

Design and Build Application for Registration of Internship Based on The Laravel Framework

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ABSTRACT

PT Global Intermedia Nusantara is the business to turn to when creating and improving the software. Websites, e-government, and mobile applications benefit from their expertise in system analysis, database design, and application development. PT. Global Intermedia Nusantara still uses time-consuming manual methods despite a dedicated program to submit internship activities. For a web-based application to register street sellers, the study's authors want to employ the Laravel framework, the Bootstrap front-end framework, and PostgreSQL as the database management system (DBMS). There are two distinct sorts of users in this system: regular users (also known as "participants") and superusers (also known as "administrators"). With this in mind, we at PT. Global Intermedia Nusantara has made it a top priority to simplify the registration process for internship participants and aid administrators in managing internship participant data.

Keywords: - Registration, Field Work Practice, Laravel

1. INTRODUCTION

PT Global Intermedia Nusantara is a company that produces and develops software. They do system analysis, database design, and application design for websites, e-government, and mobile apps. Due to the lack of a specialized application, PT. Global Intermedia Nusantara must still rely on manual processes to submit internship operations. Researchers plan to use the Laravel framework, Bootstrap, and PostgreSQL as their database management system (DBMS) for a website-based application to register street vendors. The system has two types of users—participants and administrators—each with unique permissions and capabilities. So, at PT. Global Intermedia Nusantara, we prioritized streamlining the registration process for internship participants and making it easier for administrators to handle internship participant data.

Based on this information, the writers created a PT application for the registration of street sellers. Laravel's many benefits led us to use it for building the Global Intermedia Nusantara website, including its ease of installation, its compatibility with PHP, its support for the Model-View-Controller architecture pattern, its comprehensive library package, its artisan tools, its ability to ease database migration, its blade template capabilities, its thorough unit testing, and its extensive usage tutorials. This application's design uses the Bootstrap framework because of its responsive nature, ease of customization, and overall flexibility.

The company specifically requested that PostgreSQL be utilized as the Database Management System for this application's architecture instead of MySQL due to PostgreSQL's many advantages over MySQL, including its complete feature set, increased security, ease of replication, and user-friendliness. This internship participant registration application was developed to streamline the registration process for both participants and administrators. The problem with this research is that the PT. Global Intermedia Nusantara has various frameworks that depend on the project, so the Laravel must be tested. The second problem is that PostgreSQL could match the needs of the business process or application scenario. The third problem is that using a library of Laravel would aspect the usage of the MVC framework. This research makes a proper approach to fit all the issues of this problem.

2. THEORETICAL FRAMEWORK

2.1 Application

An application is a precompiled piece of software that may be run on a computer to carry out user commands to produce more precise results in line with the app's intended function—desired or anticipated processing of data and

computational resources. For those with a firm grasp on the application as a tool with a specified position and an integrated set of features, an application is a fully functional and usable piece of software on a computer (Hasan & Asep, 2014).

2.2 Internship Participant Registration

PT. Global Intermedia Nusantara is open for internship or fieldwork practicum. Internship applications must be submitted in person or via email to Human Capital Management PT. Global Intermedia Nusantara, with a cover letter from the student's university or school and a proposal prepared before the internship plan or fieldwork practice. The GI HCM department will then decide on whether or not to approve the scheme. After the HCM GI department has chosen a vendor, that group will send a report to another group with an update of the acceptance status.

2.3 Software Development Life Cycle

SDLC is a logical method used by a system analyst to design an information system that involves requirements, validation, training and system owners [2]. SDLC is identical to the waterfall system development technique because the stages drop from top to bottom. The following are the stages of the SDLC:

- a. Planning
- b. Analysis
- c. design
- d. Implementation
- e. Use

Creating new systems is also evolving in tandem with technological progress. The SDLC methodology is the result of the many following systems development techniques:

- a. Prototyping
- b. Rapid Application Development (RAD)
- c. Joint Application Development (JAD)
- d. Unified Modeling Language (UML)

2.4 Prototyping

A requirements Prototype is a prototype made by developers by defining system functions and procedures where users cannot explain the system. Here are the steps of the requirements prototype:

1. Analysis of user requirements, explaining to developers about the system requirements they want.
2. Make a prototype of the system that the user has described.
3. Adjusting the prototype to the user's wishes, the developer asks the user about the prototype that has been made and follows the system requirements.
4. In Creating a new system, the developer uses the prototype that has been made to create the developed system.
5. Perform system testing. Users conduct trials on the developed system.
6. The system is adjusted to the wishes of the user and the needs of the system. If it is appropriate, the system is ready for use.
7. This application is built using a prototyping system development technique, and the type of prototype used is a requirements prototype. Compared to others, the advantage of this type is that the application builder makes it easier for users to explain what they want.

2.5 PHP

Hypertext Preprocessor (PHP) is an open-source programming language that may be used to create a website compatible with other languages and technologies, including HTML, XML, javascript, and databases. PHP is a server-side programming language. Put another way. The server will translate a computer script and then provide the translated text to the client. PHP makes web application programming interfaces (APIs) and database exchanges possible [3]. This program takes advantage of PHP 7, which offers several improvements over earlier versions.

2.5 Object-Oriented Programming

Object-Oriented Programming (OOP) is a software strategy that organizes software as collections of objects containing data, an object-oriented programming technique [4]. Currently, Object-Oriented Programming is widely chosen because there were many difficulties when transforming the results from one development to another in the old method.

2.6 Model View Controller

The method in programming that decouples the three primary aspects of an application (data processing, user interface, and control) is known as Model-View-Controller (MVC). Model, View, and Controller (abbreviated MVC) are any program's three primary parts [5]. Here's a fuller breakdown of the MVC concept's three pillars:

- a. The model, linked to the database for CRUD operations (create, read, update, and delete), handles validation from the controller but is not related to the view.
- b. The second component, "View," is where the user-facing scripts for receiving and displaying data are stored. Typically, the controller will choose the look of this area, an HTML template.
- c. The controller controls how the model and view interact with one another. The controller's job is to take in input from the user (in the form of commands and data) and then make decisions about how that input should be processed.

2.7 Laravel

In the realm of PHP frameworks, Laravel is one of several that provide modular programming. Modular programming is accomplished by utilizing the driver and operating system bundle. The driver allows us to easily modify and fine-tune caching, session, database, and optimization functions. The use of bundles provides for the preservation of nearly all types of code for later reuse or distribution to all Laravel users. Laravel is appealing because any code written in it can be quickly packaged into a single archive [6].

2.8 Bootstrap

Although it is primarily an HTML and CSS framework, Bootstrap includes jQuery-based javascript effects. Bootstrap provides a set of base class components for building user interfaces that are both appealing and lightweight. In addition, Bootstrap has a grid component for rapidly establishing practical layouts. Users are also free to customize the look of a website built using Bootstrap by modifying the template's CSS and adding new classes [7].

2.9 Database Management System

Database management system (DBMS) software helps users define, organize, secure, and share their data. A database management system (DBMS) can also refer to the software used to construct or manage a database from which other programs can obtain data [8].

2.10 PostgreSQL

PostgreSQL, also called Postgres, is an open-source Object-Relational Database Management System. PostgreSQL is designed with flexibility, originality, and backward compatibility in mind. Face off against other major relational database providers like Oracle, MySQL, SQL Server, and others. In addition to state entities, the business sector also makes use of it. PostgreSQL is a database management system (DBMS) that can be used on any platform [9].

3. SYSTEM DESIGN

3.1 Use Case Diagram

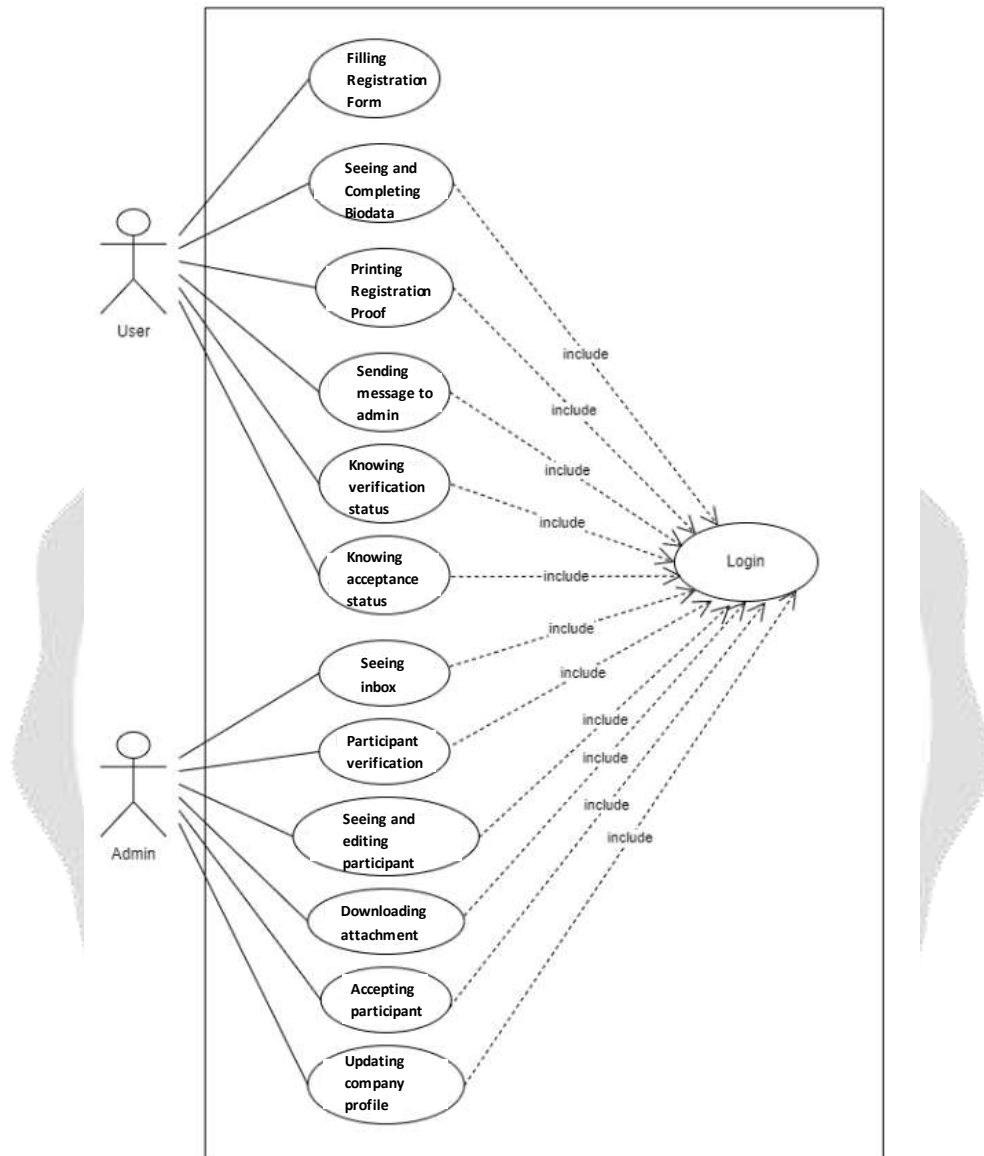


Fig-1 Use Case Diagram

Figure 1 is a use case diagram of PT. Global Intermedia Nusantara's internship registration application explains some parties involved and their respective access permissions.

3.2 Registration Activity Diagram

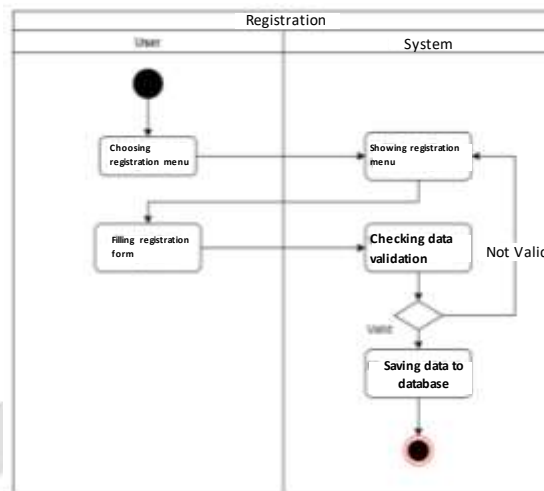


Fig-2 Registration Activity Diagram

The internship registration process is depicted in Figure 2. The process begins when the user clicks the “Register” menu item, at which point the system displays the registration page. After that, the user can fill out the registration form. Following this, the system will determine whether or not the input data is valid based on the data type and the completeness of the data entered in each column. If the information is correct, it will be saved to the database.

3.3 Login Activity Diagram

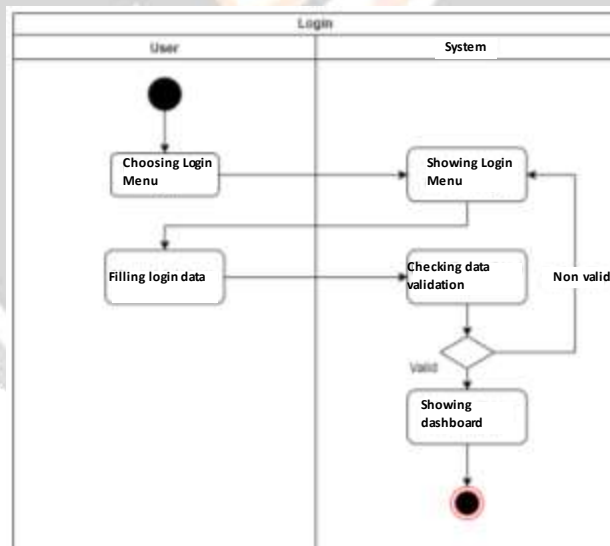


Fig-3 Login Activity Diagram

The process of login into the system is depicted in Figure 3. The system will use the login page when a user picks the login option from the main menu. The user can then input their login credentials (username and password). After determining whether or not the data entered is valid, depending on the data type. The system will present the user dashboard whether or not each column contains the required information.

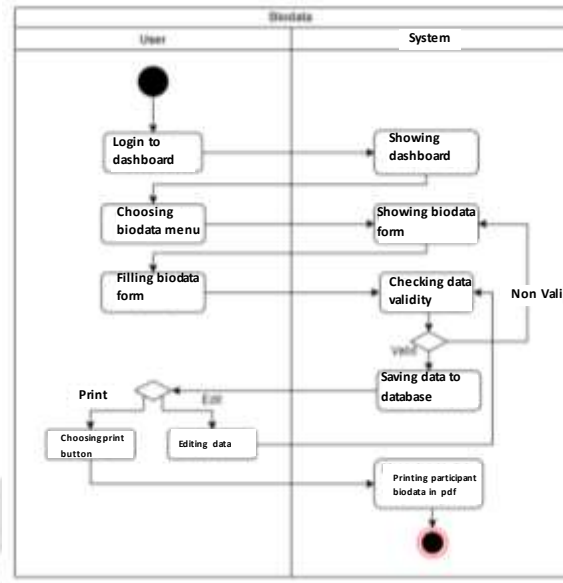


Fig-4 User Profile Activity Diagram

The flow of participant biodata is depicted in Figure 4. The workflow begins when a user logs in to the dashboard, at which point the system displays the dashboard page. After clicking on the biodata option, the system will present the biodata form to the user. The user can then complete the biodata form. Following this, the system will determine whether or not the input data is valid based on the data type and the completeness of the data entered in each column. If the information is accurate, it will be saved to the database. The user can also choose to change the data on the biodata form. At this point, the system will save the input data into the database if the information is judged acceptable, or they can choose to print the participant’s biodata as proof of registration in pdf format.

3.4 User Table Design

Table-1 Interval values and media feasibility level classification

No	Field	Type	Size	Description
1.	id	Bigint (PK)		Identity number
2.	name	Varchar	255	Full name
3.	email	Varchar	255	Email address
4.	password	Varchar	255	Password
5.	is_verifikasi (is_verified)	Integer		Verification status
6.	role	Integer		User role
7.	is_lulus (is_accepted)	Integer		Acceptance status
8.	created_at	Timestamp		Creation time
9.	updated_at	Timestamp		Update time

Table-2 Biodata Table

No	Field	Type	Size	Description
1.	id	Bigint (PK)		Identity number
2.	no_induk (registration number)	Varchar	20	Registration number
3.	tempat_lahir	Varchar	255	Birth place

	(birth_place)			
4.	tanggal_lahir (date_of_birth)	Timestamp		Date of birth
5.	agama (religion)	Varchar	20	Religion
6.	jenis_kelamin (sex)	Enum	[L/P]	Sex
7.	alamat (address)	Text		Address
8.	no_telp (telephone_number)	Varchar	12	Telephone number
9.	asal_sekolah (school_origin)	Varchar	30	School origin
10.	jurusan (major)	Varchar	20	Major
11.	tanggal_mulai (start_date)	Timestamp		Internship start date
12.	tanggal_selesai (end_date)	Timestamp		Internship end date
13.	foto (photo)	Text		Photo
14.	surat_permohonan (application_letter)	Text		Internship application letter
15.	proposal	Text		Proposal
16.	created_at	Timestamp		Creation time
17.	updated_at	Timestamp		Update time

Table-3 Reserve Table

No	Field	Type	Size	Description
1.	id	Bigint (PK)		Identity number
2.	judul (title)	Text		Message title
3.	keterangan (message_content)	Text		Message content
4.	status	Integer		Message status
5.	created_at	Timestamp		Creation time
6.	updated_at	Timestamp		Update time

Table-4 Company Profile Table

No	Field	Type	Size	Description
1.	id	Integer (PK)		Identity number
2.	nama (name)	Varchar	255	Company name
3.	alamat (address)	Text		Company address
4.	no_telp (telephone_number)	Varchar	20	Company phone number
5.	created_at	Timestamp		Creation time
6.	updated_at	Timestamp		Update time

3.5 Relational Table



Fig-5 One-to-One Relationship between Users and Biodata

Figure 5 depicts a one-to-one relationship between the users and biodata tables, with the id column in the user’s table as the primary key and the id column in the biodata dataset as the primary key. Users are displayed when the user fills out the biodata form; the user is no longer required to fill in the name because the parameter is already linked to the biodata table’s id.



Fig-6 One-to-One Relationship between Users and Message

Figure 6 depicts a one-to-one relationship between the user’s table and the messages table, with the id column in the user’s table as the primary key and the id column in the messages table as the primary key. When a user fills out a form to send a message, the user no longer needs to fill in the name because the parameter is already linked to the message table id.

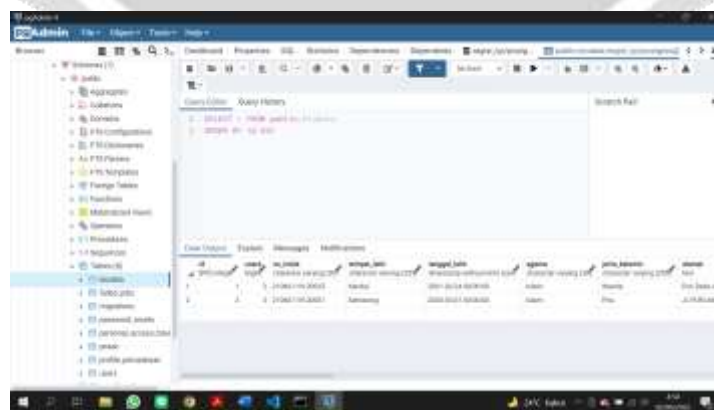


Fig-7 Postgres Schema

The Postgres database in the pgadmin4 software is depicted schematically in Figure 7. The failed jobs, migrations, password resets, and personal access token tables are among the eight tables in the Postgres schema. The failed jobs, migrations, password resets, and private access token tables are created during the first migration process. The other

four tables, namely the user’s table, biodata table, communications table, and company profile table, are self-contained and have relationships.

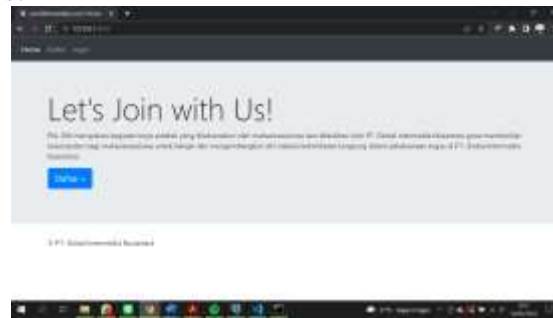


Fig-8 Homepage Screen

The application’s landing page, depicted in Figure 8, is the first thing a user sees after logging in to the program using a web browser. The navigation bar at the top of this page will provide three options: home, register, and log in. The home menu will take you back to the homepage, the register menu will take you to the account creation page, and the login menu will take you to the user and admin login screens, respectively.



Fig-9 Registration Screen

Figure 9 shows a listing page with a function for creating a new account. This page is presented as a form, with fields for the user’s name and email address that can be filled in to create a report that can be used to log into the application later.



Fig-10 Login Screen

Figure 10 shows an example of a login page that allows users to access the program. Because the password has been set automatically (“bcrypt”) on the application controller, users can enter the previously registered email on the registration page with the password “123.”

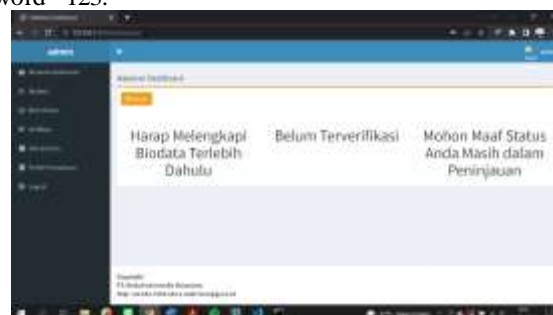


Fig-11 Admin Dashboard

When the admin logs into the program, the system will display Figure 11, an image of the admin dashboard page. Due to the different roles in the user's table, the admin dashboard page will display numerous more extensive options than the user dashboard page. The choices include dashboard Home, Biodata, Send Message, Verification, Participant Data, Company Profile, and a logout menu. In addition, a photo and user name will be displayed in the top right corner of the menu bar, and copyright information, company name, and corporate contact information will be displayed in the footer.

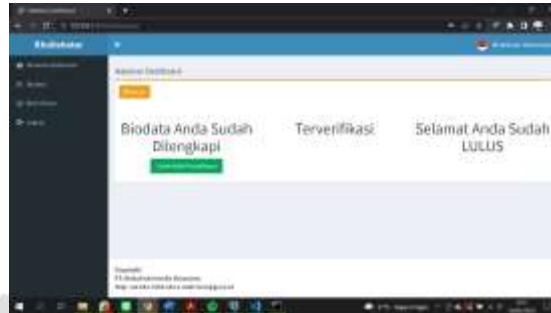


Fig-12 User Dashboard

Figure 12 depicts the user dashboard page the system will display once the user has logged into the application. Due to the varying responsibilities in the user's table, many menus will be displayed on the user dashboard page, which has fewer features than the admin dashboard. Home Dashboard, Biodata, Send Messages, and a menu to log out from the application are among the menus. In addition, a photo and user name will be displayed in the top right corner of the menu bar, and copyright information, company name, and corporate contact information will be displayed in the footer.



Fig-13 Biodata Menu

Figure 13 depicts the biodata menu screen that the system will show after the user logs into the program. This page will show a form the user must complete registering for the internship program. Users must also upload related items like proposals, application letters, and images to validate their data. The status on the dashboard page will change to a completed bio once the user has completed the form. Users can also update their biodata by merely re-entering the information that needs to be changed on the form.



Fig-14 My Message Menu

The system will show the user my message menu screen in Figure 14 once logged into the program. Messages sent to the administrator will be displayed on this page. The user can check the status of a letter sent and see if the administrator has read it on this page.

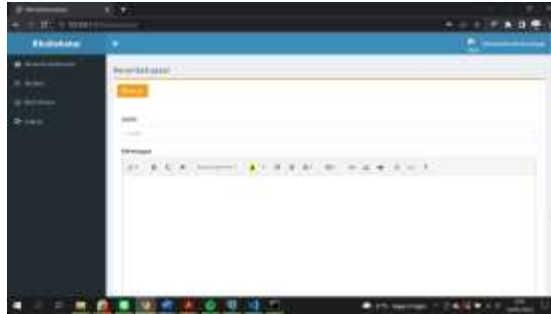


Fig-15 Send Message Menu

Figure 15 is an image of the send message form page that will be displayed by the system when the user has logged into the application. On this page, a form will be displayed that must be filled in by the user when he wants to send a message to the admin. The user can fill in the title or subject of the message in the title column and the message's contents to be conveyed in the description column. In addition, users can also attach photos or videos to the description column because the description column is presented with a summer note bootstrap template.

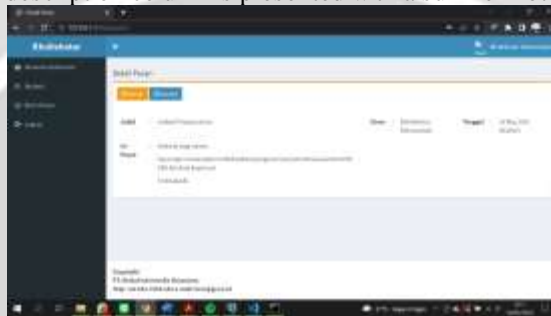


Fig-16 Order Detail Menu

Figure 16 depicts the menu page for my message details that the system will show after the user logs into the program. This page will show some details about the transmitted message, such as the message's title, content, sender, and date of transmission.

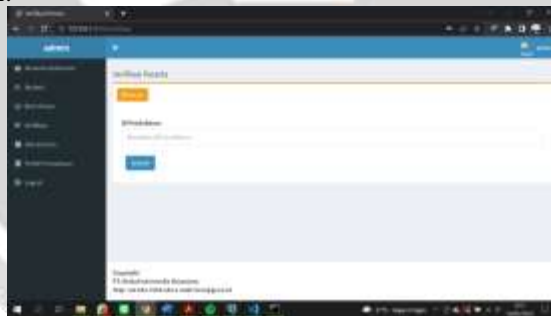


Fig-17 Verification Menu

Figure 17 is an image of the verification menu page that will be displayed by the system when the admin has logged into the application. On this page, a verification column will be displayed, which can be filled in by the admin to verify participants by using the appropriate participant id in the user's column in the database.

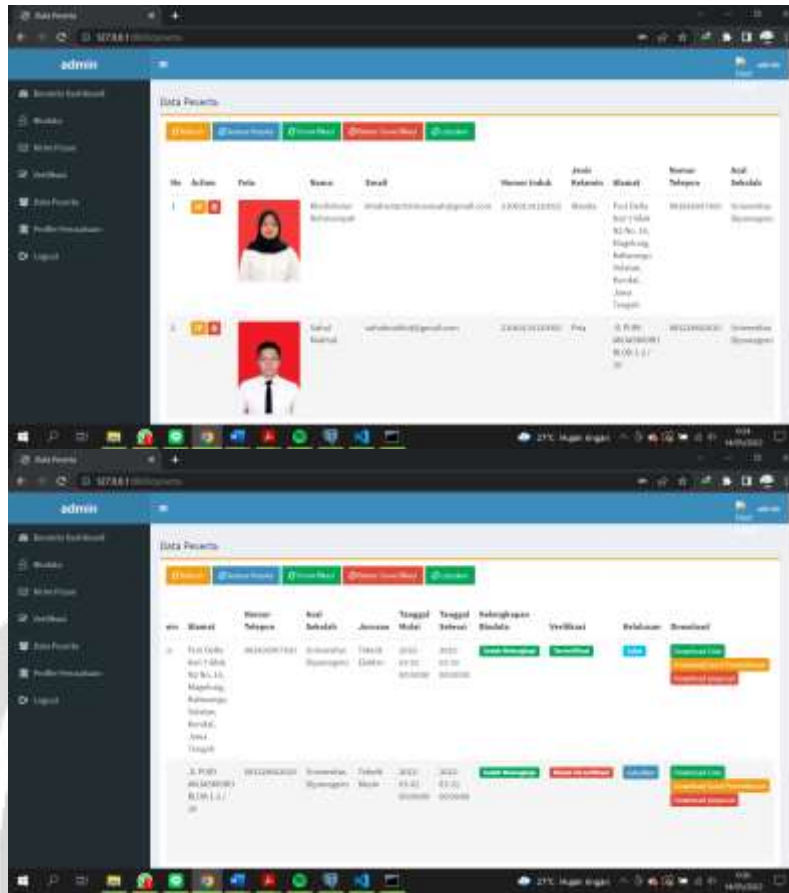


Fig-18 Worker Detail Menu

Figure 18 is an image of the participant data menu page that will be displayed by the system when the admin has logged into the application. This page will display a table containing complete participant data. On this page, admins can filter participant data based on the filters provided. In addition, admins can also edit and delete participant data. Admin also has access to pass participants by selecting the pass button in the graduation column and can download files that participants have attached via the button in the download column.



Fig-19 Company Profile Menu

Figure 19 shows the firm profile menu page that the system will authenticate after the administrator logs into the program. Administrators can change corporate information on this page by entering information into the appropriate columns. This data will be saved into the database and later retrieved to finish the presentation on the pdf.blade.php view.

BURAT PENDAFTARAN PROGRAM PKL
PT. GLOBAL INTERMEDIA NUSANTARA
Jl. Jendral Sudirman No. 123 RT 07 RW 029 Plosojati, Mangrove, Tangerang - 15171 Telp 0274-02220

Kepada : Manajer HRD PT. Global Intermedia Nusantara
 Kepada : Petugas Pendaftaran PKL
 Kepada : Tidak diketahui

Membahagikan pendaftaran program PKL yang tidak saya lakukan melalui laman web dari PT. Global Intermedia Nusantara. Dengan ini saya yang bertanda tangan dibawah ini :

Nama Lengkap : Kheirulita Rohmaniyah
 Nomor Induk : 2100110120025
 Tempat Lahir : Kuala
 Tanggal Lahir : 2000-02-21 00:00:00
 Agama : Islam
 Jenis Kelamin : Wanita
 Alamat : Puri Delta Auri 7 Blok N2 No. 10, Mangrove, Kalweraga Selatan, Kuala, Jawa Tengah
 Nomor Telepon : 081810007160
 Asal Sekolah : Universitas Diponegoro
 Jurusan : Teknik Elektro
 Tanggal Mulai : 2022-03-01 00:00:00
 Tanggal Selesai : 2022-03-31 00:00:00

Melalui surat ini saya bertanda tangan untuk mendaftar program PKL di PT. Global Intermedia Nusantara dengan mengisi formulir yang telah disediakan. Sebagaimana dengan formulir yang telah saya serahkan sebelumnya, sebagai bukti pendaftaran dapat dan saya bertanggung jawab penuh sebagai berikut :

1. Surat Pendaftaran PKL
2. Proposal PKL

Ditandatangani

Kheirulita Rohmaniyah

Fig-20 Company Profile Menu

The printed registration proof file page shown in Figure 20 is the one the user will acquire after logging into the program and downloading it using the print registration proof button on the dashboard page. This document's contents will be shown as a pdf file. After the participants have signed it, they can bring it to the first day's events for the internship program.

4. CONCLUSIONS

So, based on what we've seen so far in the design and implementation of PT. Global Intermedia Nusantara's registration application for internship participants, we can conclude as follows:

Because it can be accessed instantly over the web, has a comprehensive menu, and is simple to use, this application may make applying for street sellers at PT. Global Intermedia Nusantara makes it easier for prospective participants. Because the incoming participant data can be integrated directly into the PostgreSQL database, the application designed can make it easier for administrators to handle data on prospective participants who apply for street vendors at PT. Global Intermedia Nusantara.

Using the Laravel 8 framework for application design makes it easier for programmers to code. In addition, because it conforms to the existing framework, the application may be modified more easily.

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