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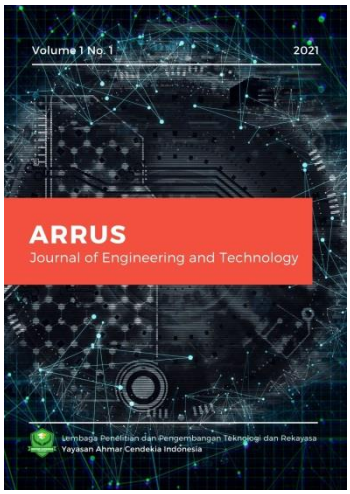

RESEARCH ARTICLE

Online Guest Book Application for Computer Science Department at Bina Bangsa University

Basuki Rakhim Setya Permana*, Sigit Auliana, Ali Rohman, Ahmad Munawir, & Ahmad Andhika Mulyawansah

Department of Computer Science, Faculty of Computer Science, Bina Bangsa University, Serang City, Indonesia

*Corresponding author: Basuki Rakhim Setya Permana, Faculty of Computer Science, Bina Bangsa University, Serang, Indonesia

E-mail:basukirakhim@gmail.com

Abstract: Information technology is currently useful for automating various processes and activities that were previously done manually. Now human activities are turning into computerized systems. Information that is presented quickly and precisely greatly influences the level of work efficiency and effectiveness in various fields. This research uses the waterfall method, which is a software development process model which is a sequential and linear approach. This approach relies on sequential and progressive stages, where each stage must be completed before entering the next stage. Based on the results of the research and discussions that have been carried out, it can be stated that with this web-based guest book application, it is hoped that the input, data collection and recording processes can be more effective and efficient and the security of data storage will be more guaranteed.

Keywords: application, web design, guest book,php

1. Introduction

Information technology is currently useful for automating various processes and activities that were previously carried out manually. Now human activities are turning into computerized systems. Information that is presented quickly and precisely greatly influences the level of work efficiency and effectiveness in various fields.

The guest book is a tradition that is commonly found in various institutions. However, in the current digital era, many institutions are starting to switch to digital solutions to record existing guest data. This also applies to the Computer Science Study Program at Bina Bangsa University. By using a web-based guest book application, it is easy for students to fill in guest books which previously still used paper and pen, and study programs can replace manual guest books with a more efficient and affordable system.

The Guestbook process in the Computer Science Study Program at Bina Bangsa University still uses a manual process where data is stored in the guestbook, which allows for confusion in searching for data and even searching for data takes a long time.

This causes the performance of the administration (TU) from the Computer Science Study Program at Bina Bangsa University in particular to be inefficient. Storing guest data is an obstacle to the performance of the administration (TU) in collecting data on who guests and students frequently visit because the storage of this data is still written down in books, and it is very likely that searching for guest data will take a very long time. So a guest book application is needed, to help process guest data and store guest data in the Computer Science

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Study Program section at Bina Bangsa University. It is hoped that the guest data collection process can be more effective and efficient.

2. Literature Review

2.1. Theoretical Description

2.1.1. Understanding Application

According toSabiilarrasyad, F., & Aknuranda, I. (2023)An application is software that plays a role in helping human work to be easier, more effective and efficient. Various activities that were initially carried out manually, now with applications, data processing and data storage can be completed relatively quickly.

2.1.2. Understanding Guest Book

According toHendri, M., & Ikhwan, M. (2021)A digital or electronic guest book is software that allows users to directly enter data via a computer and also functions as a tool to track the number of guests visiting a place or institution. Guestbook data collection basically only records information about visitors or visits to a location.

2.1.3. Understanding Websites

According toAgefiftien, A., & Yanuar, Y. (2021)A website is a series of web pages containing information that are connected to each other and accessed via the internet. In the current digital era, websites have become an important element in human life.

2.1.4. Understanding PHP

PHP is a script for web script programming*server-side*, a script that creates HTML documents automatically*on the fly*, meaning that HTML documents produced from an application are not HTML documents created using a text editor or HTML editor. PHP/FI is the initial name of PHP. PHP is Personal Home Page, FI is Form Interface. First created by Rasmus Lerdoff. PHP was originally a program specifically for receiving input via forms displayed in web browsers. This software is distributed and licensed as Open Source software.Yulisman, Y. et al (2022).

2.1.5. Understanding HTML

According toSetianti, N., et al (2023)HTML stands for Hyper Text Markup Language, which is a script in the form of tags to create and organize the structure of a website. HTML is an abbreviation of Hypertext Markup Language, which is a web standard language managed by its users by the W3C (World Wide Web Consortium) in the form of tags that organize each element of a website. HTML acts as a structure for website pages that places each website element according to the desired layout.

2.1.6. Understanding XAMPP

XAMPP is Apache web server software which includes a MySQL database server and can support PHP programming. XAMPP is software that is easy to use, free and supports installation on Linux and Windows. Another advantage is that you only need to install it once and Apache Web Server, MySQL Database Server, PHP Support (PHP 4 and PHP 5) and several other modules are available.Mayasari, N., Hermansyah, H., & Prasetyo, D. (2023).

2.1.7. Understanding MySQL

According toYana, A., et al (2023)MySQL is a relational database software or Relational Database management system (RDBMS) where everyone is free to use MySQL, but may not be used as a closed source or commercial derivative product.

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3. Research Methods and Materials

This research uses the waterfall method, which is a software development process model which is a sequential and linear approach. This approach relies on sequential and progressive stages, where each stage must be completed before entering the next stage.

According to Mass, et al (2022)."Research methods are a way to obtain solutions to various research problems". Research methods are basically a scientific way to obtain data with specific purposes and uses. Research methods can be used as a guide for writers and make it easier for writers to direct their research, so that the research objectives can be achieved. The detailed development procedures in this research can be seen in the Figure 1 and the explanation.

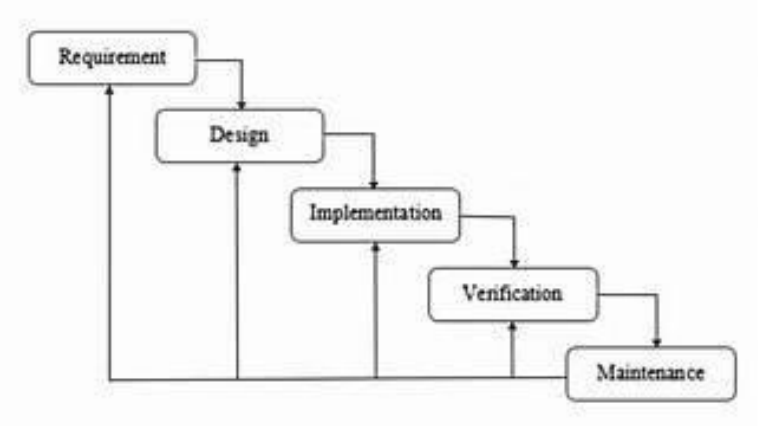

Figure 1. Waterfall Method

a. Needs Analysis (Requirements Gathering)

The application that users expect is an application that can provide detailed information regarding the "Web-Based Guest Book Application in the Computer Science Study Program at Bina Bangsa University".

b. Design

At the design stage the author creates an interface design by designing the input and output designs that will be used in the proposed system.

c. Implementation

This stage is the stage where the author of the proposed system creates an application, namely the XAMPP application and the PHP MyAdmin database.

d. Testing

This stage is the stage where the author tests the system created before use. As well as comparing with the previous system, to bring out the advantages in the old system and reduce errors in the new system.

e. Maintenance

Software that has been completed, run and maintained. The maintenance carried out includes correcting errors that were not found in the previous steps.

3.1. Analysis

1) Running system analysis

The system currently running in the Computer Science Study Program at Bina Bangsa University, namely:

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a. The officer gives the guest book to the guest.
b. Guests fill in data in the guest book.
c. Once completed, the guest will give the data back to the officer
d. The officer checks the completeness of the data filled in by the guest
e. If the data is complete, the officer will keep a guest data book.

2) Running System Flowmap

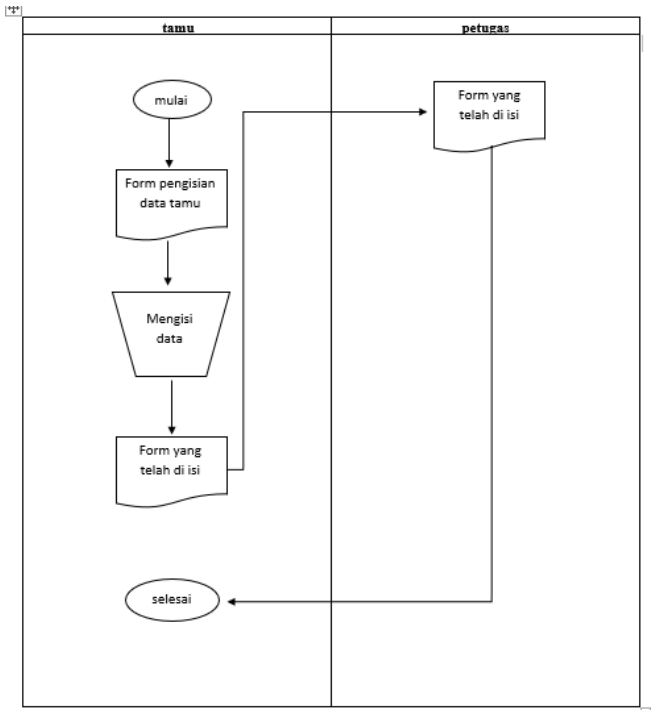

Figure 2. FlowMap Diagram

3) Proposed Problem Solving

One effort to fix this problem was to design an application to manage guest books. So that the process of recording and managing data for guests visiting the computer science study program at Bina Bangsa University can be carried out well.

3.2. Planning

To analyze the proposed system, in this research the Unified Modeling Language (UML) program is used, to describe the proposed procedures and processes, in this depiction the use case diagram is used as follows:

1) Use Case Diagrams

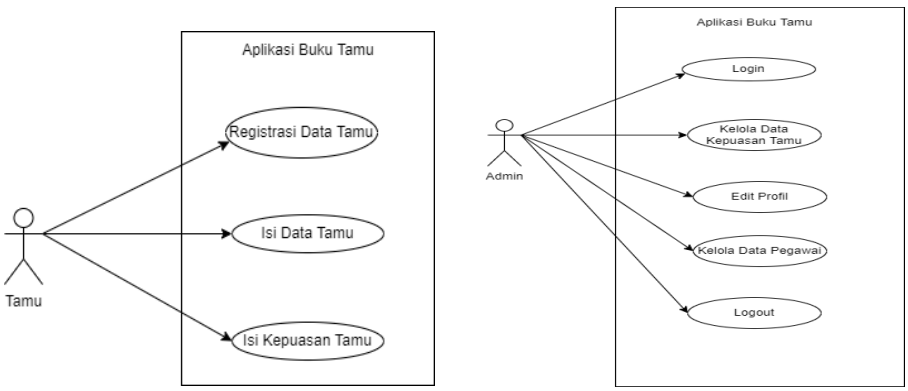

Figure 3. Use Case Diagram of Guest Book Aplication

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2) Activity Diagrams

a. Guest activity diagram

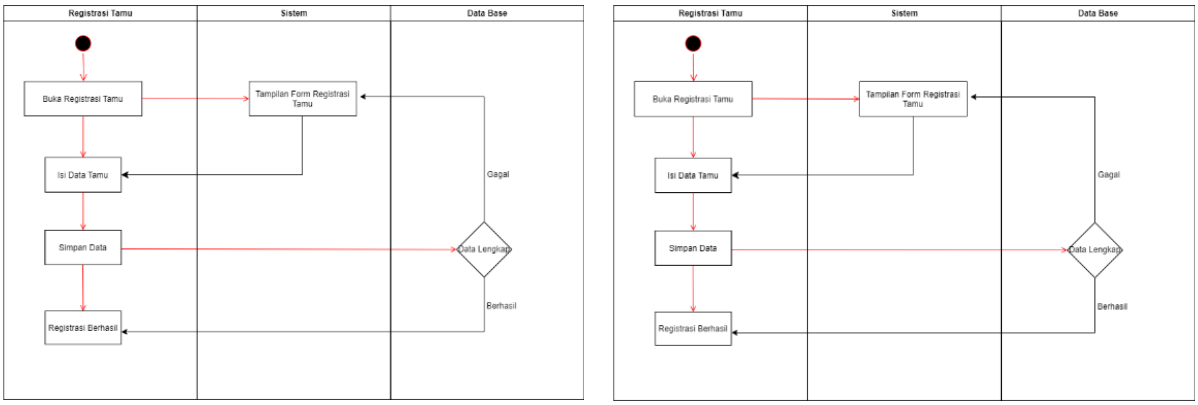

Figure 4. Guest Activity Diagram

b. Admin activity diagram

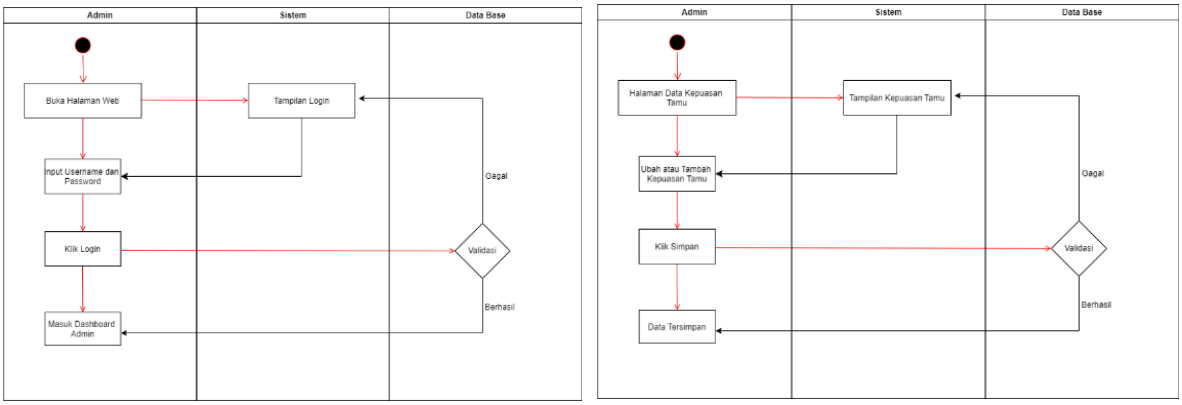

Figure 5. Admin Activity Diagram

3) Sequence diagrams

a. Sequence Diagram Admin

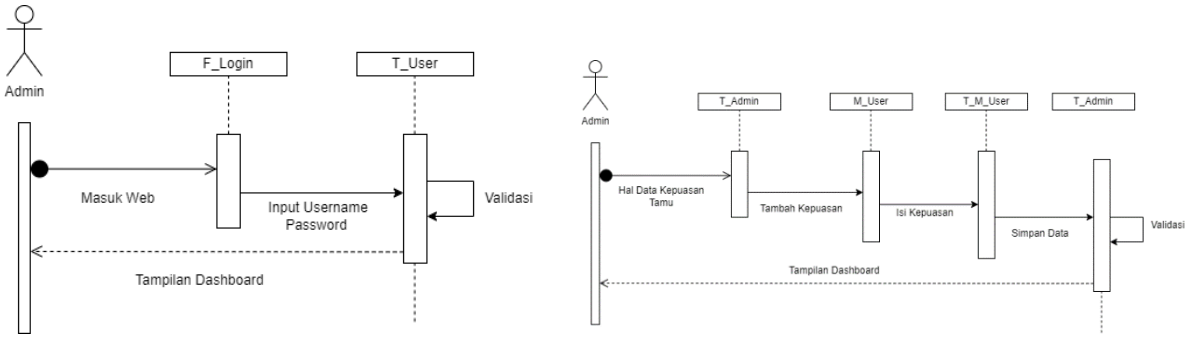

Figure 6. Admin Sequence Diagram

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b. Guest Sequence Diagram

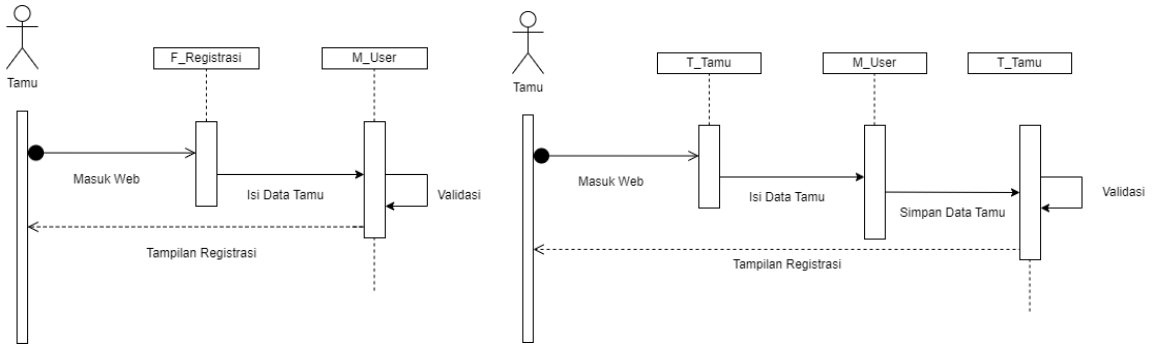

Figure 7. Guest Sequence Diagram

4. Results and Discussion

4.1. System specifications

a. Software

This research used software to build a the web, including the following:

- System Operation : Windows 10 64-bit.
- Web Server: XAMPP
- Database: MySQL
- Editor Code : Sublime Text
- Web Browser: Google Chrome

The data is the core software used in creating this system. When using the application, only a web browser is needed as the main software to run the web-based guestbook application.

b. Hardware

The hardware specifications recommends to develop the web runs well are as follows:

- Processor: Intel Core i3
- Memory size (RAM) : 4GB
- Monitor: NVIDIA MX110
- Keyboard: 108 keys
- Hard Disk : 128 GB
- Mouse: Standard

4.2. Application Usage Procedures

Procedures for using develop the web consist of:

a. Login Page

The function of the login page is for admins to log in to the web.

- Open a web browser and search for your e-mail page.
- Enter your username and password to log in.
- Click login and you have successfully entered the dashboard page.

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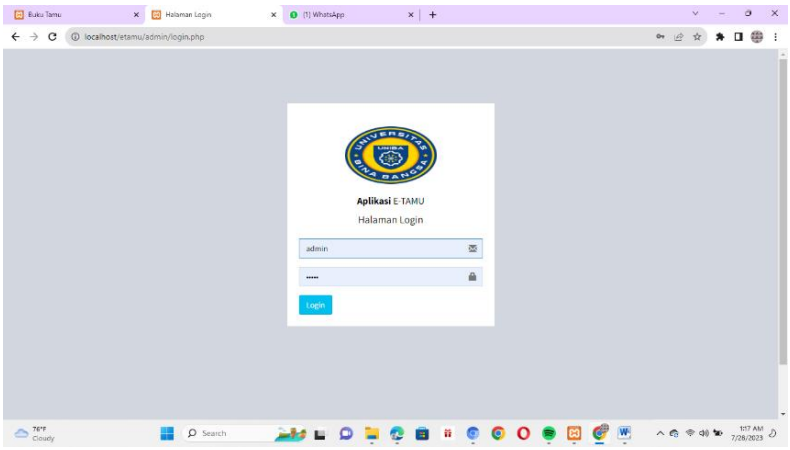

Figure 8. Login Guest Book Aplication Display

b. Menu Page

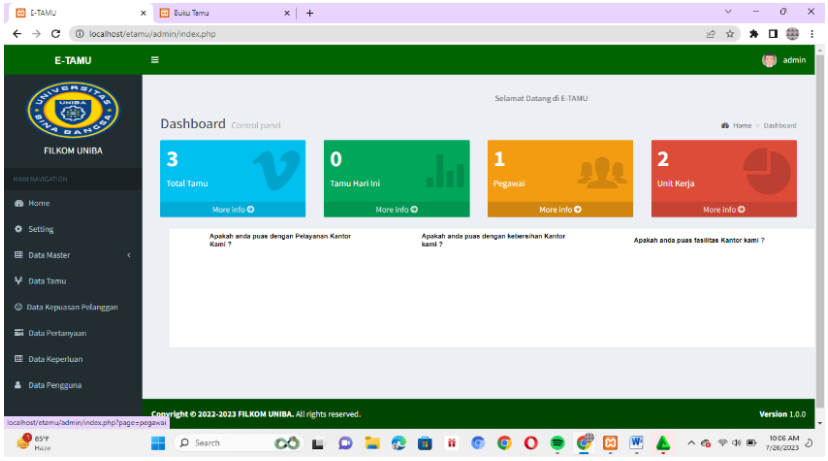

Figure 9. Dashboard Guest Book Aplication Display

After successful login, the admin dashboard page will be displayed in the form of a main menu consisting of: Home, Settings, Master Data, Customer Satisfaction Data, Storage Data, Requirements Data, User Data.

c. Guest Data Page

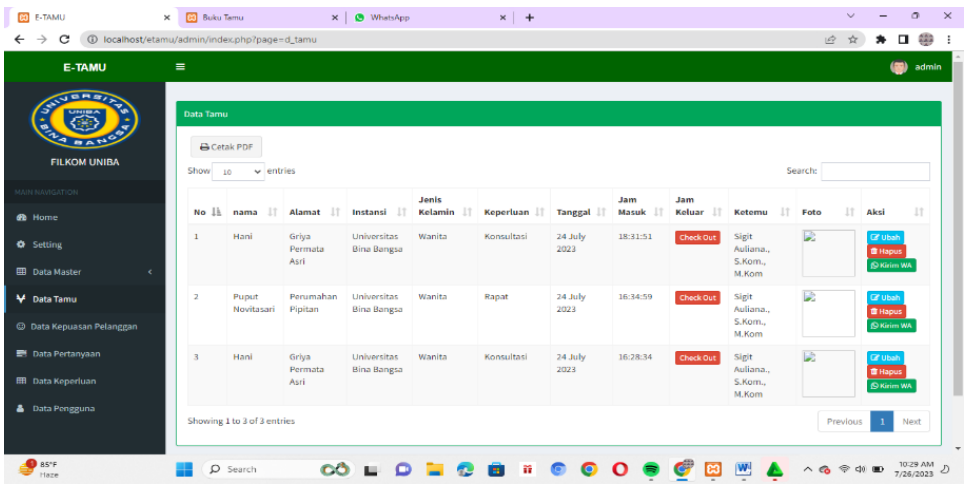

Figure 10. Guest Data Display

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If you select the guest data menu, guest data will be displayed which has entered how many guests have registered before meeting with lecturers who have needs. The initial steps in the guest data menu are:

- Click the guest data menu
- If there is anything you want to change, click on the change section then enter the correct data
- Then click save
- If there is something you want to delete, click on the delete section and the data will be deleted

d. Guest Registration Page

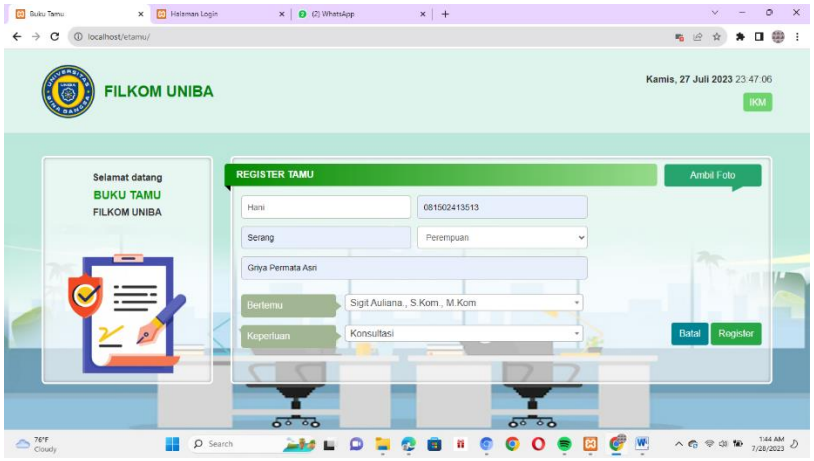

Figure 11. Registration Page Display

The display on this page is for inputting data on guests who wish to visit the computer science faculty with existing requirements by inputting name, telephone number, institution of origin, gender, address. Then fill in the form for lecturers who have needs, then choose what needs you want to address. The initial steps in the guest registration display are:

- Enter your name, telephone number, agency, gender and address.
- Then click register

e. Satisfaction Index

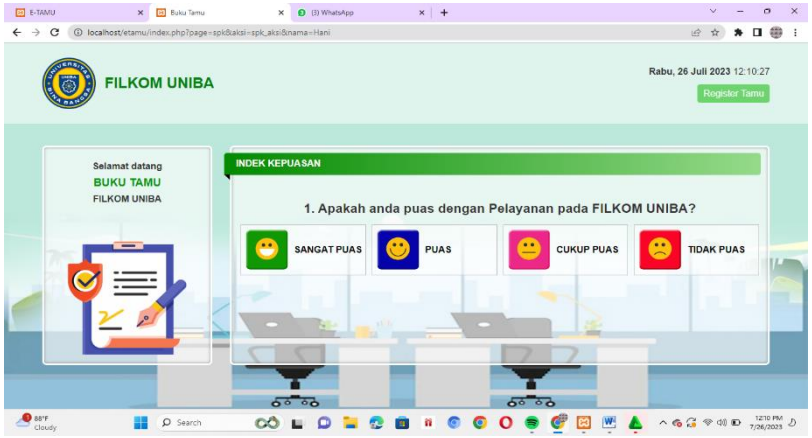

Figure 12. Satisfaction Index Page Display

The display on this page is for inputting data on guests who wish to visit the computer science faculty with existing requirements by inputting name, telephone number, institution of origin,

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gender, address. Then fill in the form for lecturers who have needs, then choose what needs you want to address. The initial steps in the guest registration display are:

- Enter your name, telephone number, agency, gender and address.
- Then click register

4.3. Black Box Testing

Black box testing is testing carried out to observe the input and output results of software without knowing the structure of the software program code, Black box testing is which the created, among other things, shown on Table 1.

Table 1. Blackbox Testing

No	Inputs	Outputs	Information
1	Login	Login Successful	Valid
2	Open the Home Menu	Successfully displays incoming guest data	Valid
3	Edit Master Data and Change Data	Data Edited Successfully	Valid
4	Edit Employee Data and try adding new employee data	The data was successfully added and successfully saved in the database	Valid
5	Delete the employee name in the employee data menu	Data deleted successfully	Valid
6	Edit the guest data and try to change the data to the correct one	Data edited successfully	Valid
7	Delete guest data in the guest data menu	Data deleted successfully	Valid
8	Edit the question in the question data menu	Data edited successfully	Valid
9	Delete questions in the question data menu	Data deleted successfully	Valid
10	Edit the requirements in the requirements data menu and try adding new requirements	The data has been successfully edited and added to the data base	Valid
11	Delete the requirements in the requirements data menu	Data deleted successfully	Valid
12	Edit admin data in the user data menu	Data edited successfully	Valid
13	Delete admin data in the user data menu	Data deleted successfully	Valid
14	Guests fill out registration	Data entered successfully	Valid

5. Conclusion

Based on the results of research in creating a Web-Based Guestbook Application at Bina Bangsa University, it can be concluded that the web-based guestbook website created can be delivered quickly and precisely, the design of creating a guestbook website can provide convenience for admins in collecting guest data and makes it easier to search for information on employee data and guest data. Likewise, visiting guests no longer need to fill in the guest book manually, and during documentation the admin can see data on guests who have visited. And it can be used as an archive for the future if needed.

The guest book itself can be a solution for guests because it makes it easier to fill in data. This can also make it easier for admins to carry out recording, collecting guest data from visitor data without having to input it manually which will waste time. With the application that I created, it will be easier because the data from visitors who come is already stored in the system.

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