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Design Job Vacancy Website Using The Laravel Framework

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Abstract

Job vacancies are the most sought after during the current COVID-19 pandemic—the number of layoffs by companies experiencing problems in their business. Many people become unemployed, and income levels decrease while their needs must still be met. This has an impact on the number of people looking for job vacancies. Often found job seekers and job seekers seeking information still through mass media, banners, posters, billboards, and word of mouth. This search and recruitment model will not be efficient and will not be right on target. The solution offered to overcome these problems is to create a website for job vacancies, recruitment, and job applications. The research method used is Rapid Application Development (RAD) to find out the website creation process carried out in a short and influential period. The research flow is looking for references, determining project needs by making UI design and database design, making prototypes, testing, refining, developing features, feedback questionnaires, and project implementation. This research resulted in a job vacancy website called "AntiNggur". This website is expected to facilitate the dissemination of information on job vacancies, the job search process, and the process of recruiting new workers that are more effective and more targeted.

Keywords: Website, Information, Job Vacancies, Human Resources, RAD

INTRODUCTION

Job vacancies are the most sought after, especially during the Coronavirus Disease 2019 (COVID-19) pandemic[1]. This is because there are many layoffs by companies experiencing problems in their business[2]. Many people become unemployed, while their needs still have to be met. According to Core Indonesia's projections, the significant increase in the number of open unemployment is not only caused by a slowdown in the pace of economic growth but also due to changes in people's behavior related to the COVID-19 pandemic and social restriction policies, both on a small and large scale[3]–[5].

The increase in the unemployment rate is proportional to the number of new job openings[6]. In looking for job vacancies, people usually look through print media or come directly to companies that need new workers[7]. Placing job vacancies in the mass media requires advertising costs that are pretty expensive for one run[8]–[10], and the distribution of these advertisements is only limited to the location where the newspaper is circulated. Job seekers who come directly to the company's location will also incur many costs for transportation and printing documents and will take a lot of travel time[11]–[13].

Job search and recruitment will be easier if a website-based system can provide information about job vacancies[14], [15]. Users do not need to install applications on their devices through the website. Users only need to open via a browser on either a mobile device or a desktop. Information about job vacancies will be immediately available quickly and widely using the website because

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many companies or business managers from various regions and various business fields will be looking for new workers.

The website was chosen because it can be accessed anywhere as long as the internet is available. In addition, it also does not burden the user's device because it does not have to install additional applications. The job vacancy information process becomes faster and more efficient.

This study seeks references from previous research. Syafwadhinata et al. in[16] conducted a study about developing a freelancer application that can facilitate students in entrepreneurship independently with an attractive advertising model. However, the weakness of this application is that it cannot update data yet.

Pratama et al. in[17] research is based on the high unemployment rate in Indonesia, especially in Bandung, which can cause social insecurity and poverty. *Nganggur.id* is a Freelancing Service Application developed using the Laravel Framework and MySQL database, which focuses on mobile devices and desktop devices. The method used is Extreme Programming, with a test value of 98.86% of the tester using the *Nganggur.id* application.

Noor and Irfan in[18] this research produced a freelance service provider application called Progressive Web Apps (PWA). This application helps provide information on industrial practice places for vocational students to increase work experience and information on job vacancies. This application can be a means for the public and prospective workers to meet and make transactions.

Prasetya et al. in[19] this study resulted in an employee recruitment website at PT. Bimasakti Multi Sinergi uses the Laravel framework. The front-end part of the system provides information on job vacancies and employee recruitment, with the features of a list of vacancies being searched based on the name of the vacancy, filling in applicant data, and test schedules. The back-end uses the admin system as data management from adding, changing, deleting information related to job vacancies.

Pamungkas et al. in[20] this study was developed using the Research and Development (RAD) method. The job vacancies website was built using the CodeIgniter framework, MySQL database, and Apache webserver. This website was tested using ISO 25010 on functional suitability by media experts. Based on the system testing carried out, the system can log in and register a user account, view information related to job vacancies, make job applications based on the desired company and the information provided.

METHODS

The research flow is described using the RAD (Rapid Application Development) method, consisting of 4 stages in developing this website.

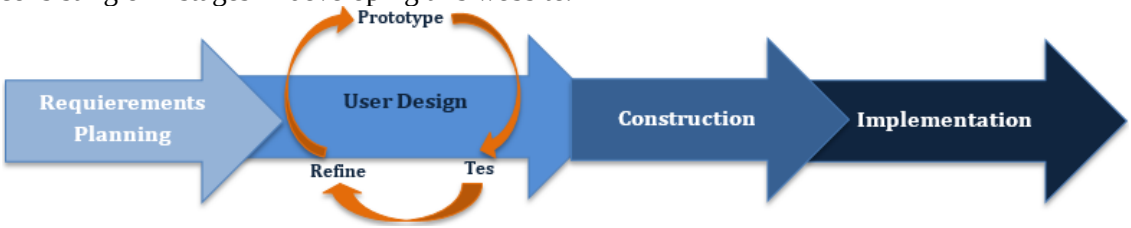

Fig. 1. Research Flow

1. **Requirements Planning**
   The first stage is done by analyzing the problems and collecting the data needed to make the Job Vacancies website. This stage starts from looking for references, determining goals, determining a timeline, designing a database, determining an overview of the design, tools, and programming language used.
2. **User Design**
   The next stage is to make a prototype website according to the features needed and its function. Furthermore, the testing process is carried out to learn about errors that arise in the future. The refine stage where we filter from an error program.
3. Construction

This stage is changing the prototype to a beta website until the final version. This third stage is quite intense because the developer must continuously code the website, perform system testing, and integrate other parts, from features, functions, and interfaces to all aspects of the project created.

4. Implementation
   The implementation stage is the stage of uploading the website to the hosting to be accessed online. In addition, it also performs optimization for website stability, improves the interface, performs maintenance, and compiles documentation. After the website can be accessed online, the next step is to collect feedback with a questionnaire. The data obtained from the questionnaire was then processed using the Likert Scale method.

RESULT AND DISCUSSIONS

System Requirements Analysis

System requirements analysis is the stage of analyzing the needs of the new system that is being developed worthy of continuing or discontinuing the development of the new system. To make it easier to determine, system requirements can be divided into two types, functional requirements and non-functional requirements.

Functional requirements

In order for the website to function as expected, several main functions are needed to manage the current feature needs, while the main functions include:

1. User Management (Admin, Applicant, Company)
   Users need to run website features or functions with various roles according to their needs, namely admins, applicants, and companies.
2. Management of job advertisements by the company
   Users with company roles can add, modify, and delete job advertisements that applicants will see later.
3. Submitting applications by applicants
   Users with the applicant role can enter an application according to the vacancy advertisement they see after the applicant completes the applicant's bio.

Non-functional needs

Requirements that contain behavioral properties of a system. One part of the non-functional requirements is operational requirements. Operational requirements are divided into hardware requirements and software requirements.

Operational Needs

To technically analyze the operation of the new system is required,

1. **Hardware Requirements**
   The hardware specifications used in building this job vacancy website include,

Table 1. Hardware requirement

Hardware	***Specification***
Processor	Intel Core i3-330
RAM	4 GB
Mouse, Keyboard	Input device
Monitor	Output device
Storage	Harddisk Toshiba 500GB

2. **Software Requirements**
   The construction and development of this job vacancy website require the following software,

Table 2. Software requirement

Software	***Description***
Figma	Designing website interfaces.

Visual Studio Code	Text editor
Sublime Text &	Text editor
Chrome	Web browser
XAMPP	Local web server
Framework Laravel 8.46.0	Website design framework
HTML5, CSS3, and PHP 7.4.20	Programming language
MariaDB 10.4.19	Relational database management system
phpMyAdmin 5.1.1	MariaDB database management application
Microsoft Windows 10	Operating system

System Design

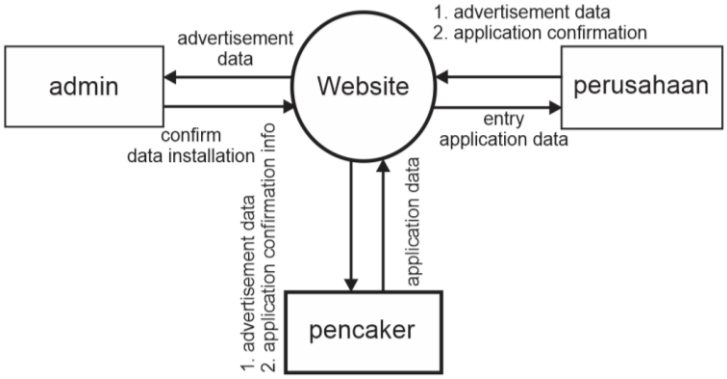

Fig. 2. Data Flow Diagram

There are three roles, namely Admin, Pencaker, and Perusahaan. These three roles are interconnected, where if the perusahaan enters advertising data, then the data will go to the admin. If the admin confirms, then the advertising data will appear on the pencaker page. The pencaker enters the application data on the website. The data will automatically enter the perusahaan if the perusahaan after confirming the application, it will be informed back to the pencaker.

Database Design

The design of the base is described using the Entity Relational Diagram (ERD).

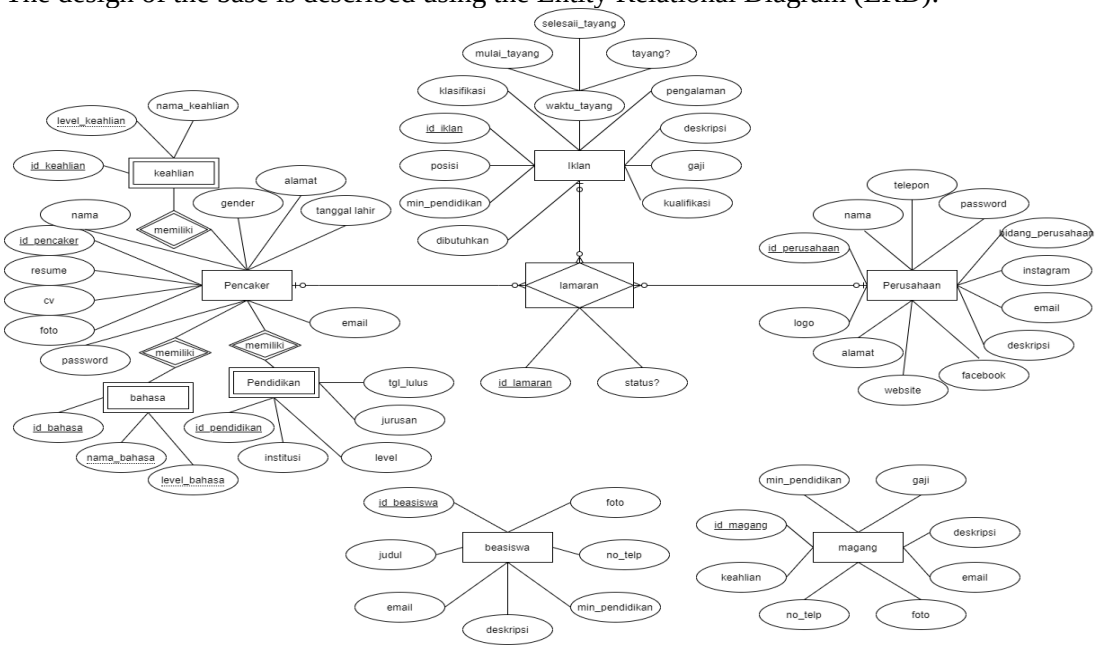

Fig. 3. Entity Relational Diagram (ERD)

Construction Database

This job vacancy website database was created using MariaDB, which is managed with PHPMyAdmin, a web-based MariaDB database management tool for various operations in MariaDB.

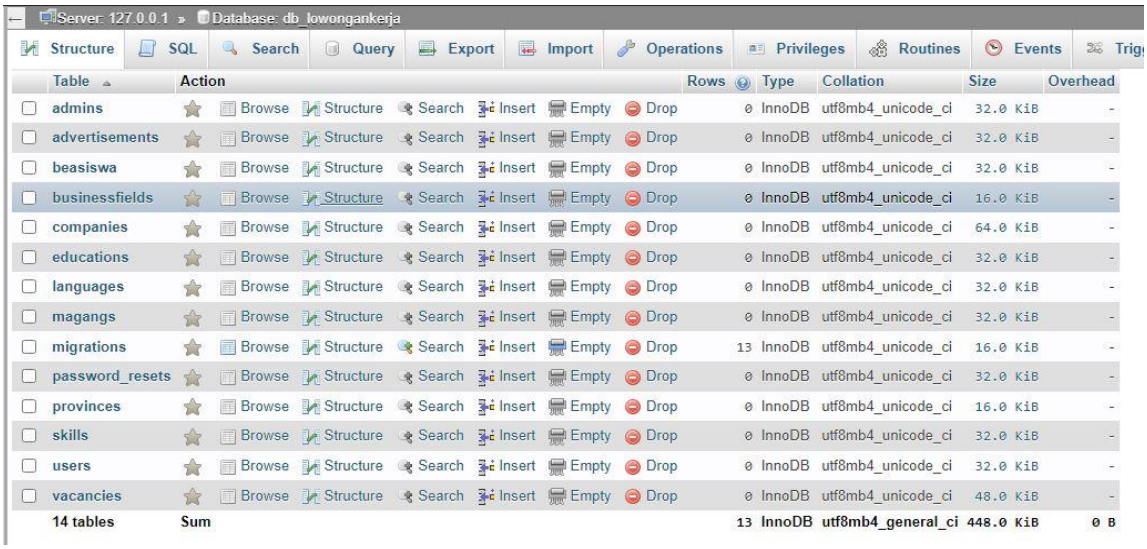

Fig. 4. Database Structure in PHPMyAdmin

The AntiNganggur website database structure consists of 14 tables including admins, advertisements, scholarships, businessfields, companies, educations, languages, internships, migrations, password_resets, provinces, skills, users, and vacancies.

Results of Interface Design

The interface on each website page is built using the Laravel framework and processed using a text editor application. The website page consists of 3 views, namely,

1. **Admin Dashboard**
   The admin dashboard view displays summary information such as the number of users, companies, active ads, applications, internships, and scholarships.

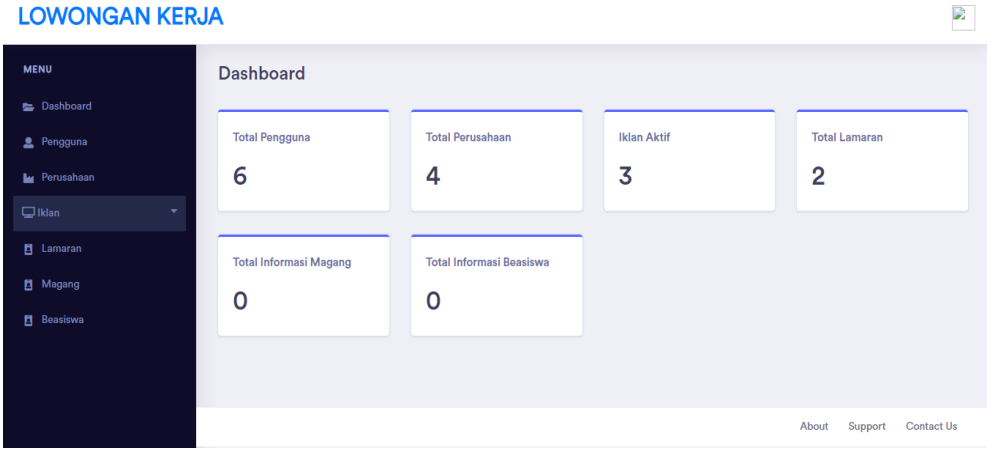

Fig. 5. Admin Dashboard View

2. **User Admin Dashboard**
   The user admin dashboard display can display information about job seeker data. The admin is given access rights to delete job seeker accounts on this page.

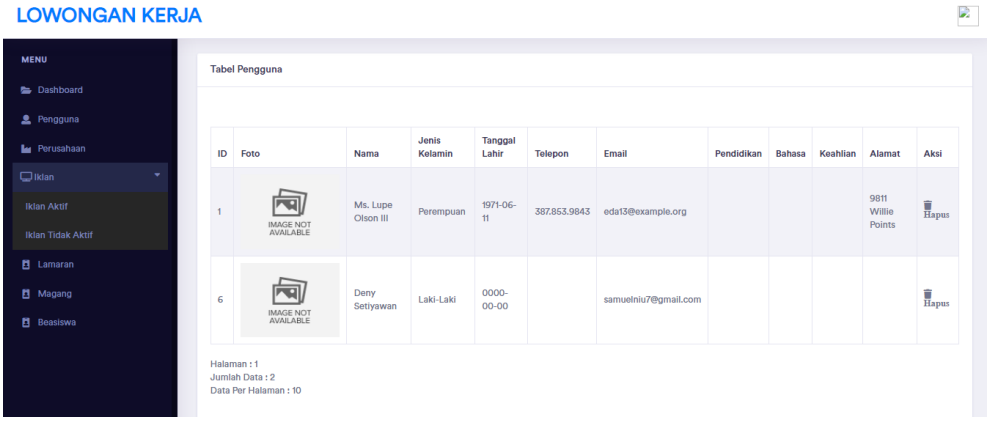

Fig. 6. User Admin Dashboard View

3. Company Admin Dashboard

The company admin dashboard display can display information about company data. The admin is given access rights to delete the company account on this page.

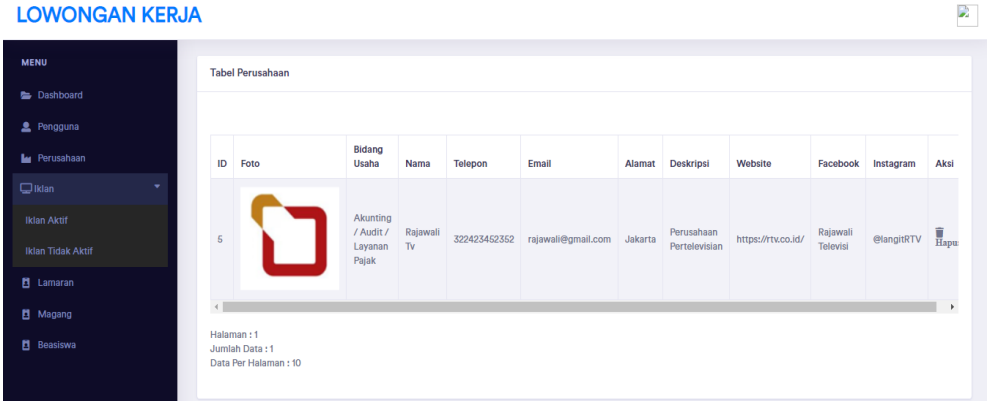

Fig. 7. Company Admin Dashboard View

Implementation

The implementation stage of the AntiNganggur job vacancy website can already be accessed online but has not been integrated using Search Engine Optimization SEO). Following are the results of the implementation of the AntiNganggur website, which can be accessed online,

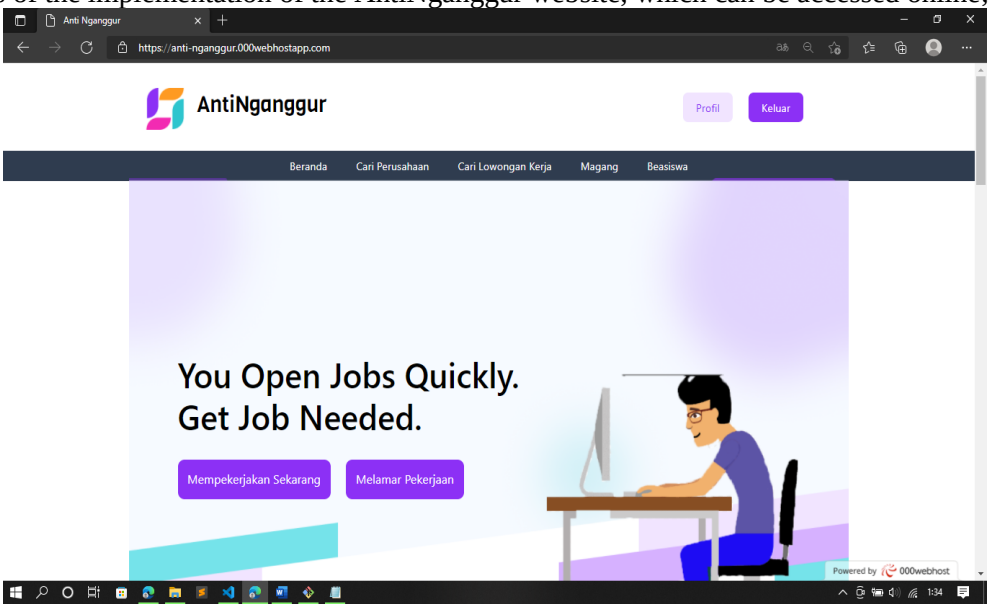

Fig. 8. The Results of the Implementation of the Online AntiNganggur Website

Performance Analysis

This research was tested using Alpha Testing and Beta Testing. Alpha Testing is used to measure the website's readiness, and Beta Testing is used to get feedback from website users. Alpha testing is tested using the Black Box Testing Method, and Beta Testing is tested using a Likert Scale,

1. **Alpha Testing**

   Alpha testing is done using the black box testing method. The black box testing method is a system test based on the functionality of the website design features. The following is an explanation of the results of the tests carried out.

Table 3. Black Box Testing on Admin

Scenario	***Expected Performance***	***Result***
admin login	Successfully login to admin dashboard	success
Delete User Account	User data has been permanently deleted and cannot be recovered on the user page.	success
Permanently Deleting Company Account	Company data that has been permanently deleted cannot be recovered on the company page.	success
add ad	Active advertising data can be stored in the database, dynamic ad pages in the admin, and company views.	success
Ad ACC Inactive	Ad data that has been in ACC is automatically entered into databases, dynamic ad pages, and companies.	success
Showing Application Page	Displays a list of job seekers applications	success
CRUD Commands On the Apprentice Page	Added/changed data will appear on the database, admin internship page, and homepage.	success
CRUD Command On Scholarship Page	Data that is added/changed is stored in the database, scholarship admin page, and homepage.	success

Table 4. Black Box Testing on Company

Scenario	***Expected Performance***	***Result***
Register	User data that has been registered is stored in the database and the admin.	success
Login	Show user profile	success
Edit User	Edited data is entered in the database and the admin	success
Uploading Files	Files that have been uploaded are stored in the database and the admin	success
Apply Company	Users who have applied for data from the resume will be automatically sent to the company.	success
Looking for Intern Info	Users already on the internship page can access various information about internships.	success
Looking for Scholarship Info	Users already on the scholarship page can access various information about internships.	success

Table 4. Black Box Testing on User

Scenario	***Expected Performance***	***Result***
Register	User data that has been registered will be stored in the database and the admin	success
Login	display user profile	success

Doing Company Edit	Edited data goes to the database and the admin	success
Checking Active Ads	Show ads that have been created and in ACC admin	success
Placing Ads	A notification appears successfully creating an ad and waiting for the admin to ACC the ad.	success
Viewing Ad History	Displays all the ads that have been created.	success
ACC Application	user application display and application ACC process.	success

2. Beta Testing

Beta testing is done to get feedback from users. Data was taken using a questionnaire distributed to a sample of users and collected using the Likert scale method.

Table 5. Likert Scale

Question	***SA***	***A***	***N***	***D***	***SD***
Job vacancy information is presented clearly.	10	18	2	0	0
The information form on the recruitment process is complete.	3	25	2	0	0
Scholarship information is presented clearly.	8	13	9	0	0
Easy account registration process.	11	17	2	0	0
Ease of ad management (add/change/edit).	12	14	4	0	0
The menu function for each role is easy to use.	8	15	6	1	0

***Explanation:** SA=Strongly Agree, A= Agree, N= Neutral, D= Disagree, SD= Strongly Disagree

Based on data processing using a Likert scale, it can be concluded that this website has a level of ease in finding information with an average value of 81.75% in the Excellent category. Ease of using the website with an average value of 87.65% is an Excellent category. The usefulness of the menu function on the website with a value of 80% is an Excellent category.

CONCLUSIONS

Results Based on the analysis and discussion of the research that has been done, the following conclusions can be drawn:

1. This research resulted in a job vacancy site called AntiNganggur, built using the Laravel framework and database design using MariaDB.
2. This study was compiled using the Research and Development (RAD) method. Tests were carried out using Alpha Testing and Beta Testing. Alpha testing uses the Black Box Testing Method to test the functionality of the website being built. Beta testing uses the Likert Scale Method, intending to get feedback from users.
3. The results obtained from Alpha Testing using the Black Box Testing Method are that the overall website can run successfully. The results obtained from Beta Testing using the Likert Scale Method are that the website has a level of ease of finding information with an average value of 81.75% in the excellent category, ease of using the website with an average value of 87.65% in the excellent category, and the usefulness of the menu function on the website with a value of 80% in the excellent category.

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