Alum Section Revitalization: Analysis and Redesign of SMK Telkom Bandung Website using Goal-Directed Design

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Abstract

This study addresses the usability challenges of the alumni management system at SMK Telkom Bandung by redesigning the platform using the Goal-Directed Design (GDD) methodology. The existing system faced critical issues, including fragmented alumni information, poor interface design, and inefficient manual administrative processes. Through interviews and observations with 30 participants—including students, alumni, parents, and administrative staff—this research identified key pain points and user needs. The modeling phase developed user personas, goals, mental models, and interaction models to inform the design process. The requirements phase mapped user goals to system features, which guided the creation of a conceptual model and wireframes during the framework phase.

The redesigned alumni platform was evaluated using the System Usability Scale (SUS) with 18 participants. The results showed a significant improvement in usability, with the SUS score increasing from 58.06 to 82.92, surpassing the industry standard of 68. The new platform resolved key pain points by introducing a centralized testimonial repository, an alumni distribution map, and an automated job posting system. Additionally, the administrative dashboard streamlined data validation workflows, reducing manual workload and improving operational efficiency.

This research demonstrates how Goal-Directed Design effectively aligns system functionalities with user needs, resulting in measurable usability improvements. The study concludes that the redesigned platform enhances user engagement, optimizes administrative processes, and delivers a more intuitive and efficient alumni management system. Future work is recommended to further refine the job search filtering system, improve submission feedback mechanisms, and expand usability testing to a broader user base.

Keywords: ***Alumni Portal, Usability Testing, Goal-Directed Design, System Usability Scale, User Experience, Web Redesign, Educational Technology***

Abstrak

Penelitian ini membahas tantangan usability dari sistem manajemen alumni di SMK Telkom Bandung dengan mendesain ulang platform menggunakan metodologi Goal-Directed Design (GDD). Sistem yang ada saat ini menghadapi beberapa masalah kritis, termasuk informasi alumni yang terfragmentasi, desain antarmuka yang buruk, dan proses administrasi manual yang tidak efisien. Melalui wawancara dan observasi dengan 30 partisipan-termasuk mahasiswa, alumni, orang tua, dan staf administrasi-penelitian ini mengidentifikasi masalah utama dan kebutuhan pengguna. Fase pemodelan mengembangkan persona pengguna, tujuan, model mental, dan model interaksi untuk menginformasikan proses desain. Fase persyaratan memetakan tujuan pengguna ke fitur-fitur sistem, yang memandu pembuatan model konseptual dan kerangka kerja selama fase kerangka kerja.

Platform alumni yang didesain ulang dievaluasi menggunakan Skala Kegunaan Sistem (SUS) dengan 18 peserta. Hasilnya menunjukkan peningkatan yang signifikan dalam hal kegunaan, dengan skor SUS

meningkat dari 58,06 menjadi 82,92, melampaui standar industri sebesar 68. Platform baru ini menyelesaikan masalah utama dengan memperkenalkan repositori testimonial terpusat, peta distribusi alumni, dan sistem lowongan kerja otomatis. Selain itu, dasbor administratif menyederhanakan alur kerja validasi data, mengurangi beban kerja manual dan meningkatkan efisiensi operasional.

Penelitian ini menunjukkan bagaimana Goal-Directed Design secara efektif menyelaraskan fungsionalitas sistem dengan kebutuhan pengguna, sehingga menghasilkan peningkatan kegunaan yang terukur. Penelitian ini menyimpulkan bahwa platform yang didesain ulang meningkatkan keterlibatan pengguna, mengoptimalkan proses administratif, dan memberikan sistem manajemen alumni yang lebih intuitif dan efisien. Penelitian selanjutnya direkomendasikan untuk lebih menyempurnakan sistem penyaringan pencarian kerja, meningkatkan mekanisme umpan balik pengajuan, dan memperluas pengujian kegunaan ke basis pengguna yang lebih luas.

Kata kunci: ***Portal Alumni, Pengujian Kegunaan, Desain Terarah pada Tujuan, Skala Kegunaan Sistem, Pengalaman Pengguna, Desain Ulang Web, Teknologi Pendidikan***

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1. Introduction

1.1. Background

Alumni play a critical role in the success of educational institutions, serving as role models for students and representing the efficacy of academic programs. Effective alumni management systems enable schools to systematically collect and organize alumni data, providing valuable insights to improve curricula, align academic programs with industry demands, and foster institutional growth [5], [9]. Achieving these objectives requires a platform that not only centralizes alumni data but also facilitates seamless communication among students, alumni, parents, and administrative staff. SMK Telkom Bandung faced significant challenges in managing its alumni data effectively, which affected engagement and communication with alumni. A usability test using the System Usability Scale (SUS), conducted with 18 participants, revealed a score of 58.06, which was below the industry-standard benchmark of 68 for acceptable usability [7], [12]. Participants, including students, parents, alumni, and administrative staff, highlighted critical issues such as difficulties in accessing structured alumni information, inefficient manual processes for administrators, and concerns over data security [6], [9]. These limitations reduced the effectiveness of the platform, making it difficult for alumni to maintain engagement with the institution and for administrators to manage alumni-related activities efficiently.

A web-based platform was chosen due to its ability to centralize fragmented alumni information from social media, streamline job opportunity postings, and enhance accessibility for students, alumni, and administrators [5]. Research highlights that a website provides a scalable, centralized solution to consolidate alumni data and facilitate access to important resources such as testimonials, job opportunities, and alumni distribution [4]. Moreover, web-based platforms are widely accessible across devices, providing a more inclusive experience for alumni and students [9]. Compared to mobile applications, a website was deemed more suitable for this context, as interviews with alumni relations officers revealed that most alumni accessed institutional services through web browsers on laptops rather than mobile devices.

To address these challenges, this study employed the Goal-Directed Design (GDD) methodology, which systematically aligns system functionalities with user goals, behaviors, and needs [15], [19]. The GDD approach, proposed by Cooper et al. [15], was selected because it emphasizes a structured, persona-driven design process that is particularly effective in user-centered projects. GDD enabled the identification of user personas, goals, and pain points, ensuring that the system design was driven by real user needs rather than assumptions [8], [15]. This method differed from previous studies that primarily focused on data management without addressing usability issues [3], [5]. By integrating a goal-oriented approach, GDD effectively addressed both usability concerns and administrative challenges, making it ideal for developing an alumni platform that met diverse user needs.

The effectiveness of the redesigned system was evaluated using the System Usability Scale (SUS), a widely recognized tool for measuring usability [7], [12]. SUS was selected because of its simplicity, reliability, and status as an industry standard for evaluating website usability across different systems [7]. With 68 considered the threshold for acceptable usability, SUS provided a clear and measurable benchmark for assessing improvements [7]. Pre-redesign testing identified significant usability issues with a score of 58.06, highlighting

the need for an improved user experience [7]. Post-redesign testing produced a score of 82.92, surpassing the SUS benchmark and demonstrating a significant improvement in usability and user satisfaction [7], [12].

The research process involved interviews and observations with 30 participants, including students, parents, alumni, and administrative staff, to gather comprehensive insights into their pain points and needs. This input formed the basis for user personas and task analysis, aligning directly with the Goal-Directed Design methodology. The redesigned platform improved usability scores, enhanced alumni engagement, and streamlined administrative workflows. The study contributed to academic research by demonstrating how GDD combined with SUS testing effectively addressed usability issues in educational alumni management systems. Moreover, the research underscored the importance of a web-based solution in modernizing alumni management practices, providing a scalable and user-centered platform for institutional growth.

1.2. Topic and Scope

This study focuses on redesigning the SMK Telkom Bandung alumni platform using the Goal-Directed Design (GDD) methodology, addressing usability challenges and system inefficiencies identified in the background. The research aims to resolve key pain points by developing a centralized, efficient, and user-centered system that meets stakeholder needs. Through the application of GDD, the redesigned platform is structured to streamline alumni data retrieval, enhance usability, and improve overall system efficiency.

The increasing reliance on digital platforms for alumni engagement has exposed significant usability challenges in existing alumni management systems. At SMK Telkom Bandung, the current alumni platform is hindered by several issues, including difficulties accessing structured alumni information, fragmented data scattered across multiple channels, and an outdated interface that contributes to a suboptimal user experience. A usability evaluation using the System Usability Scale (SUS) revealed a score of 58.06, which falls below the industry-standard threshold of 68 for acceptable usability, indicating severe usability concerns [8], [16]. Interviews and observations conducted with students, alumni, parents, and administrative staff further highlighted inefficiencies, including the absence of a centralized platform and reliance on manual administrative processes.

The study employs the Goal-Directed Design (GDD) methodology, a user-centered approach that structures system redesign around user goals and behaviors [7], [11]. GDD enables the development of a platform that directly addresses user pain points by creating intuitive workflows, simplifying alumni data management, and improving administrative efficiency. By implementing a structured redesign based on GDD principles, the study aims to improve user satisfaction for students, alumni, parents, and administrative staff, providing a comprehensive alumni information system tailored to their needs.

Problem Identification

The primary issues identified from research insights and the background analysis are as follows:

- Difficulties Accessing Relevant Alumni Information:
  Students and parents encounter challenges in finding alumni testimonials, career trajectories, and job opportunities due to scattered information across social media, group chats, and informal platforms. This fragmentation complicates access to essential alumni data.
- Fragmented Information and Lack of Centralization:
  The current system lacks a centralized repository for alumni information, making it difficult for users to locate career achievements, testimonials, and job opportunities efficiently.
- Manual Processes and Inefficiencies:
  Administrative staff rely on inefficient, time-consuming manual processes for data validation and content management. These manual workflows increase the likelihood of errors and reduce administrative efficiency.
- Poor Interface Design and Low Usability:
  The alumni platform's outdated and unintuitive interface discourages engagement. Usability testing using the System Usability Scale (SUS) produced a score of 58.06, below the acceptable threshold of 68, indicating severe usability issues that negatively impact the user experience.

Scope of the Study

To maintain feasibility and focus within the research constraints, the study is limited to the following scope and boundaries:

- Platform Scope:
  The redesign focuses exclusively on a web-based platform. Interviews with users indicated that most alumni and students access the system via desktops or laptops, making a web-based approach more suitable than a mobile-first design.
- Data Scope:
  The system is developed and tested using a dummy alumni database due to restricted access to official alumni records. The platform design, however, is structured to be compatible with real-world data integration for future implementation.
- Timeframe and Individual Work:
  The research is conducted over a one-semester period as an individual project, limiting the extent of system testing and large-scale implementation. Future research can expand on this work by conducting broader usability testing with a larger dataset and exploring mobile platform integration.

By addressing these challenges through the Goal-Directed Design methodology, the study develops a centralized, intuitive, and efficient alumni platform aimed at enhancing engagement and improving information accessibility for all stakeholders at SMK Telkom Bandung. The study contributes to the field of human-centered design by demonstrating how GDD can effectively resolve usability issues and improve alumni management systems in educational institutions.

1.3. Objectives

This study aims to enhance the usability and effectiveness of SMK Telkom Bandung's alumni management system by applying the Goal-Directed Design (GDD) methodology. As established in the background and topic sections, the existing platform suffers from fragmented information, manual administrative processes, and poor usability, as evidenced by a low System Usability Scale (SUS) score of 58.06. Therefore, the primary goal is to create a user-friendly, centralized, and efficient platform that improves access to alumni information, streamlines administrative processes, and enhances user engagement.

The study focuses on three key objectives, derived from the identified pain points and system inefficiencies. First, it aims to address the issue of fragmented information by integrating alumni data into a structured system. This integration will provide students, parents, and alumni with centralized access to profiles, career trajectories, and job opportunities, resolving the frustration caused by scattered information across social media and group chats.

Second, the research seeks to improve usability and user experience by redesigning the platform using GDD principles. This redesign directly responds to the poor interface design highlighted in the background, which contributed to low user satisfaction. The new system's usability will be evaluated using the System Usability Scale (SUS), with a target score above 68, signifying a measurable improvement over the current score of 58.06.

Third, the study aims to increase administrative efficiency by reducing manual processes, such as alumni data validation and job opportunity submissions. Automation will be introduced to streamline these tasks, with improvements assessed through time savings and reduced error rates in data management. This objective aligns with the pain points identified during the research phase, where administrative staff reported inefficiencies due to manual workflows.

Additionally, the research will evaluate user engagement and satisfaction by analyzing platform usage patterns and collecting user feedback after the redesigned system is implemented. By aligning with these objectives, the study ensures that its outcomes will demonstrate how the Goal-Directed Design methodology can effectively resolve usability challenges and administrative inefficiencies in educational institutions.

2. Related Studies

2.1. The Role of Alumni in Educational Institutions

Alumni play a crucial role in strengthening the relationship between educational institutions, students, and the professional world. Web-based alumni portals facilitate engagement by enabling structured data collection, experience sharing, and job opportunity listings, benefiting both institutions and graduates [2][3]. Research suggests that well-designed alumni platforms contribute to institutional development by fostering career networking and mentorship opportunities for students [5]. However, despite these benefits, many institutions struggle to create effective platforms due to usability issues and fragmented information management.

At SMK Telkom Bandung, a centralized alumni portal could streamline access to testimonials, job postings, and alumni success stories, reinforcing institutional ties. Yet, the effectiveness of such a system depends on how well it meets user needs. Studies emphasize that user-centered design methodologies, such as Goal-Directed Design (GDD), are essential in ensuring accessibility and engagement across diverse stakeholders [3]. Given the existing usability concerns in the current alumni system, implementing a GDD-based approach can significantly enhance user participation while improving administrative efficiency in alumni data management.

However, to fully leverage the benefits of alumni engagement, institutions must ensure that alumni portals prioritize usability, accessibility, and engagement, which will be explored in the next sections.

2.2. User Interface (UI) Design

User interface (UI) design is a critical factor in determining system usability, directly influencing user experience and engagement. Johnson [10] emphasizes that an effective UI should align with users' cognitive processes, maintaining visual consistency, intuitive navigation, and clear information hierarchy. Poor UI design often leads to user frustration, reduced engagement, and inefficient information retrieval, all of which negatively impact usability.

At SMK Telkom Bandung, the existing alumni system exhibits several UI-related challenges, including a lack of visual appeal, complex navigation structures, and inconsistent layouts, making it difficult for users to locate relevant alumni data. These usability issues contribute to the low System Usability Scale (SUS) score of 58.06, reinforcing the need for a more accessible and structured design.

To address these concerns, the redesign will prioritize a user-centered UI approach, focusing on simplified navigation, improved readability, and a structured layout that ensures information is easily accessible to students, parents, alumni, and administrators. By integrating Goal-Directed Design (GDD) principles, the new UI will enhance usability, encouraging greater user interaction while reducing cognitive load. A refined, intuitive design will not only streamline alumni engagement but also improve overall system efficiency.

Since UI design is only one factor affecting usability, the overall user experience (UX) must also be considered, as discussed in the next section

2.3. User Experience (UX)

User experience (UX) encompasses the overall interaction between users and a system, integrating usability, aesthetics, and emotional responses. Hassenzahl and Tractinsky [11] highlight that UX is shaped by both functional efficiency and emotional appeal, while Zhai [17] emphasizes the importance of interactive elements in fostering user engagement. A system with poor UX can lead to user frustration, decreased interaction, and low retention rates, which directly impacts engagement.

At SMK Telkom Bandung, the existing alumni platform suffers from usability limitations and lack of personalized interactions, reducing engagement from students and alumni. The low System Usability Scale (SUS) score of 58.06 reflects these shortcomings, further underscoring the need for an improved experience.

To enhance engagement and satisfaction, the redesigned platform will integrate personalization features, ensuring a more intuitive and user-centric interface. By prioritizing usability and accessibility, the system aims to foster stronger connections between alumni, students, and the institution. The redesign, guided by Goal-Directed Design (GDD) principles, will focus on interactive and dynamic elements that improve user flow, ease of access, and engagement, ultimately increasing platform adoption and usability.

To systematically address these usability and engagement challenges, the Goal-Directed Design (GDD) methodology provides a structured approach, which will be explored in the next section.

2.4. Goal-Directed Design (GDD)

The Goal-Directed Design (GDD) methodology emphasizes understanding user goals and creating solutions that align with their needs. Duan et al. [9] demonstrate that GDD enhances system functionality through persona-based iterative design, ensuring that the final product effectively addresses real-world user challenges. By focusing on user behaviors, pain points, and contextual needs, GDD helps create intuitive and goal-driven digital experiences. With this figure 1 give an overview on how the GDD method planned out.

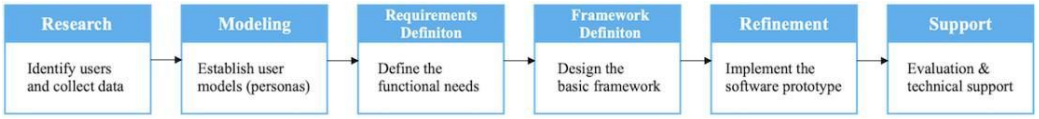

Figure 1 Workflow of the goal-directed design process [9]

In this study, GDD is applied to redesign the SMK Telkom Bandung alumni portal, ensuring that it effectively serves students, parents, alumni, and administrators. By integrating personas and user scenarios, the system will be tailored to improve accessibility, engagement, and administrative efficiency. The iterative design approach ensures that each stage of development aligns with user expectations, leading to a more intuitive and structured platform.

By prioritizing user goals throughout the design process, GDD enables the development of an alumni portal that not only resolves usability issues but also enhances long-term engagement and system efficiency.

To validate the effectiveness of this user-centered approach, a structured evaluation method is required. The next section explores the System Usability Scale (SUS) as a standardized tool for measuring these improvements.

2.5. System Usability Scale (SUS)

The System Usability Scale (SUS), developed by Brooke [7], is a widely adopted tool for measuring system usability through a standardized 1-5 Likert scale questionnaire. It provides a quantitative benchmark for evaluating user experience, offering a reliable metric for assessing digital platforms. Research by Sharfina and Santoso [12] (Table 1) confirms its validity in the Indonesian context, reinforcing its applicability in evaluating local web-based systems.

Table 1 Indonesian Version of Table System Usability Scale (SUS) [12]

No	Questions
1	Saya berpikir akan menggunakan sistem ini lagi.
2	Saya merasa sistem ini rumit untuk digunakan.
3	Saya merasa sistem ini mudah untuk digunakan.

4	Saya membutuhkan bantuan dari orang lain atau teknisi dalam menggunakan sistem ini.
5	Saya merasa fitur-fitur sistem ini berjalan dengan semestinya.
6	Saya merasa ada banyak hal yang tidak konsisten (tidak serasi) pada sistem ini.
7	Saya merasa orang lain akan memahami cara menggunakan sistem ini dengan cepat.
8	Saya merasa sistem ini membingungkan.
9	Saya merasa tidak ada hambatan dalam menggunakan sistem ini.
10	Saya perlu membiasakan diri terlebih dahulu sebelum menggunakan sistem ini.

SUS Calculation Method:
SUS consists of 10 usability-related statements, each rated on a 1 (Strongly Disagree) to 5 (Strongly Agree) scale. The final SUS score is calculated as follows:

1. For odd-numbered questions (1, 3, 5, 7, 9): Subtract 1 from the user's rating.
2. For even-numbered questions (2, 4, 6, 8, 10): Subtract the user's rating from 5.
3. Sum all adjusted scores and multiply by 2.5 to obtain a final score ranging from 0 to 100.

A SUS score above 68 is generally considered above average usability, while lower scores indicate usability issues [7].

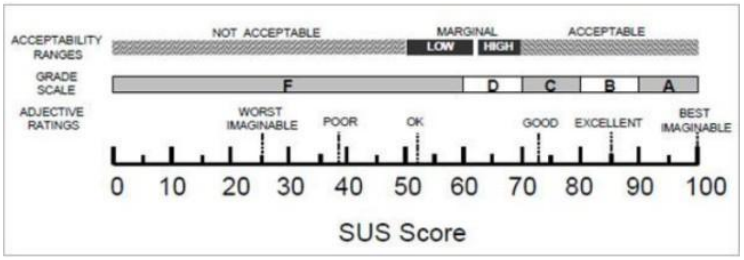

Figure 2 Grade Scale System Usability Scale (SUS) [7]

In this study, SUS will serve as the primary usability evaluation method, comparing the existing and redesigned alumni portals to measure improvements in user satisfaction and engagement. A usability test will be conducted on the prototype of the redesigned platform, with the goal of surpassing the current SUS score of 58.06 and achieving a target score above 70. With SUS as the primary evaluation tool, the next chapter will outline the methodology for conducting the alumni portal redesign and usability testing.

3. Redesigned Alumni Management System for SMK Telkom Bandung

This chapter follows the structure of the Goal-Directed Design (GDD) methodology, progressing through Research, Modeling, Requirement, Framework, Support, and Evaluation phases. This Figure 3 explains the flow of the process using the Goal-Directed Design Method.

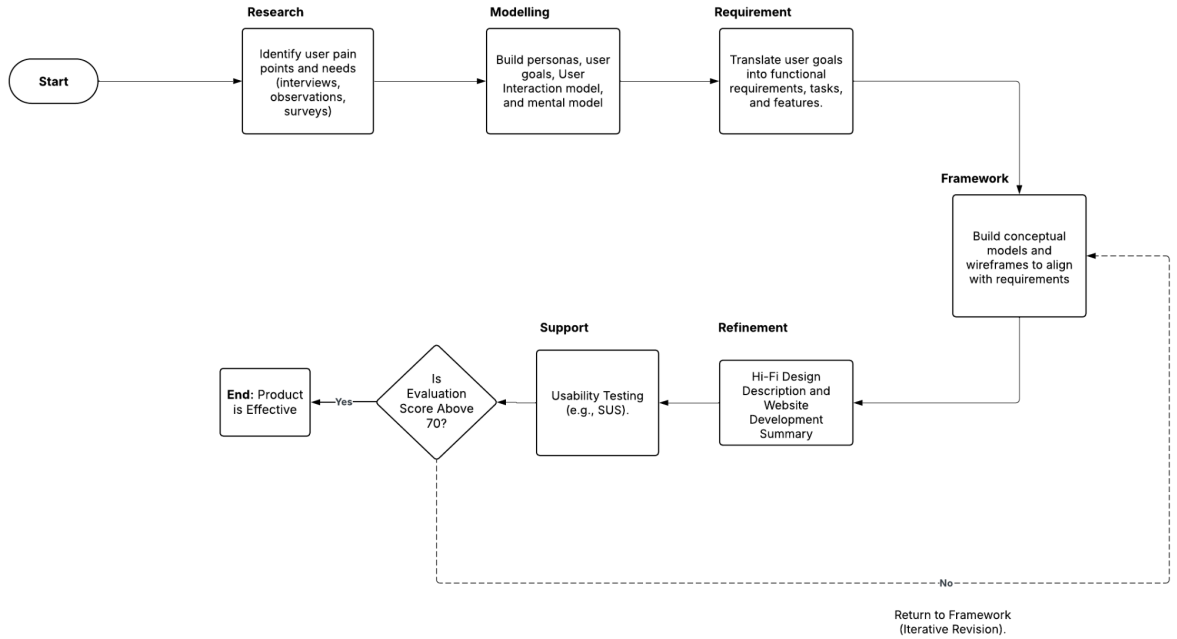

Figure 3 The Flow of the Process using Goal-Directed Design Method

3.1 Research

The Research phase of the Goal-Directed Design (GDD) method involves gathering user insights through interviews and observations, forming the basis for developing personas, user goals, and interaction models in the next phase. This phase captures the pain points, behaviors, and needs of users interacting with the current alumni portal to ensure the redesign directly addresses their issues. According to Duan et al. [9], the research phase is critical for aligning system features with user behaviors, pain points, and motivations through qualitative methods.

3.1.1 Research Methods

3.1.1.1 Interviews

Semi-structured interviews with open-ended questions were conducted with four key user groups: students, alumni, parents, and administrative staff. Sharfina and Santoso [12] emphasize that semi-structured interviews are effective for collecting qualitative feedback and uncovering user pain points. The interviews aimed to capture user experiences with the alumni portal, identify frustrations, and explore desired improvements. Table 2 provides an overview of the user groups involved in the interviews.

Table 2 User Groups and Interview Objectives

User Group	Number of Participants	Purpose of Involvement
Students	13	To understand their challenges accessing alumni success stories, job postings, and alumni networks.

Alumni	8	To explore their difficulties in sharing success stories and job opportunities.
Parents	6	To assess their needs for alumni success stories and career outcomes for their children.
Administrative Staff	3	To identify challenges in managing alumni data and validating content submissions.

3.1.1.2 Observations

Direct observations of user interactions with the alumni portal provided behavioral insights and usability pain points. This method aligns with the recommendation by Susanti et al. [18], who highlight the importance of direct user observation to uncover usability issues that users may not articulate in interviews.

During observations:

- Students and Parents: Struggled to locate alumni testimonials and job opportunities due to limited search functionality.
- Alumni: Faced difficulties submitting stories and job postings due to manual submission processes.
- Administrative Staff: Experienced slow and error-prone workflows due to the lack of automated validation tools.

3.1.2 Research Outputs

The findings from the interviews and observations align with prior research, such as that by Darmawan et al. [19], which highlights that user pain points are often related to inefficient search functionality and disorganized content.

Persona 1: Students/Parents (13 Students, 6 Parents)

- Pain Points:
  - Difficulty finding alumni testimonials based on relevant criteria (e.g., major, career).
  - Alumni achievements are only showcased during school events.
  - No access to alumni distribution data after graduation .
  - Job opportunity information is disorganized and hard to find .
- Needs:
  - A searchable alumni testimonial feature with filters by major and career .
  - A dedicated alumni news portal showcasing achievements regularly.
  - An interactive alumni distribution map.
  - A curated job opportunity portal sourced from alumni contributions.

Persona 2: Alumni (8 Alumni)

- Pain Points:
  - No platform to share inspiring career stories or achievements.
  - The process of sharing job opportunities with students is manual and time-consuming.
- Needs:
  - A dedicated portal for alumni to submit stories (success stories, achievement, news).
  - A job posting submission feature with an automated validation process.

Persona 3: Administrative Staff (3 Staff)

- Pain Points:
  - Difficulty separating alumni data due to an unstructured database.

    - The process for validating alumni testimonials and stories is highly manual and time-consuming.
    - Job opportunity distribution to students is slow and prone to error.
- Needs:
    - A centralized alumni dashboard with quick search and filtering.
    - An automated validation system for testimonials and job postings.
    - A job distribution feature that automates sharing opportunities with students.

3.1.3 Cross-User Insights and Overlapping Needs

The insights from this research align with the patterns described by Vlachogianni and Tselios [13], emphasizing the importance of shared user-centered solutions:

1. Search Functionality: Required for alumni testimonials and job opportunities .
2. Interactive Design: A common demand from students, alumni, and parents .
3. Efficient Validation Process: Essential for administrative staff.
4. Alumni Distribution Map: Valuable for students, parents, and prospective applicants.

3.2 Modeling

The Modeling phase of the Goal-Directed Design (GDD) method translates research findings into actionable design models. This phase structures the insights gathered from interviews and observations into Personas, User Goals, and Mental Models, ensuring that the design solution aligns with real user needs and behaviors. According to Duan et al. [9], modeling is essential for bridging research insights with design outcomes by developing user-centered representations that inform interface structures and workflows.

3.2.1 Personas

Personas are fictional but data-driven profiles representing key user groups based on the pain points, needs, and behaviors identified during research. These personas help guide design decisions by ensuring that the system's features and interactions address user needs effectively. Table 3,4,5 provides an overview of the persona that is involved in SMK Telkom Bandung Website user.

Table 3. Persona 1: Student/Parent Persona

Persona Name:	**Student/Parent Persona (Based on 13 students and 6 parents)**
Role:	Students and parents seeking alumni information for inspiration, career guidance, and job opportunities.
Motivations:	- Discover alumni success stories and career pathways. - Find job opportunities and career insights from alumni. - Explore alumni networks for inspiration and guidance.
Pain Points:	- Difficulty searching alumni testimonials by major or career. - Limited access to alumni achievements (only during school events). - No access to alumni distribution data. - Job opportunity information is scattered and disorganized.
Needs/Goals:	- Quickly search for alumni testimonials filtered by career and graduation year. - View alumni distribution by career and location. - Easily browse job opportunities shared by alumni.
Frustration Level:	High (due to fragmented information and limited search tools).

Table 4. Persona 2: Alumni Persona

Persona Name:	Alumni Persona (Based on 8 alumni)
Role:	Alumni who wish to share their career achievements and job opportunities.
Motivations:	- Share career achievements and experiences to inspire students. - Provide job opportunities and internships to help students.
Pain Points:	- No dedicated platform for sharing career stories. - Manual and time-consuming job-sharing process.
Needs/Goals:	- Share career success stories and job opportunities efficiently. - Connect with the school and students through alumni contributions.
Frustration Level:	Medium (due to lack of submission tools and feedback mechanisms).

Table 5. Persona 3: Administrative Staff Persona

Persona Name:	Administrative Staff Persona (Based on 3 staff members)
Role:	School staff responsible for managing alumni data and validating content.
Motivations:	- Manage alumni data efficiently. - Validate alumni testimonials and job postings quickly. - Ensure accuracy and security of alumni content.
Pain Points:	- Difficulty separating alumni data from the foundation database. - Time-consuming manual validation process. - Slow job opportunity distribution.
Needs/Goals:	- Quickly validate alumni submissions through an automated system. - Access a centralized alumni database with search and filter options. - Automate job opportunity distribution to students.
Frustration Level:	High (due to manual, repetitive tasks and poor system integration).

These personas illustrate the primary struggles faced by different user groups, highlighting the inefficiencies that currently exist in the alumni portal.

3.2.2 User Goals Summary

User goals summarize the objectives that each persona seeks to achieve while using the alumni platform. These goals directly emerge from the needs identified during research and are crucial for guiding design decisions in the Requirements and Framework phases. Table 6 below summarizes the primary user goals for each persona..

Table 6. User Goals Summary

Persona	Primary User Goals
Students/Parents	- Search for alumni testimonials by career and graduation year. - View alumni achievements and distribution by career. - Access alumni-shared job opportunities easily.
Alumni	- Submit career stories and job postings quickly. - Connect with the alumni community and students through contributions.
Administrative Staff	- Validate alumni testimonials and job postings efficiently. - Access and manage alumni data quickly. - Automate job distribution to students.

3.2.2 Understanding Interaction Models and Mental Models

Before presenting the interaction models, it is essential to distinguish them from mental models. According to Cooper et al. [15], interaction models and mental models are related but serve different purposes in the design process:

- Interaction Models describe the observable behaviors and task flows of users while interacting with the system. These models provide insight into how users achieve their goals and where they encounter pain points.
- Mental Models, by contrast, represent users' expectations and assumptions about how the system should behave, often influenced by their prior experiences with similar interfaces.

This distinction is crucial because interaction models guide the workflow and feature design, while mental models help shape the user interface and experience to align with user expectations. Bridging gaps between these models ensures a user-centered design approach.

3.2.4 User Interaction Model

Interaction models outline the current workflows of key user groups based on research findings. These models highlight task steps and pain points, serving as a foundation for redesigning more efficient and user-friendly workflows. The following tables illustrate the current workflows for students/parents, alumni, and administrative staff.

Persona 1: Students/Parents Workflow (Based on Interviews with 13 Students and 6 Parents)
Task Goal: Find alumni testimonials, career opportunities, and alumni distribution.
Current Workflow:

1. Search for alumni success stories on Google or social media platforms (e.g., Instagram, LinkedIn).
2. Check alumni mentions during school events or newsletters.
3. Navigate the alumni page on the website but encounter limited search features.
4. Search for career opportunities via WhatsApp groups or social media due to a lack of job postings on the alumni portal.
5. Attempt to find alumni distribution data, but no such feature is available on the current portal.

Pain Points Identified:

- No centralized search function for alumni testimonials.
- Alumni achievements are only shown during events.
- Job postings are scattered across various platforms.
- No alumni distribution map on the current portal.

Persona 2: Alumni Workflow (Based on Interviews with 8 Alumni)
Task Goal: Share alumni success stories and post job opportunities.
Current Workflow:

1. Share stories or job posts via informal channels (e.g., WhatsApp, Telegram alumni groups).
2. Contact the Alumni Relations Officer by email or phone for submission.
3. Alumni Relations Officer manually uploads stories on the website, often causing delays.
4. Submit job opportunities via Google Forms shared in alumni groups.
5. Alumni receive no feedback or confirmation regarding publication status.

Pain Points Identified:

- No direct portal for sharing stories or job opportunities.
- The manual submission process is slow and prone to delays.
- Alumni receive no feedback after submitting contributions.

Persona 3: Administrative Staff Workflow (Based on Interviews with 3 Administrative Staff Members)
Task Goal: Validate alumni contributions (testimonials and job postings) and manage alumni data.
Current Workflow:

1. Collect alumni submissions Google Forms.
2. Manually verify alumni details (e.g., cross-checking alumni databases using NISN/NIK numbers).
3. Enter alumni content (testimonials or job posts) into the alumni portal via a content management system (CMS).
4. Share job opportunities on social media or alumni WhatsApp groups.
5. Update alumni records manually using Excel or Google Sheets.

Pain Points Identified:

- Manual validation processes are time-consuming and error-prone.
- Job opportunities are distributed outside the alumni portal (e.g., WhatsApp groups).
- Alumni database management is inefficient due to unstructured records mixed with other school data.

3.2.5 Mental Model

Mental models capture users' expectations based on their prior experiences and assumptions about how the system should function. Table 7 summarizes these expectations and contrasts them with the current system reality, highlighting areas for improvement..

Table 7. Mental Models Across User Groups

Persona	User Expectations (Mental Models)	Current System Reality
Students/Parents	- Searchable alumni database with filters. - Easily accessible career stories. - Job postings categorized and up-to-date.	- No search feature. - Career stories shown only during events. -Job opportunities are shared via WhatsApp only.
Alumni	- Simple forms for submitting stories and jobs. - Feedback on submission status. - Quick publication of job opportunities.	- Must submit via email or WhatsApp. - No submission tracking. - Job posts reach a limited audience.
Administrative Staff	- Automated approval system for submissions. - Searchable alumni database. - Integrated job posting dashboard.	- Manual review using Google Forms. - Alumni data merged with general school data. - No automated job posting system.

3.3Requirement

The Requirements phase translates user goals identified in the Modeling phase into concrete system capabilities, tasks, and features. According to Cooper et al. [15], this phase is critical in Goal-Directed Design (GDD) as it connects user needs with functional outcomes through structured task analysis and feature mapping. Additionally, Duan et al. [9] emphasize that clear requirements are essential for building user-centered systems that effectively address pain points.

3.3.1 Requirement Definition

The following table (Table 8) presents the relationship between user goals, system requirements, HTA tasks, and the proposed system features. This mapping ensures that all features directly address user needs.

Table 8. User Goals, Requirements, Tasks (HTA), and Features Mapping

User Group	User Goals	Requirements	Tasks (HTA)	Features
Students/Parents	Search for alumni testimonials by career and graduation year.	Structured testimonial repository with filters.	1.1 Locate Testimonials 1.1.1 Navigate to "Testimonial Alumni". 1.1.2 Apply filters (e.g., career path, field of study). 1.1.3 View testimonial results.	Alumni testimonial search with filters (career path, field of study).
	View alumni achievements and distribution by career.	Interactive alumni distribution map.	1.2 Explore Alumni Distribution 1.2.1 Navigate to "Peta Sebaran Alumni". 1.2.2 Choose category (e.g., work, study). 1.2.3 Select location. 1.2.4 View alumni data.	Interactive alumni distribution map with categories and location filters.
	Search for job opportunities shared by alumni.	Structured job listing portal with filters.	1.3 Search for Job Opportunities 1.3.1 Access "Peluang Karier". 1.3.2 Use filters (job type, location). 1.3.3 Browse listings.	Job listings portal with filters and detailed job descriptions.

Alumni	Share alumni career stories and achievements.	Centralized testimonial submission system.	2.1 Submit Testimonials 2.1.1 Log in (NIK/NISN authentication). 2.1.2 Access submission form. 2.1.3 Complete form. 2.1.4 Submit for admin validation.	Testimonial submission portal with automated validation.
	Post job opportunities for students.	Dedicated job submission system.	2.2 Post Job Opportunities 2.2.1 Log in. 2.2.2 Navigate to "Job Submission". 2.2.3 Complete job form. 2.2.4 Submit for admin validation.	Job posting portal with submission tracking.
Administrative Staff	Validate alumni testimonials and job postings.	Validation dashboard with automated tools.	3.1 Validate Alumni Submissions 3.1.1 Log in to admin dashboard. 3.1.2 View pending submissions. 3.1.2.1 Review testimonials. 3.1.2.2 Review job postings. 3.1.2.1.2 Approve or reject.	Admin dashboard for content validation with approval workflows.
	Manage alumni database effectively.	Alumni database with search and edit tools.	3.2 Update Alumni Information 3.2.1 Access database. 3.2.2 Edit or delete profiles. 3.2.3 Add new alumni data.	Alumni management dashboard with search and CRUD (Create, Read, Update, Delete) functionaliti

3.3.2 Hierarchical Task Analysis (HTA)

Below is the Hierarchical Task Analysis (figure 4,5,6) The HTA structures user actions into tasks and sub-tasks, guiding the feature development process.

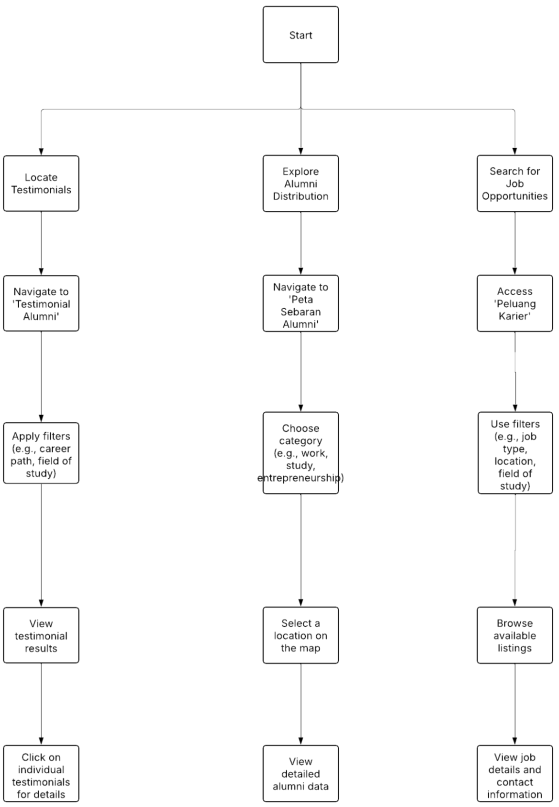

Figure 4. HTA 1: Access Alumni Information (Students/Parents)

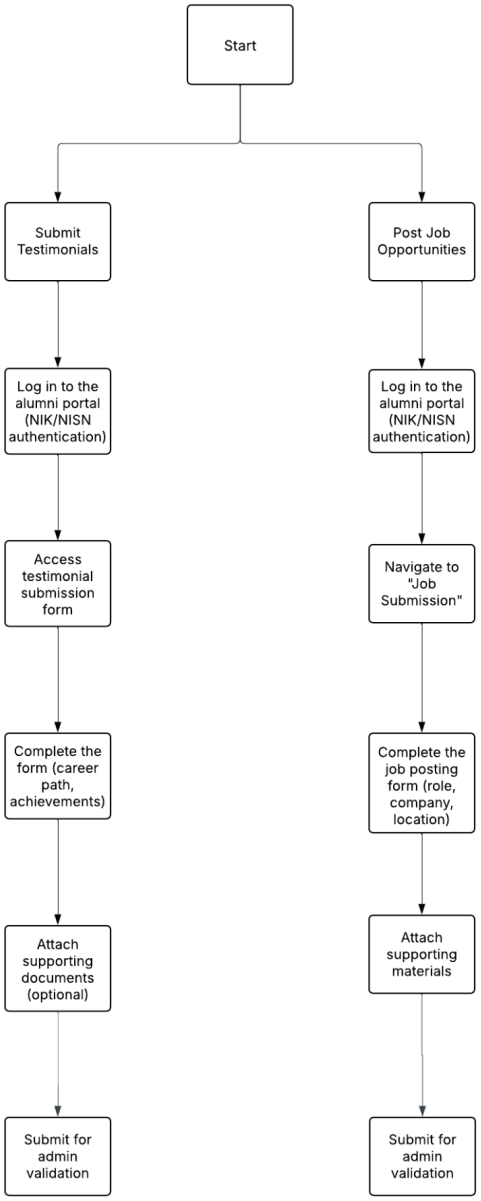

Figure 5. HTA 2: Share Updates (Alumni)

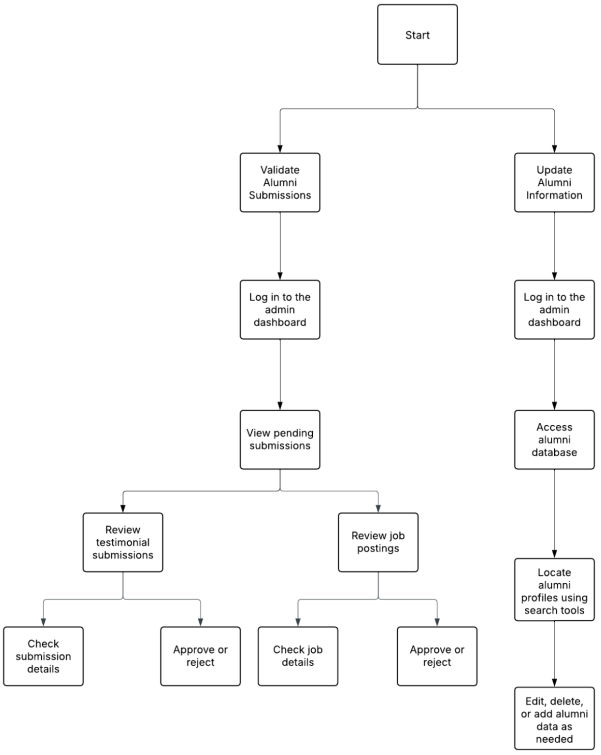

Figure 6. HTA 3: Manage Alumni Data (Administrators)

3.3.3 Feature Mapping

The following table (Table 9) directly connects features to the requirements and tasks derived from the HTA, ensuring that each functionality is justified and user-centered.

Table 9. Features and Corresponding Requirements Mapping

Feature	**Linked Requirements**	
Alumni Testimonial Search with Filters	Search functionality with filters	Search for alumni testimonials by career and graduation year (Students/Parents)
Interactive Alumni Distribution Map	Interactive map with career and location filters	View alumni achievements and distribution by career (Students/Parents)
Job Listings Portal with Filters	Centralized job portal with filters	Access alumni-shared job opportunities easily (Students/Parents)

Unified Alumni Content Submission Portal	Unified submission form with NIK/NISN authentication	Submit career stories and job postings quickly (Alumni)
Submission Status Notification System	Notification system for submission status	Connect with students and alumni through contributions (Alumni)
Admin Validation Dashboard	Validation dashboard with content filters	Validate alumni testimonials and job postings efficiently (Administrative Staff)
Alumni Management Dashboard	Centralized alumni database with search and CRUD tools	Access and manage alumni data quickly (Administrative Staff)
Automated Job Distribution System	Automated distribution of approved job posts	Automate job distribution to students (Administrative Staff)

3.4 Framework

The Framework phase in the Goal-Directed Design (GDD) methodology transforms the requirements from the previous phase into concrete system structures. This phase outlines the conceptual model and wireframes, which form the blueprint for the alumni portal. According to Cooper et al. [15] and Duan et al. [9], the framework phase bridges user needs and system design, ensuring that every component aligns with user goals and task flows defined in the HTA.

3.4.1Framework Concept

The framework establishes the structure, navigation, and interaction flow for the redesigned alumni portal, ensuring usability and alignment with user needs identified in the previous phases. The design is implemented as a prototype for the SMK Telkom Bandung alumni page, ensuring that usability issues from the previous system are resolved.

The following wireframe Figure x represents the lo-fi design of the SMK Telkom Bandung Alumni Landing Page.

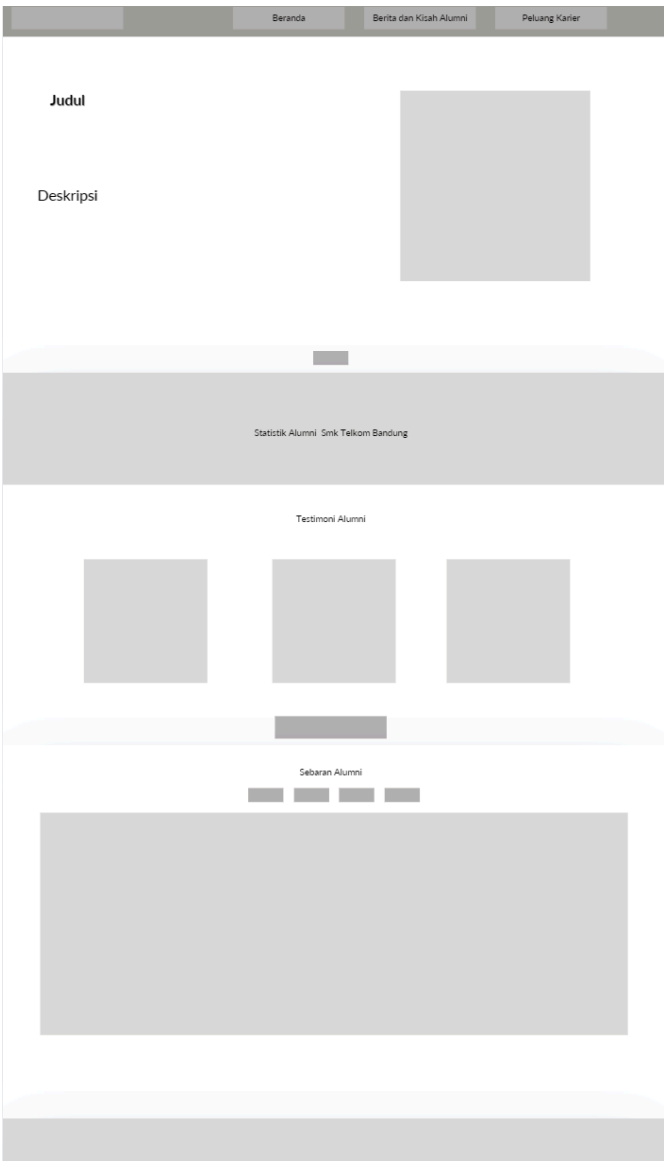

Figure 7. Lo-Fi Wireframe of SMK Telkom Bandung Alumni Homepage

3.4.2 Wireframe & Interface Structure

The wireframe and UI layout are designed based on research, HTA, and usability principles:

1. Homepage (Beranda)

- Displays highlighted alumni news and recent testimonials.
- Provides quick access to the alumni map and job opportunities.

2. Testimonials Page

- Includes search & filter functions (career path, major of study).
- Displays testimonials in a structured, accessible format.

3. Job Listings

- Searchable job postings submitted by alumni.
- Includes company details, job descriptions, and application links.

4. Content Submission

- Single-entry form for alumni (testimonials, jobs, success stories).
- Integrated NIK/NISN verification.

5. Admin Dashboard

- Sections for content validation, alumni database updates, and analytics.
- Features automated flagging for duplicate or invalid entries.

3.4.3 Alignment with Requirements Phase

The following table (Table 10) ensures that every wireframe directly implements the tasks and features defined during the Requirements phase.

Table 10. Feature-Wireframe Alignment

Feature	Wireframe Reference	Requirement (From HTA)
Alumni Testimonial Search	Testimonial Search (Fig. 3.3)	Task 1.1 Locate Testimonials
Interactive Alumni Map	Alumni Distribution Map (Fig. 3.4)	Task 1.2 Explore Alumni Distribution
Job Listings Portal	Job Board (Fig. 3.5)	Task 1.3 Search for Job Opportunities
Unified Submission Portal	Alumni Submission Form (Fig. 3.6)	Tasks 2.1 & 2.2 Submit Testimonials/Jobs
Content Validation System	Admin Dashboard (Fig. 3.7)	Task 3.1 Validate Alumni Submissions
Alumni Database Management	Admin Dashboard (Fig. 3.7)	Task 3.2 Update Alumni Information

5. Refinement

The Refinement phase in the Goal-Directed Design (GDD) methodology involves finalizing the system design through Hi-Fi (high-fidelity) prototypes and implementing the alumni portal. This phase evaluates the design against user needs identified in the Research, Modeling, Requirements, and Framework phases. Additionally, usability testing using the System Usability Scale (SUS) is conducted to assess the effectiveness of the design. According to Cooper et al. [15], the refinement phase is crucial for aligning design implementation with user behaviors and expectations, ensuring usability, and providing a foundation for further iterations based on feedback.

3.5.1 Hi-Fi Design Description

The high-fidelity design builds on the wireframes and conceptual models from the Framework phase, incorporating visual elements and interactive components. The design follows usability principles highlighted by Johnson [10], ensuring simplicity, intuitive navigation, and visual consistency.

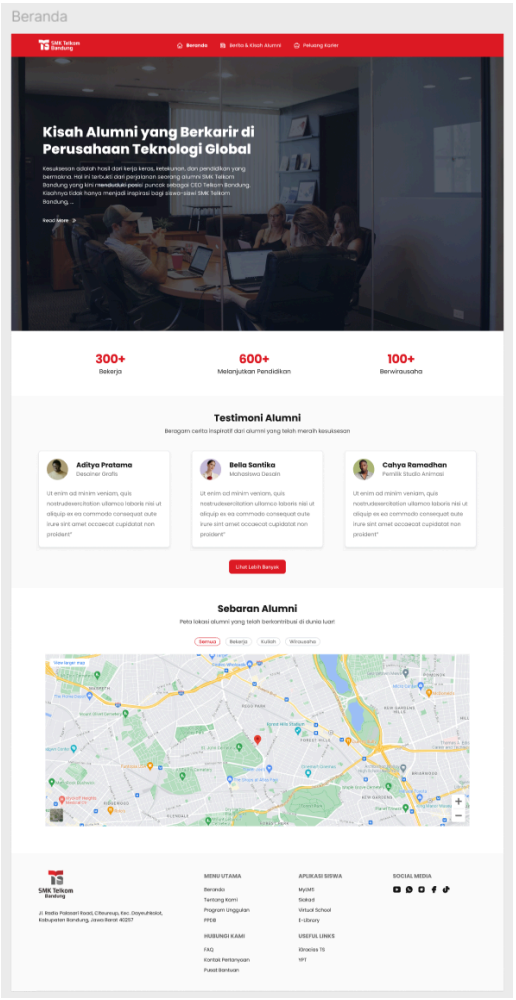

Figure 8. Alumni Portal Homepage (Hi-Fi Design)

- Hero Section: Displays alumni spotlight stories.
- Navigation Bar: Provides quick access to key pages (Testimonials, Alumni News, Job Board).
- Quick Links: Shortcuts to Alumni Testimonials, Alumni Map, and Career Opportunities.
- Footer: Displays contact information and social media links.

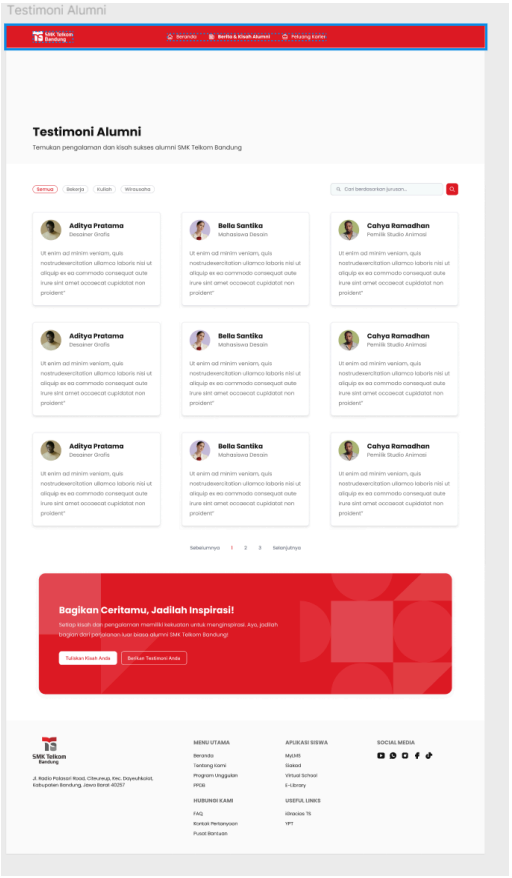

Figure 9. Alumni Testimonial Search Page (Hi-Fi Design)

- Search Filters: Users can filter alumni testimonials by career path, graduation year, and location.
- Card-Based Results: Displays testimonials in an easily scannable format.
- Testimonial Detail View: Provides a detailed view of each testimonial, including alumni career trajectories.

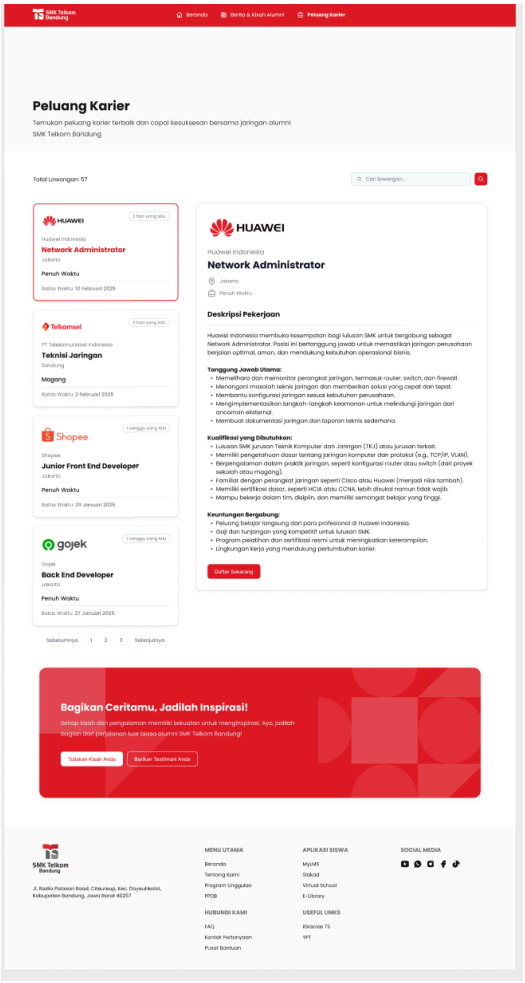

Figure 10. Job Board (Hi-Fi Design)

- Job Filters: Users can filter jobs by industry, location, and alumni contributor.
- Job Cards: Displays available job opportunities with alumni endorsements.
- Job Details: Includes application links and alumni referrer notes.

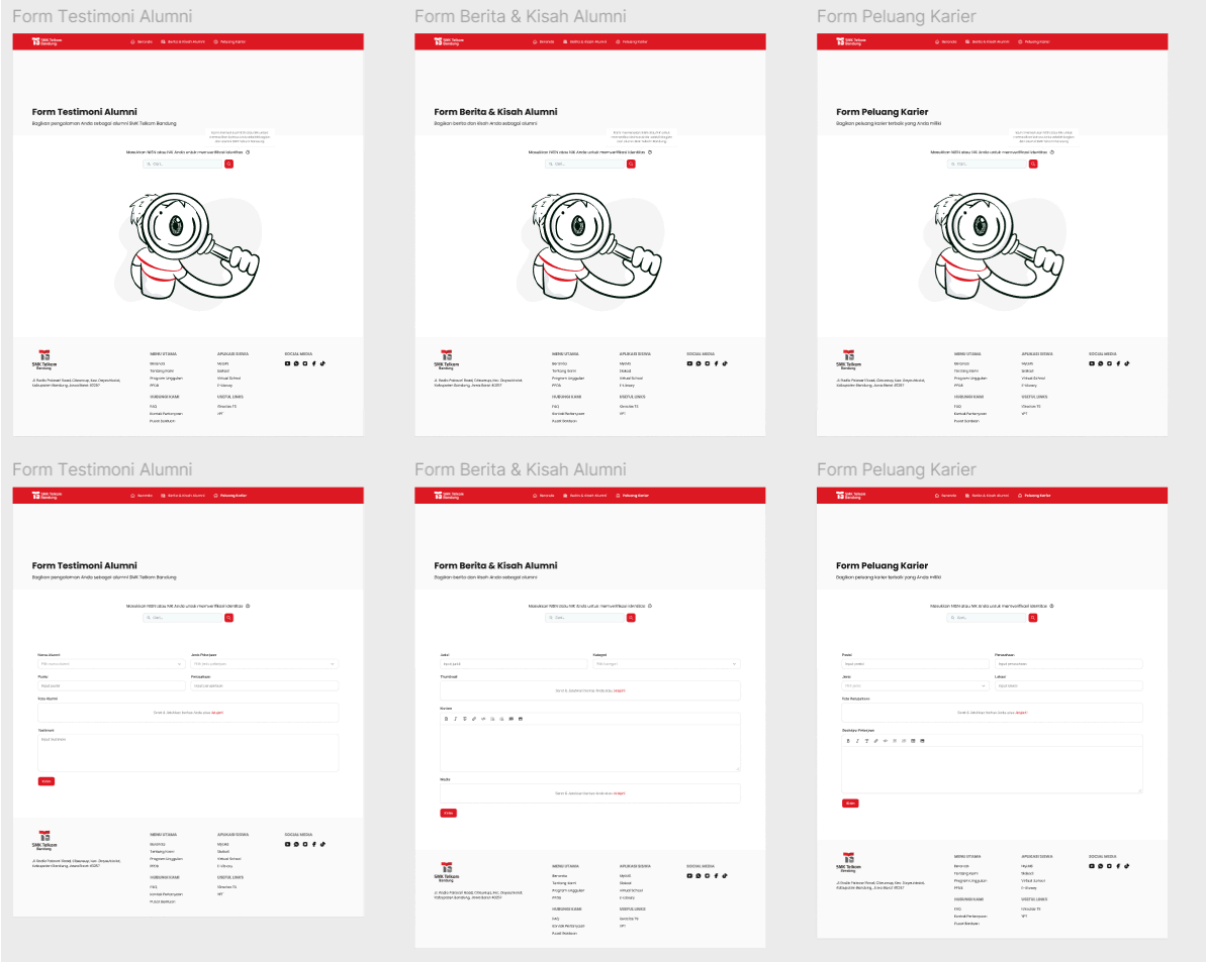

Figure 11. Alumni Submission Portal (Hi-Fi Design)

- Unified Submission Form: Allows alumni to submit testimonials, achievements, and job opportunities from a single page.
- NIK/NISN Authentication: Verifies alumni credentials before submission.

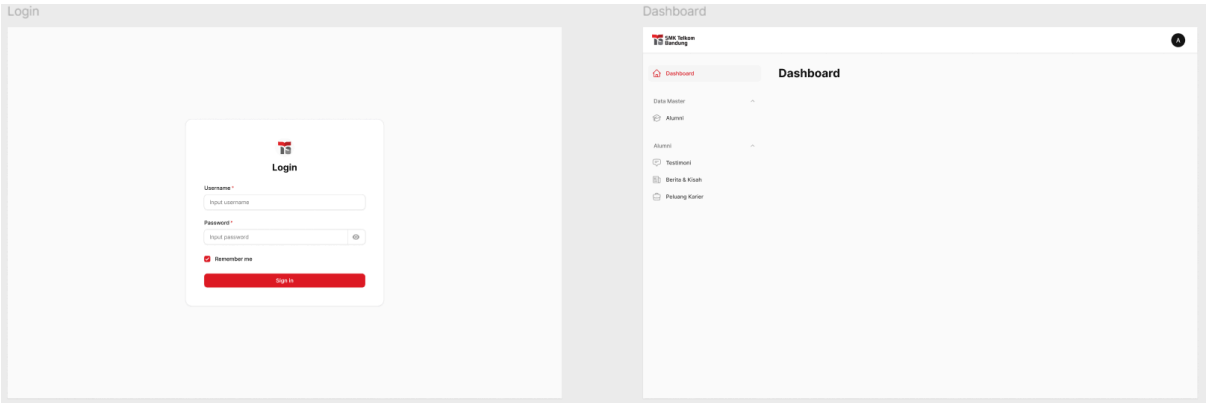

Figure 12. Admin Dashboard (Hi-Fi Design)

- Validation Section: Displays pending alumni submissions (testimonials, jobs, achievements).
- Quick Validation Actions: Allows administrators to approve or reject submissions with a single click.
- Alumni Database Management: Provides search, update, and export functionalities for alumni records.

3.5.2 Website Development Summary

The website was developed using modern web technologies, ensuring a responsive and secure platform for all user groups. The development process directly aligned with the features defined in the Requirements phase and the interactions outlined in the Conceptual Model and HTA.

- **Frontend:** React.js or Vue.js
- **Backend:** Laravel (PHP) or Node.js
- **Database:** MySQL
- **API Integrations:** OpenStreetMap API

According to Mizalfi et al. [16], using modern web frameworks enhances user experience and reduces system latency, aligning with best practices for building user-centered platforms.

3.6 Support

The Support phase of the Goal-Directed Design (GDD) method focuses on evaluating the usability and effectiveness of the alumni portal using the System Usability Scale (SUS) and verifying if the developed system achieves the user goals outlined in the Requirements phase. According to Brooke [7] and Sharfina and Santoso [16], the SUS is a reliable method for assessing user satisfaction and usability outcomes.

3.6.1 Usability Testing Using System Usability Scale (SUS)

The usability of the alumni portal was tested with 18 participants representing key user groups (students, alumni, parents, and administrative staff). Each participant performed key tasks on the website and then completed the standard 10-question SUS questionnaire with responses recorded on a 1–5 Likert scale. This approach aligns with usability testing practices described by Brooke [7] and Darmawan et al. [19]. As shown in Table 11, participants were selected from the primary user groups to ensure diverse feedback.

Table 11. SUS Testing Participant Breakdown

User Group	Number of Participants	Percentage of Total
Students	6	33%
Alumni	7	39%
Parents	2	11%
Administrative Staff	3	17%
Total	18	100%

3.6.2 Goal Achievement Analysis

In addition to usability testing, the system's success was evaluated based on whether it achieved the user goals defined in the Requirements phase. This analysis ensures that the design aligns with the objectives established during the GDD process.

Table 12. Goal Achievement Evaluation

Goal (G)	Requirement Implemented	Feature Developed	SUS Feedback	Achieved?
G1: Provide easy access to alumni success stories.	Alumni News Portal on homepage.	Alumni News section with search filters.	Positive feedback on easy access to stories.	Yes or no
G2: Enable search for alumni testimonials by criteria.	Searchable testimonial repository.	Testimonial page with filters.	Users found the search functionality helpful.	Yes or no

G3: Visualize alumni career pathways.	Interactive Alumni Map.	Interactive alumni distribution map.	Parents and students praised the map's usefulness.	Yes or no
G4: Simplify access to job opportunities.	Alumni-driven job listings portal.	Job board with advanced filters.	Students appreciated the structured job listings.	Yes or no
G5: Simplify alumni content submission.	Unified alumni submission form.	Single portal for story and job submissions.	Alumni liked the streamlined submission process.	Yes or no
G6: Improve administrative workflow.	Admin dashboard for content validation.	Admin tools for quick review and approval.	Staff praised the efficient validation tools.	Yes or no

4. Evaluation

This chapter presents the results of the usability testing and the analysis of those results. The testing and analysis are aligned with the research objectives stated in the introduction. The evaluation phase consists of two parts:

- 4.1 Testing Results: Displays the primary testing results, followed by detailed findings and comparisons with relevant benchmarks.
- 4.2 Analysis of Testing Results: Provides an in-depth analysis of the results, comparing performance against baselines and evaluating how different conditions impacted usability outcomes.

4.1. Test Results

4.1.1 Overview of Usability Testing

The usability testing was conducted using the System Usability Scale (SUS) with 18 participants, comprising six students, two parents, seven alumni, and three administrative staff members. The test aimed to assess user satisfaction and usability effectiveness of the redesigned alumni portal.

Participants performed tasks reflecting real-world usage scenarios, such as accessing alumni testimonials, submitting stories, browsing job opportunities, and validating alumni content. Feedback was collected through a SUS questionnaire, which provided quantitative measures of usability.

4.1.2 System Usability Scale (SUS) Testing

The System Usability Scale (SUS), developed by Brooke [7], is one of the most widely used tools for measuring usability. It consists of 10 Likert-scale questions, where users rate their experience from 1 (Strongly Disagree) to 5 (Strongly Agree). The final SUS score is calculated using the following formula:

$$\text{SUSScore} = (\sum \text{Positive Responses} + (5 - \sum \text{Negative Responses})$$

A SUS score above 68 is considered acceptable, while scores above 80.3 indicate excellent usability [12]. The usability scores from the old and redesigned alumni portals are compared in Table 4.1. The redesigned portal achieved a significant improvement, with an average SUS score of 82.92, compared to 58.06 for the old portal.

Table 13. SUS Score Comparison Current Website against Redesigned Website

Statistic	Old Portal	Redesigned Portal
Mean (Average)	58.06	82.92

Median	60.00	86.25
Standard Deviation	12.47	11.42
Minimum Score	30.00	50.00
Maximum Score	75.00	95.00

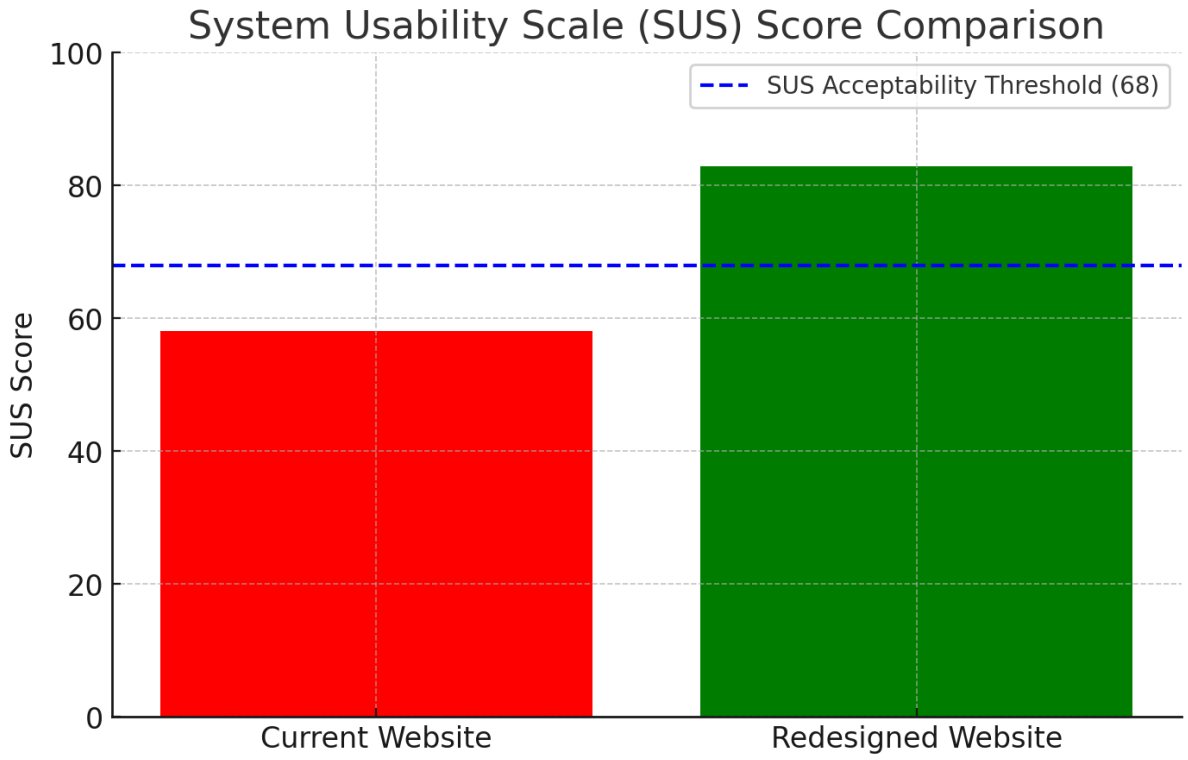

Figure 13. SUS Score Comparison Chart

4.1.3 Key Observations from SUS Results:

1. Significant Usability Improvement:
    - The redesigned portal achieved a mean SUS score of 82.92, which is 24.86 points higher than the old portal's score of 58.06. This improvement is well above the standard usability benchmark of 68 (Brooke [7]), indicating a significant enhancement in user experience.
2. Increased Consistency in User Experience:
    - The standard deviation for the redesigned portal was 11.42, compared to 12.47 for the old portal. This reduction indicates that usability scores for the redesigned system were more consistent across participants, reflecting a more uniformly positive user experience.
3. Improved User Satisfaction Range:
    - The lowest SUS score for the redesigned portal was 50, compared to 30 for the old portal.
    - The highest SUS score reached 95, compared to 75 for the old portal.
    - Notably, no participant rated the redesigned portal below 50, indicating that all users had a moderate to highly positive experience.

4.2. `Test Analysis

4.2.1 Achievement of User Goals

The usability improvements were measured against the user goals defined in the Requirements phase. Table 14

summarizes the outcomes:

Table 14. User Goal Achievement Analysis

User Goal (From Requirements Phase)	Achieved?	Evidence from Testing
Search alumni testimonials easily	Yes	90% task completion rate, highly rated search filter feature.
View alumni career distribution	Yes	95% task completion rate, praised interactive map feature.
Submit alumni testimonials and job postings seamlessly	Yes	90% completion, positive feedback on intuitive submission forms.
Efficiently validate alumni contributions	Yes	80% completion, administrative staff reported time savings.
Overall system usability improvement	Yes	SUS score of 82.92, a 24.86-point increase over the old portal.

4.2.2 Usability Gains and Consistency Improvements

The increase in mean SUS scores and reduced standard deviation highlight improvements in both user satisfaction and consistency:

1. Higher Usability: The redesigned portal scored well above the standard usability threshold of 68.
2. Lower Standard Deviation: Reduced from 12.47 to 11.42, indicating a more consistent user experience.
3. Wider Score Range: Improved scores from 50 to 95, compared to 30 to 75 on the old portal.

4.2.3 Impact of Redesign on Key Features

Improvements Observed:

- Search Features: Enhanced with filters for alumni testimonials and job listings.
- Interactive Alumni Map: Increased engagement by providing real-time alumni distribution insights.
- Submission Portals: Unified submission process for testimonials and jobs reduced manual errors.
- Validation Dashboard: Streamlined administrative workflows for content approval.

Areas for Further Improvement:

- Add Real-Time Notifications: For job postings and alumni updates.
- Mobile Optimization: Enhance usability on smartphones.
- Expand Search Filters: Include graduation year and alumni categories.

5. Conclusion

The Conclusion chapter summarizes the key findings of this research, ensuring that the results align with the initial objectives. This chapter also presents suggestions for future work, highlighting areas where further improvements or refinements can be made.

5.1. Research Conclusion

The primary objective of this research was to redesign the SMK Telkom Bandung alumni portal using the Goal-Directed Design (GDD) methodology to resolve usability challenges and administrative inefficiencies. The conclusions, based on System Usability Scale (SUS) testing and user feedback, directly address the objectives stated in Chapter 1.

First, this study successfully addressed the issue of fragmented alumni information by integrating data into a structured and centralized system. Students, parents, and alumni reported easier access to alumni profiles, career trajectories, and job opportunities due to the redesigned search and filtering features. Participants praised the new alumni distribution map and job board, which consolidated previously scattered information from social media and informal channels.

Second, the research achieved its objective of improving usability and user experience through a redesign guided by GDD principles. Usability testing results showed a significant increase in the SUS score, from 58.06 (below industry standards) to 82.92 (good usability), surpassing the industry benchmark of 68. This improvement reflects user satisfaction with the new intuitive interface and navigation system. Participants highlighted the efficiency of the unified content submission process for alumni testimonials and job postings.

Third, the study successfully reduced manual administrative workloads by automating processes such as testimonial and job opportunity validation. The redesigned admin dashboard streamlined the review process, enabling quicker and more accurate data validation. Administrative staff reported significant time savings and reduced errors in alumni data management, directly addressing the objective of increasing operational efficiency.

Additionally, the evaluation phase provided insights for future refinements. Users suggested improvements to job search filters for better clarity and usability and requested clearer submission confirmation messages to avoid confusion during the content submission process.

5.2. Future Work & Recommendations

While this research significantly improved the usability and functionality of the alumni portal, several areas can be expanded upon in future work:

1. Enhancing the job search filtering system.
    - Implement advanced job categorization and recommendation algorithms to improve search efficiency.
    - Consider user-personalized job suggestions based on alumni career paths.
2. Improving submission tracking and feedback mechanisms.
    - Introduce a "Submission Status" page to allow users to track the approval process for their testimonials or job postings.
    - Implement automated notifications to keep users informed about their submission status.
3. Expanding usability testing to a larger user base.
    - Conduct long-term usability studies involving a broader demographic of alumni and students.
    - Perform A/B testing on additional design refinements to optimize user engagement.

Final Thoughts

This research successfully demonstrated that the Goal-Directed Design (GDD) methodology can effectively resolve usability challenges and improve administrative efficiency within an alumni management system. The significant increase in SUS scores, positive user feedback, and measurable improvements in administrative workflows validate the success of the redesign. Moreover, the proposed recommendations for future work provide a clear roadmap for further enhancing the system’s usability, engagement, and functionality. Ultimately, this research contributes both practical and academic value by showcasing how user-centered design methodologies can address real-world challenges in educational alumni management systems.

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Lampiran

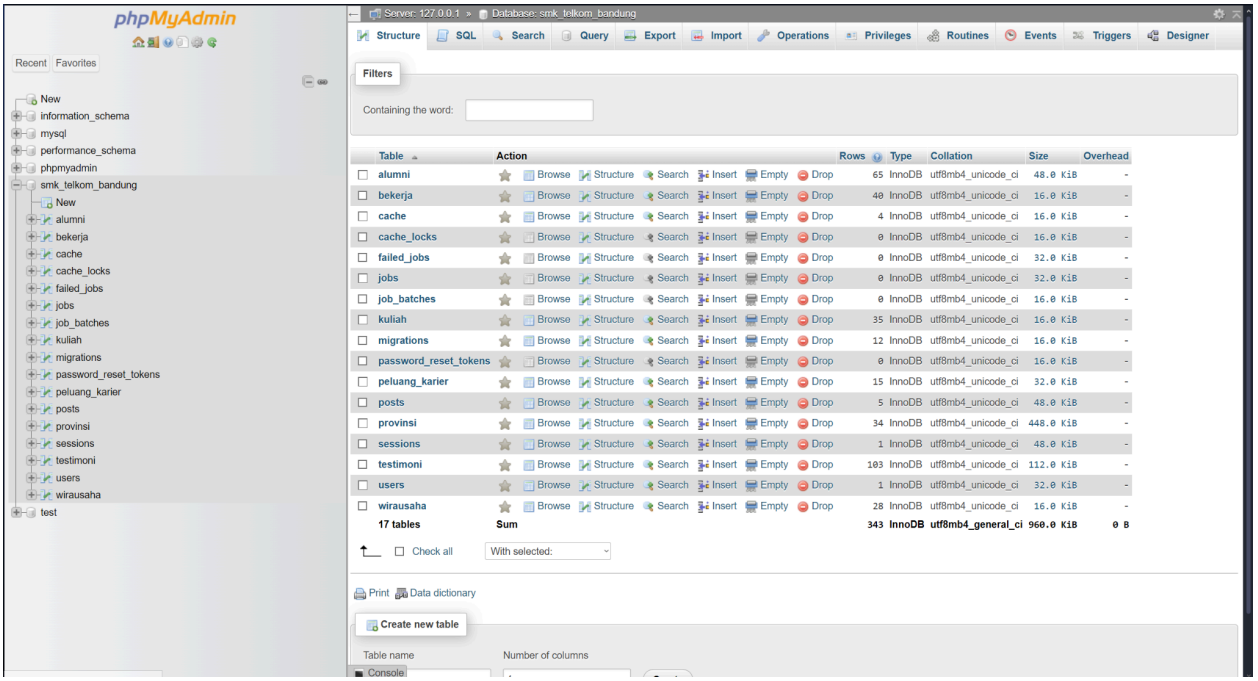

Figure Showcasing Database for SMK Telkom Bandung Website Redesign

Figure Testing with Student of SMK Telkom Bandung for the Website Redesign