reduction in time for administrative tasks such as student enrollment, schedule management, and industry collaboration. The system also achieved improved data accuracy through features such as real-time progress tracking and automated notifications. End-user feedback indicated high satisfaction with the system's usability and interface design. In addition, the system also supports government initiatives for technology integration in education by encouraging collaboration between schools, students and industry partners. The study concludes that the web-based system effectively improves administrative efficiency, promotes transparency and accountability, and prepares students to become a technology-based workforce.

Keywords: Information system; Vocational high school; Web-based internship

Introduction

Field Work Practice (FWP) is a fundamental element of the Vocational High School (VHS) curriculum, designed to furnish students with practical experience in their area of specialization (Rembang, 2020). FWP plays a crucial role in preparing students for the competitive labor market by fostering technical proficiency and workplace readiness. However, the administration of FWP programs frequently encounters significant challenges due to the reliance on manual or paper-based systems. These systems are prone to inefficiencies, errors such as data loss, and inconsistencies in record-keeping, which hinder smooth operations and collaboration among stakeholders (Castro, 2024; Chaurasia, 2023; Díaz et al., 2024). The challenge intensifies when it necessitates cooperation across schools, students, and industry partners, frequently demanding rigorous communication and systematic data management.

The advent of information technology presents an opportunity to address these challenges through the development of a web-based information system tailored to FWP management (Li et al., 2024; Setyawati & Hariri, 2021). Such a system offers numerous benefits, including extensive accessibility, real-time data updates, and secure, integrated data storage (Ashfaq et al., 2022; Hendrawan et al., 2024; Madamidola et al., 2024). A web-based system can streamline administrative processes such as student registration, scheduling, and performance evaluation, while enhancing collaboration among schools, students, and industry partners (Husin et al., 2024; Rahman et al., 2024). This system enables schools to monitor student progress in real-time, provides students with intuitive access to relevant information, and facilitates efficient communication with industry partners (Hendrawan et al., 2024; Samsudin & Januar, 2024).

The primary advantage of this web-based system is its capacity to enhance synergy between education and

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industry. A primary issue in executing FWP is reconciling the requirements of educational institutions and corporations. This system enhances communication between educational institutions and industry partners by facilitating the management of student work schedules, performance assessments, and digital reporting (Jackson et al., 2023; Nurfaizi & Hindarto, 2023; Ubaidah et al., 2021). This not only streamlines the administrative process but also facilitates long-term strategic collaboration between educational institutions and corporations. Conversely, students, as the primary consumers of this system, derive substantial benefits (Lacasandile et al., 2023). They can readily obtain FWP information, including guides, schedules, and evaluations, enhancing the organization of their learning process. Utilizing a web-based system imparts technological experience pertinent to the contemporary workforce, where proficiency in information technology is a highly sought-after ability (Dawarka, 2024; Kandemir et al., 2024; Mia et al., 2020).

This research is particularly significant because it addresses the pressing need for technological integration in vocational education, aligning with government initiatives to enhance education quality and workforce competitiveness through digital solutions (Chatterjee et al., 2021; Hidayat et al., 2024). The government underscores the need to integrate technology into vocational education enhancement programs to elevate educational quality and better equip students for workforce competitiveness (Detcova & Rogojnicova, 2024). A web-based information system for managing FWP in VHS serves as a realistic solution and matches the government's aim of fostering accessible, quality, technology-driven education (Ghosh & Ravichandran, 2024). This solution facilitates transparent and accountable data management, simplifying reporting for schools to relevant stakeholders, including parents and governmental bodies (Zhou, 2024).

Nevertheless, the development and execution of this system necessitate meticulous research and strategic planning (Animashaun et al., 2024; Ekiz Kavukoğlu & İşçi, 2024). The system must fulfill the requirements of users, including schools, students, and industrial partners (Silvana et al., 2021). This research seeks to ascertain particular requirements in FWP management, develop pertinent features, and evaluate the system's efficacy in facilitating FWP implementation (Vidianti & Dn, 2020). Moreover, technological difficulties, including device compatibility, data security, and network infrastructure availability, must also be addressed during the development phase (Chandra et al., 2022).

The novelty of this research lies in its focus on designing a prototype web-based information system specifically tailored to the unique administrative and collaborative needs of FWP programs in VHS. Unlike existing systems that address general educational or administrative functions, this study emphasizes features that directly address the challenges of managing FWP, such as real-time progress tracking, automated notifications, and seamless communication between stakeholders.

The primary objectives of this research are threefold: to identify and analyze the specific requirements of an efficient FWP management system; to develop and implement a prototype web-based system equipped with relevant features to meet these needs; and to evaluate the system's functionality, user interface, and overall effectiveness in streamlining FWP processes. These objectives address the critical need for an adaptive, contemporary solution that aligns with the demands of the modern workforce and advances the quality of vocational education.

This research is important because it provides a strategic response to the increasing demand for technology-driven education solutions. It highlights the potential of web-based systems to overcome persistent administrative challenges, improve collaboration, and prepare VHS graduates for the evolving demands of the labor market.

Method

The research methodology employing the prototype development model is an iterative process designed to produce goods or systems that fulfil user requirements through a development cycle that incorporates direct user feedback. According to Fortuna et al. (2023); Luthfi et al. (2024), the prototype model was developed in three stages. This methodology comprises three primary stages: Customer Listening, Mock-Up Construction/Revision, and Customer Testing of the prototype, which are iterated until the product attains its optimal state. The following diagram shows the path of the steps:

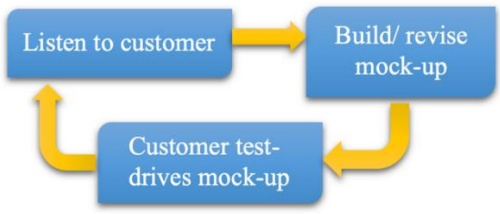

Figure 1. Prototyping method

The initial phase, namely listening to customer, commences with a comprehensive grasp of their requirements and expectations. This procedure is conducted by interviews, surveys, and direct user

observations. The primary aim of this phase is to ascertain the challenges encountered by users, the particular requirements that the system must fulfill, and the anticipated functionalities. This phase of designing a web-based information system for internship management may engage students, educators, and industry representatives to guarantee the system's relevance to their requirements. Such as tracking internship schedules, reporting progress, and providing real-time communication features.

After identifying user demands, the next step is creating a mock-up as an initial prototype, serving as a visual or functional representation of the system. This mock-up helps users understand the system's functionality and design. The development team focuses on essential features based on user requirements and collects user feedback on design, usability, and features. In developing a web-based Field Work Practices (FWP) management system for Vocational High Schools (VHS), the prototype includes student registration, partner company administration, and FWP progress tracking. Feedback from users, such as educators, students, and industry collaborators, is used to iteratively improve visual elements, user engagement, and features, ensuring the system is user-friendly and meets FWP administration needs. Researchers also utilize UML diagrams, such as class and use case diagrams, to model the system's structure, clarify class relationships, and guide software engineers in creating organized, coherent code.

Upon the creation of the initial prototype, customer feedback from the preceding cycle is utilized to refine or enhance the mock-up to more effectively address their requirements. This phase engages users in evaluating the developed mock-up. Users have the opportunity to test the prototype and offer direct comments regarding its functionality, comfort, and relevance. One of the methods used in application testing is Black Box Testing (Altulaihan et al., 2023; Fatmawati et al., 2023). Where testers only focus on inputs and outputs without knowing the internal details of the system being tested. Black Box Testing is used to ensure that all application functions run according to the target and user needs. This test involves testing various cases, both valid and invalid, to check whether the application functions as it should. This feedback is the foundation for enhancing and perfecting the mock-up. During the creation of a web-based information system for internships, students can evaluate the scheduling and progress reporting functionalities, while educators and industry representatives can appraise the system's usability in overseeing student activities. This technique aids in identifying deficiencies or areas for enhancement in the system before the finalization stage.

Result and Discussion

Result

The research findings on the creation of a web-based internship information system prototype for vocational high schools commence with the customer feedback phase, which emphasises the assessment of user requirements, including those of students, educators, and internship supervisors. This phase is a crucial basis for formulating the concept and functionalities of the system to be created. The subsequent build/revise mock-up phase entails the development of a preliminary prototype that embodies the intended design and functionality of the web-based system. Additionally, the client test-drive mock-up phase encompasses evaluating the prototype via black box testing to assess the system's functioning. This iterative method guarantees that the created web-based application adheres to the design standards and efficiently facilitates internship management at vocational high schools.

Listen to customer

During the design phase of the information system development for Field Work Practices (FWP) at VHS, the analysis of feature requirements is a critical step to guarantee that the generated system effectively facilitates the seamless execution of the FWP process. According to observations and literature reviews, the essential features required encompass student registration and enrollment, partner company administration, student placement, assessment monitoring and evaluation, schedule management, academic and corporate supervision, final reporting, success metrics, announcements and notifications, as well as data security and privacy. These features aim to streamline the entire FWP process, from administration to final reporting, hence establishing an effective and cohesive system.

Furthermore, the hardware and software requirements were assessed to effectively facilitate the functioning of the web-based information system. The system necessitates a server with minimum specs of an Intel Xeon or AMD EPYC CPU, 16 GB of RAM, and a 512 GB SSD, together with administrative and user computing devices tailored to individual requirements. A robust network infrastructure with a minimum speed of 50 Mbps is a crucial element. Server platforms like Apache or Nginx, databases such as MySQL or PostgreSQL, frameworks including Flask or Laravel, together with security measures like firewalls and backup services, are employed to guarantee the system operates securely and efficiently. This system, through an optimal integration of hardware and software, is anticipated to fulfill the requirements of all users,

including administrators and students, in overseeing street sellers at VHS.

Build

The development phase in building a web-based information system for managing Field Work Practices (FWP) in Vocational High Schools (VHS) encompasses the design and implementation of the interface and core functionalities of the system. At this juncture, researchers develop and construct preliminary prototypes that embody user requirements, including student registration functionalities, partner company administration, and FWP progress tracking. Following the creation of the prototype, modifications were implemented in response to feedback from users or evaluators, including educators, learners, and industry collaborators. This method entails enhancing visual components, user engagement, and feature modifications to render the system more user-friendly and pertinent to the requirements of FWP administration in VHS. Revisions were conducted iteratively until the prototype was deemed ready for the subsequent round of development.

The build/revise phase generated Unified Modeling Language (UML) representations, including use case diagrams and class diagrams, to illustrate the system's processes and structure. A preliminary prototype was created as a web interface to demonstrate the design of essential functions, including schedule management, FWP reporting, and automated notifications. This prototype aids users in comprehending the system's concept and serves as the foundation for subsequent development toward the realization of a functional and efficient web-based information system.

The use case diagram is a graphic depiction illustrating the interactions between one or more actors and the information system under development. This diagram identifies the many functions within the information system and determines the parties authorized to access these functions. Figure 2 illustrates the use case diagram of the information system for Field Work Practices (FWP) at VHS.

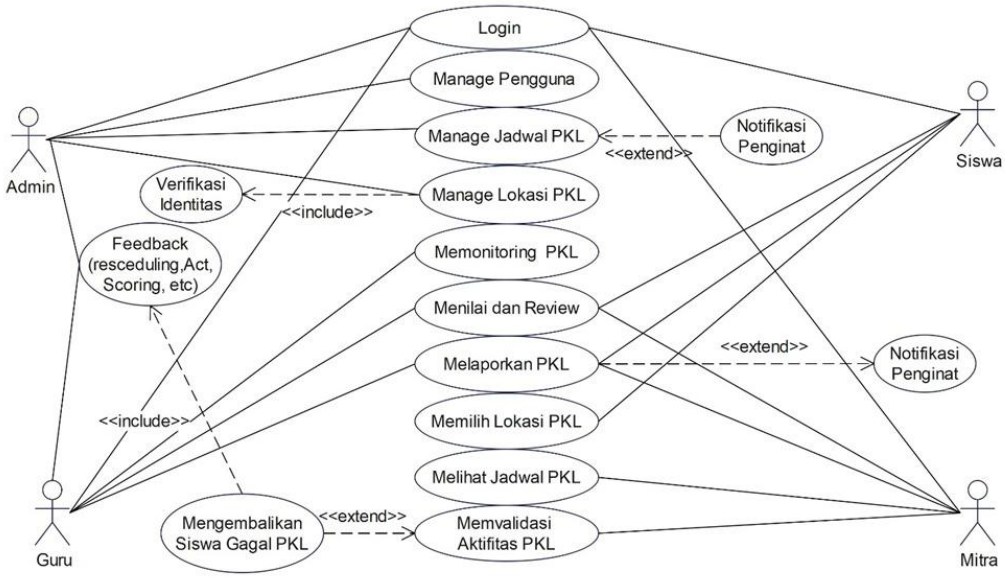

Figure 2. Use Case Diagram

Figure 2 illustrates the use case diagram for the creation of information systems for Field Work Practices (FWP) in vocational schools (VHS). The use case diagram depicts the relationship between actors and primary functionalities within the system. The primary participants in this system are administrators, educators, learners, and industry collaborators, each with distinct roles and responsibilities. The administrator oversees the comprehensive management of the system, encompassing login procedures, user administration, FWP schedule coordination, FWP location assignment, and student identification validation.

Furthermore, the administrator can offer comments including rescheduling, grading, and scoring. Educators are responsible for overseeing FWP activities, evaluating, offering feedback, verifying student engagement during FWP, and managing students who fail to finish the FWP program effectively. Conversely, students may utilize the system to log in, choose FWP locations, access schedules, document daily activities, and receive reminder messages pertinent to schedules

and reports. Industry partners play a crucial role in assessing student activities during FWP and offering comments on student achievement. The system includes reminder notification tools to facilitate effective communication among all participants, allowing each to perform their tasks efficiently. These elements are intended to guarantee the system operates effectively in facilitating the comprehensive FWP management process, from planning to final assessment.

Researchers develop class diagrams, a sort of diagram in the Unified Modeling Language (UML), to model the static structure of a system, in addition to use case diagrams. Its purpose is to meticulously model the system architecture, elucidate the interrelations among classes, and offer direction to software engineers for constructing organized and coherent code. Figure 3 presents a class diagram of the FWP information system at VHS.

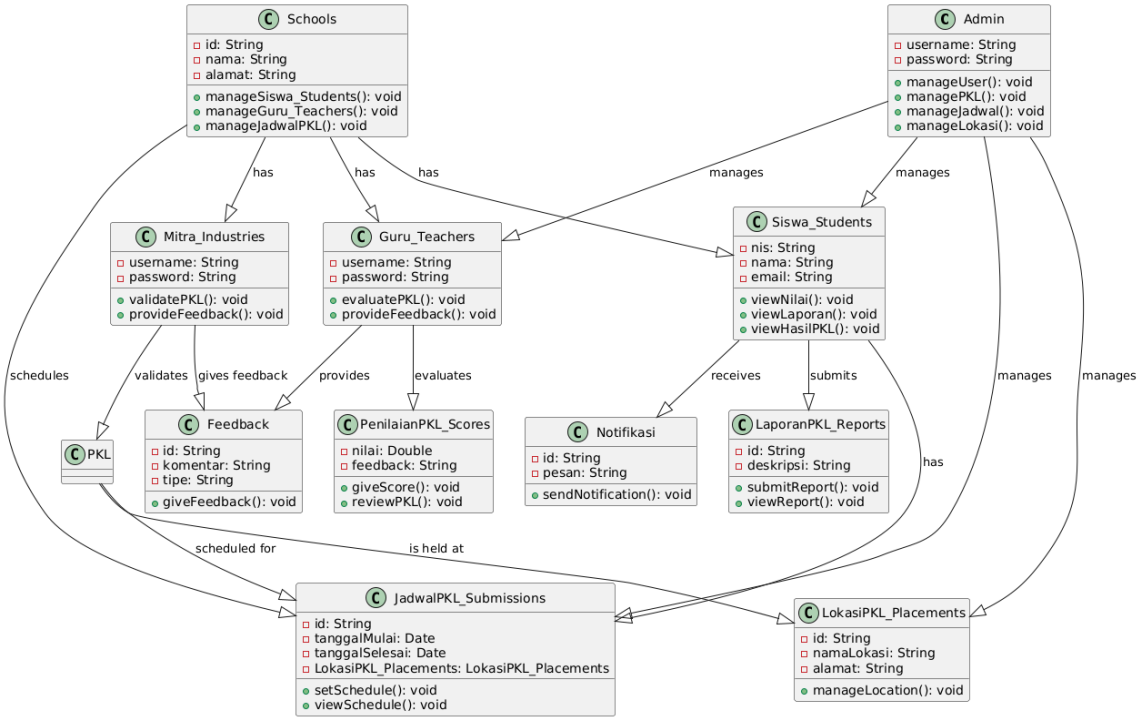

Figure 3. Class Diagram

Figure 3 illustrates the Class Diagram for the Field Work Practice (FWP) information system at VHS, depicting the structural links among the objects engaged in FWP management. The primary entities comprise Schools, which oversee the management of student data (Students_Students), educators (Teachers_Teachers), FWP schedules (ScheduleFWP_Submissions), and FWP locations (LocationFWP_Placements). Administrators primarily oversee user management, FWP schedules, FWP locations, and granting students access to their FWP grades, reports, and results. Students may submit FWP reports using the FWP_Reports class, which are subsequently evaluated by teachers through the FWP_Scores entity, incorporating assessment and scoring functionalities. Educators offer feedback via the Feedback class, whilst corporate partners (Mitra_Industries) are responsible for certifying students' FWP activities and supplying feedback to the educational institution. Notifications are dispatched to students using the Notification entity to remind them of specific schedules or responsibilities. All operations are coordinated in ScheduleFWP_Submissions, which oversees the timing and venue of FWP execution based on location data from LocationFWP_Placements. This graphic illustrates the organized interaction among different components to facilitate the effective implementation of FWP in VHS.

Furthermore, a user experience (UX) design is developed for a web-based information system that facilitates the management of Field Work Practices (FWP) in Vocational High Schools (VHS), emphasizing the creation of an interface that is intuitive, responsive, and aligned with the requirements of primary users, specifically admins, teachers, students, and industry partners. The design process commences with comprehending the FWP workflow, including student registration, placement in partner organizations, activity reporting, and performance assessment. Wireframes and preliminary prototypes were created to evaluate the layout, navigation, and comprehensibility of the interface. Essential components, such the dashboard that presents schedules, reports, and notifications, were

engineered for optimal accessibility and usability across several platforms, such as laptops and mobile phones. Figure 4 illustrates a wireframe design focused on user experience.

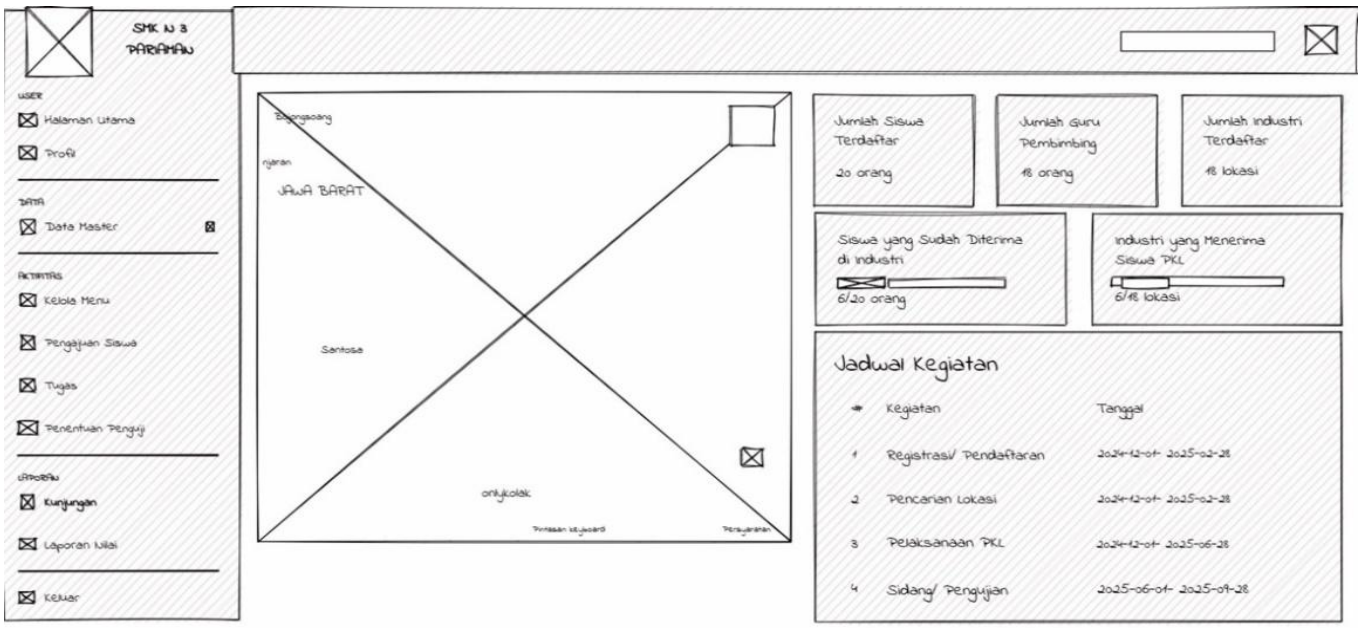

Figure 4. Design wireframe mode

Figure 4 presents a wireframe of the interface design for a web-based information system intended to manage Field Work Practices (FWP) in Vocational High Schools (VHS). The navigation section on the left comprises several primary elements that facilitate access for users, including administrators and educators, to menus such as profile management, student and partner master data, activity scheduling, assignment administration, and FWP visit and grade reports. Every feature is engineered to facilitate the effective handling of FWP-related data and operations. A central location map illustrates the spread of industry partners, offering a visual representation of FWP sites that assist students and administrators in the selection and placement of students in FWP positions.

The right section of the wireframe presents a statistics dashboard featuring critical data, like the count of enrolled students, the number of mentor teachers, and the status of students accepted by industrial partners. Furthermore, a tabulated schedule of operations has been created to facilitate user oversight of the FWP stages, encompassing registration, implementation, and final evaluation. The design aims to deliver an easy user experience, enhance data management, and expedite collaboration among schools, students, and industry partners. This strategy is anticipated to enhance efficiency and transparency in the management of FWP within VHS using the web-based information system.

After the results of the design process, the next results are obtained which produce a web-based information system that supports Field Work Practices (FWP) at Vocational High Schools (VHS). The results are obtained in the form of a clear structure, dividing the main features such as student registration, schedule management, determining examiners, assignments, monitoring progress, to final reporting and student final grades. The main view features an interactive dashboard that provides up-to-date information, such as schedule notifications or reports that need to be followed up.

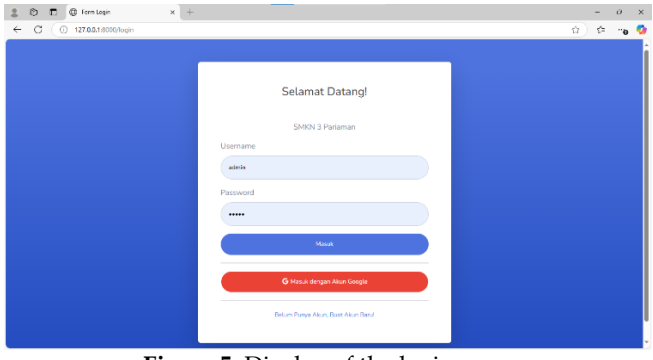

Figure 5. Display of the login page

Figure 5 illustrates the login form interface of the web-based information system for administering Field Work Practices (FWP) in VHS. This login page features a straightforward and user-friendly interface, enabling users, including administrators, educators, students,

and industry partners, to access the system via username and password or through Google account integration.

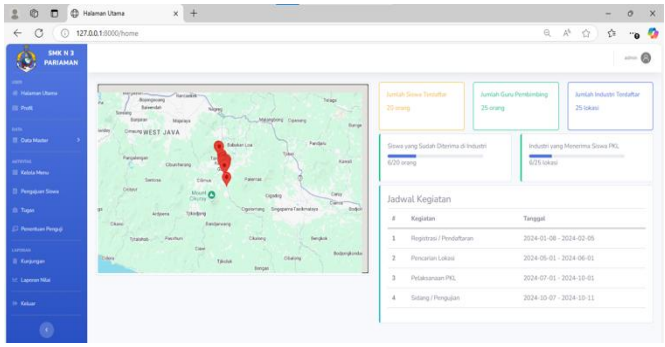

Figure 6. Display of the main page

Figure 6 illustrates the primary dashboard interface of the web-based information system for administering Field Work Practices (FWP) in VHS. This dashboard displays critical information, including the number of students, supervising educators, registered industries, and an organized FWP activity timetable. An interactive map displays the locations of industrial partners, facilitating students' selection of FWP sites.

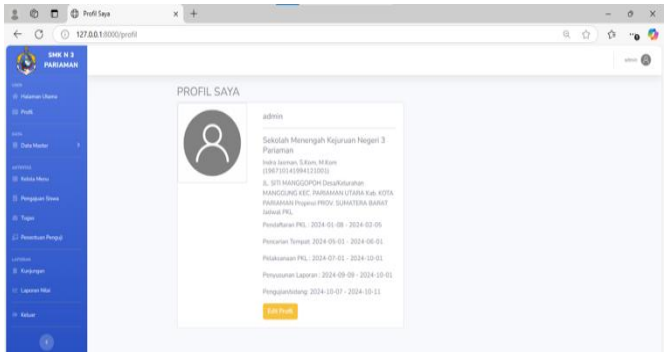

Figure 7. Display of the admin profile

Figure 7 illustrates the Admin Profile page within the web-based information system for administering Field Work Practices (FWP) at vocational institutions. This page presents comprehensive user information, including name, position, address, and internship schedule. This functionality enables users, including administrators, to access and modify their profile information via the "Edit Profile" button.

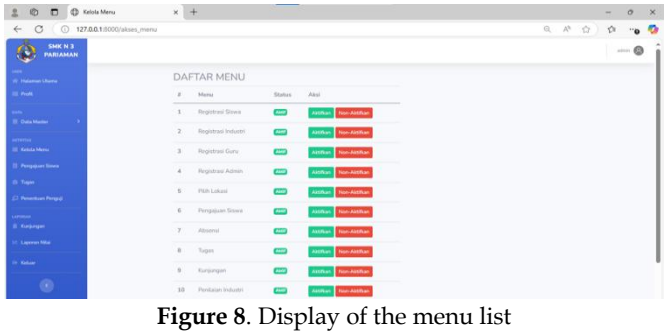

Figure 8. Display of the menu list

Figure 8 illustrates the Menu Management interface within the web-based information system designed for overseeing Field Work Practices (FWP) at vocational institutions. This page permits the administrator to activate or deactivate multiple functionalities, including student registration, industry registration, attendance tracking, student submissions, and industry evaluations. The administrator can modify feature access based on operational requirements with this control.

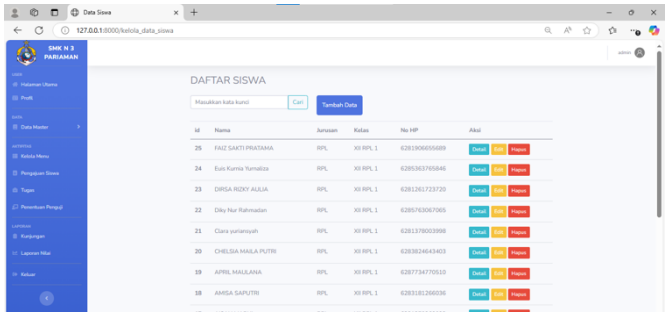

Figure 9. Display of the student list

Figure 9 illustrates the Student List page within the web-based information system designed for the administration of Field Work Practices (FWP) at vocational schools. This page presents student information, including name, major, class, and phone number, along with a search function to enhance data management. The administrator can execute operations including viewing, changing, or removing student data via the provided action buttons.

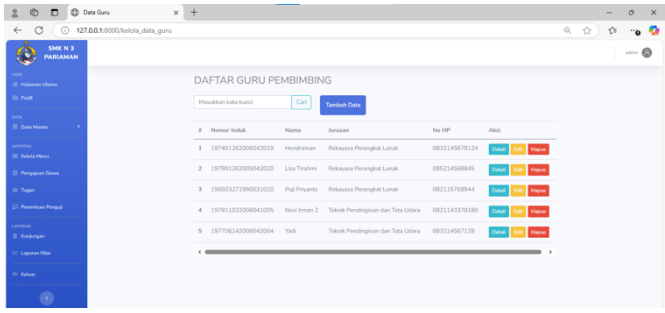

Figure 10. Display of the supervisor teacher list

Figure 10 illustrates the Supervisor Teacher List page within the web-based information system for administering Field Work Practices (FWP) at vocational institutions. This page presents the information of supervising teachers, including employee ID, name, department, and phone number, along with a search functionality to enhance data retrieval. The administrator can execute activities including examining information, and modifying or removing instructor data via the provided action buttons.

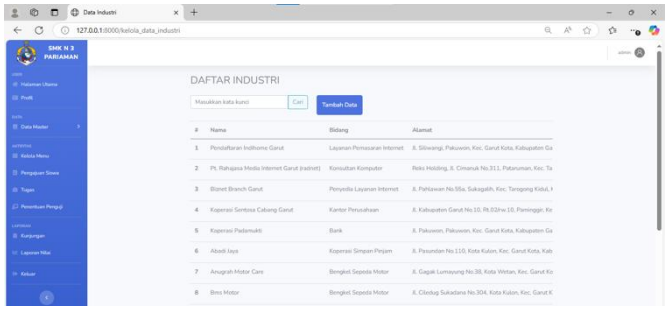

Figure 11. Display of the industry list

Figure 11 illustrates the Industry List page within the web-based information system for administering Field Work Practices (FWP) at vocational institutions. This page presents details regarding industry partners, including company name, business sector, and full address, and has a search functionality to enhance data management. The administrator can input new data via the "Add Data" button, facilitating dynamic modifications to the partner list.

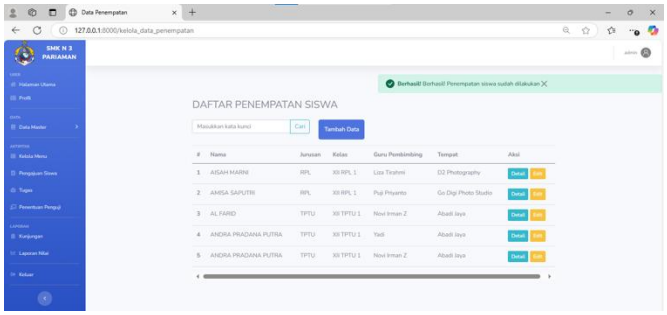

Figure 12. Display of the student placement list

Figure 12 illustrates the Student Placement List page within the web-based information system designed for administering Field Work Practices (FWP) at vocational institutions. This page documents student placement information, including student names, majors, courses, supervising instructors, and internship sites. The administrator can input new placement data via the "Add Data" button or manage current data by reviewing specifics or modifying student information.

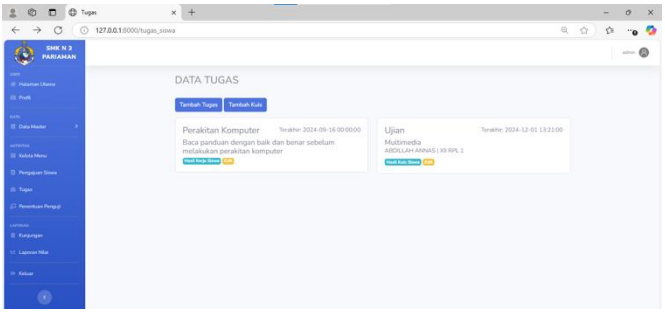

Figure 13. Display of the task data

Figure 13 illustrates the Task Data page within the web-based information system for overseeing Field Work Practices (FWP) at vocational institutions. This page enables administrators or educators to incorporate assignments or quizzes pertinent to the FWP activities. Every assignment includes a description, a deadline, and functionalities to review students' submissions or modify assignment details.

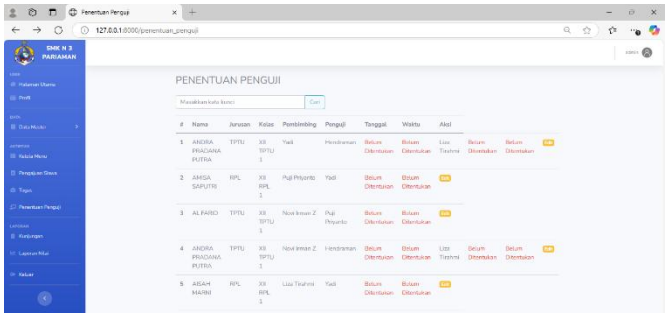

Figure 14. Display of examiner assignment

Figure 14 illustrates the Examiner Assignment page within the web-based information system designed for managing Field Work Practice (FWP) at vocational institutions. This page enables the administrator to oversee examiner data, including student names, majors, classes, supervisors, examiners, and the scheduling and timing of examinations. The ambiguous status is prominently exhibited, facilitating the administrator's ability to modify information via the "Edit" button.

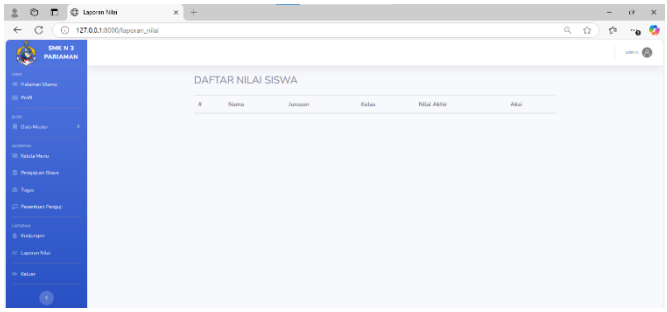

Figure 15. Display of the student grade report

Figure 15 illustrates the Student Grade Report page within the web-based information system designed for the administration of Field Work Practices (FWP) in vocational schools. This website is intended to present a compilation of student grades, encompassing details such as name, major, class, final grade, and choices for data management.

Customer Test-drives Mock-up

The final stage, the testing stage is an important process for finding errors in an application. A good test case must be able to reveal hidden errors, and testing is declared successful if it successfully detects errors that were not previously found. One of the methods used in

application testing is Black Box Testing. Where testers only focus on inputs and outputs without knowing the internal details of the system being tested.

Black Box Testing is used to ensure that all web-based information system functions run according to the target and user requirements. This test includes various scenarios, both valid and invalid, to verify whether the system functions as intended. In the context of designing a web-based internship information system for Vocational High Schools, this test ensures that features such as internship registration, company data management, and student activity reporting can run properly and effectively in supporting the student internship process.

Table 1. Application black box testing

Testing	Test scenario	Succes parameters	Category
Login Page	User enters valid username and password	User successfully logs into the main dashboard	Succeed
Main Page	System displays statistics, schedules, and a map of partner locations	Statistics, internship schedules, and partner locations are displayed correctly	Succeed
Profile Page	User views and edits profile information	Profile information can be viewed and updated according to user input	Succeed
Manage Menu Page	Admin activates and deactivates specific features	Feature status changes according to the admin's instructions	Succeed
Student List Page	Admin adds new student data	New student data is saved in the system and appears on the student list	Succeed
Mentor Teacher List Page	Admin adds or edits mentor teacher data	Mentor teacher data is saved and updated correctly.	Succeed
Industry Partner List Page	Admin adds partner industry information	Partner industry data is displayed and saved correctly	Succeed
Student Placement Page	Admin assigns students to specific partners	Student placement data is displayed and can be updated	Succeed
Task Data Page	Admin adds new tasks for students	New tasks appear in the task list and can be completed by students	Succeed
Examiner Assignment Page	Admin assigns examiners to each student	Examiner data is saved and modified correctly	Succeed
Student Grade Report Page	Teachers input students' internship grades	Student grades are saved and appear on the grade report page	Succeed

Table 1 presents the outcomes of the Black Box Testing conducted on the Web-Based Internship Information System for Vocational High Schools, illustrating the effective operation of the primary features across several situations. System testing encompasses the login interface, dashboard display, profile administration, menu setup, management of student and mentor information, oversight of industrial partners, student placement, task allocation, examiner designation, and grade documentation. Every feature undergoes testing to verify data accuracy, appropriate display, and seamless interaction, fulfilling the anticipated results. This testing verifies that the system is proficiently structured to optimize the internship process, guaranteeing effective administration, transparency, and accessibility for all stakeholders engaged in the internship program at vocational high schools.

Discussion

This research is grounded in information management theory, which underscores the need of employing digital technology to enhance efficiency and precision in data management. This idea posits that web-based technologies enhance accessibility, accelerate information dissemination, and minimize human error. Prior study, like that by Díaz et al. (2024), demonstrated that the deployment of web-based information systems can enhance administrative efficiency by 83% and reduce information retrieval time. Moreover, practice-based learning theory underscores the necessity for students to engage in activities that closely resemble real-world scenarios, using contemporary technologies they would face in the professional environment. Consequently, the findings of this study endorse the creation of a web-based information system that enhances administration and offers technological experience to students.

This research presents a novel methodology in contrast to prior studies on the digital management of fieldwork practice. The research conducted by Greta & Castro (2024) examined a mobile-based monitoring system using GPS position tracking, although it omitted the integrated reporting and scheduling management

components included in this study. The research conducted by Mammi & Ying (2021) utilized genetic algorithms for academic scheduling; however, it was mostly confined to internal scheduling management and did not incorporate collaboration with external entities, such as industry partners. This research broadens its reach by incorporating digital reporting, data management, and automated alerting functionalities, aimed at establishing a more comprehensive ecosystem for students, educators, and industry stakeholders in the oversight of street vendors.

The findings of this study align with several comparable studies that underscore the significance of digitization in the administration of internships or street vendors. Prasetyo et al. (2024) discovered that web-based information systems enhance data accuracy and administrative efficiency in secondary school. A study conducted by Chaurasia (2023) demonstrated that a web-based management system can alleviate administrative burdens by consolidating student data, scheduling, and reports. Moreover, a study by Ali et al. (2021) underscored the significance of internet-based systems in enhancing the quality of academic services, particularly during pandemic circumstances, hence emphasizing the necessity for digitization in the education sector. The findings of this research, bolstered by previous investigations, reinforce the role of web-based systems as a crucial option for the efficient and successful management of street sellers.

This research, underpinned by a robust theoretical framework and corroborated by prior investigations, significantly advances the development of a digital solution for the issues associated with street vendor management. This research employs an innovative and comprehensive method that satisfies administrative requirements while facilitating the modernization and relevance of vocational education to industrial demands.

Conclusion

The development of a Web-based Internship Information System for Vocational High Schools (SMK) directly addresses the challenges associated with conventional manual methods of managing Field Work Practices (PKL), such as inefficient data management, communication delays, and lack of transparency. By leveraging technology, the system enables more structured processes, such as automatic student registration, real-time schedule management, and centralized performance assessment, thereby reducing the administrative burden on schools and promoting a more efficient workflow. User-centered design principles and iterative prototyping ensure that the system meets the needs of stakeholders, by enhancing user experience through features such as intuitive navigation, real-time notifications, and easily accessible performance dashboards. In addition, this research highlights how the integration of web-based solutions supports government initiatives to modernize vocational education by bridging the gap between schools and industry. Unlike previous systems, this research makes a unique contribution by emphasizing transparency and accountability in the management of internships, as well as equipping students with practical experience in utilizing modern digital tools. In conclusion, the system not only addresses long-standing operational inefficiencies, but also aligns with the broader goal of preparing SMK students with skills and systems relevant to today's labor market, offering an adaptable model for similar educational institutions.

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Writing—original draft preparation, methodology, Analysis, HH; Conceptualization, review, MM; Conceptualization, review, RM, Editing, AL, formal analysis, WW.

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The authors declare no conflict of interest.

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