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Reservation Information System Using Best-Fit Algorithm at Coworking Space Nutrihub Makassar

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Abstract

Coworking space, is a phenomenon that introduces a modern way of working with flexibility and collaboration. With the establishment of Nutrihub Makassar Coworking space by Nutrifood, there is an opportunity to build extensive partnerships in an organized work atmosphere. The problem faced by Nutrihub Makassar Coworking Space is the reservation system that still uses WhatsApp, which has limitations in presenting information. The reservation process requires the exchange of details such as date, time, number of guests, and special requirements. In chat format, this information is difficult to organize properly, less efficient can result in suboptimal scheduling, with the risk of disrupting the event or service. A careful approach is needed in managing reservations to overcome these challenges. This study uses a system design method that includes needs analysis, system design, and implementation. And illustrates that the implementation of a reservation system using the best fit algorithm in coworking space can have a positive impact, such as optimizing space utilization, increasing operational efficiency, and customer satisfaction. During the testing process, this system has been thoroughly tested using black box and System Usability Scale (SUS) testing. The results of the black box test show that this system runs well and is in accordance with user expectations. The results of the System Usability Scale (SUS) test showed a final result of 83.75 and obtained an Acceptability Range of "Acceptable". This shows that the usability or usefulness of the reservation information system at the Nutrihub Makassar coworking space is feasible to use and can be applied well to users.

Introduction

Nutrifood is a company engaged in the food and beverage sector that focuses on products that contribute to health and nutrition. Align with research from Wijaya & Amir (2022), through various products and events, Nutrifood inspires and helps every individual to achieve a balance in life by living a healthy, enjoyable lifestyle and paying attention to nutritional intake. Some of Nutrifood's quite popular products include NutriSari, Tropicana Slim, HiLo, L-Men, WRP (Weight Reduction Program), and many more. Nutrifood was founded in Indonesia in 1979 by Stephen Riady. Nutrifood's head office is in Jakarta, with a distribution network that reaches more than thirty countries in the world (Alfian & Pratama, 2022; Rozaq Rais & Saputra, 2020).

Nutrifood has built Nutrihub as a coworking and office space and has also become a place for many activities and collaborations from various parties (Chaniago et al., 2023). The Qur'an

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also contains the command to help each other in goodness. Cooperation in business is also part of helping each other. Mutual benefit and provide benefits to others.

In Surah Al-Maidah (5:2), and help each other, O believers, in doing good and piety to Allah SWT. And do not help each other in deeds that contain sin, disobedience, and violation of the limits of Allah SWT., and beware of violating the commands of Allah SWT., because verily He is very terrible in punishment.

This verse reflects important values that can guide interactions between the parties involved. In the context of business cooperation, which is interpreted as a shared obligation to work together on a project or business relationship with the principles of goodness, justice, and integrity (Goodstein & Wicks, 2007; Ip, 2009; Bernacchio et al., 2024;). Business cooperation built on virtue and piety creates a strong and sustainable foundation. Involvement based on moral and ethical values, such as honesty, fairness, and social responsibility, will help ensure that every action taken in business cooperation is for the common good (Mukhlas et al., 2021; Korohod, 2025; Hirsanudin & Martini, 2023).

On the other hand, the prohibition of helping each other in committing sins and violations underlines the importance of refraining from actions that can harm others or society in general. Cooperation that avoids ethical and legal violations will support the building of a good reputation, maintaining customer trust, and creating sustainable business relationships (Zakaria, 2025; Agu et al., 2024; Nicolaides, 2021; Esan et al., 2024; Mardikaningsih et al., 2024).

Researchers conclude that companies can achieve significant shared success by incorporating sustainability and ethical values into business collaboration practices. Workers who work based on these principles not only enhance the integrity of the company but also have a positive impact on society and the environment (Onyekwelu et al., 2024). In other words, ethical and sustainable business collaboration has the potential to generate shared value that is greater than monetary gain, which will ultimately lead to a more equitable and sustainable world.

Coworking spaces have now grown and mushroomed throughout the world, especially in Indonesia, and have now become a phenomenon that has changed the way people work in this modern era. Where the work environment offers flexibility for individuals or groups to work independently or collaboratively in one organized place (Oswald & Zhao, 2020; Sokolić, 2022; Sorn et al., 2023).

Coworking spaces, such as Nutrihub Makassar launched by Nutrifood, are equipped with facilities such as work desks, fast internet connections, meeting rooms, and relaxation areas. The main advantage is creating a dynamic community where individuals from various backgrounds or industries can interact, share ideas, and support each other. The success of this concept reflects a cultural shift in the world of work that emphasizes collaboration, creativity, and flexibility (Howell, 2022; Ivaldi et al., 2022).

Nutrihub Makassar as a Nutrifood office that provides coworking space as a place for collaboration that is open to the public, introduces Nutrifood products. There are several spaces including indoor, outdoor and studio. There are also various products from Nutrifood that can be enjoyed for free when visiting there. If you want to visit and use the coworking space at Nutrihub Makassar, we must make a reservation first.

Nutrihub Makassar is located at Jl. Lagaligo No.32, Mangkura, Ujung Pandang District, Makassar City, South Sulawesi, and is designed to encourage broad collaboration with Nutrifood. It is hoped that its presence will enable increased strategic collaboration by involving the government, educational institutions, communities, media, and journalists.

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Reservations, which are the activity of ordering right away, are a very important aspect, especially in the context of events, meetings, or services that require limited resource allocation such as meeting rooms. In event planning, the availability and capacity of the venue are the main considerations (Melly et al., 2023; Dowson et al., 2022; Bowdin et al., 2023). Through venue reservations, organizers can ensure that a location that suits the number of participants is guaranteed, avoiding potential constraints related to limited space. Efficient reservation management is crucial to ensure the availability of these resources and their optimal use, thereby avoiding schedule conflicts, confusion, or visitor dissatisfaction (Kivania et al., 2023; Suanpang & Jamjuntr, 2024).

The role of information technology is currently growing rapidly where the fulfillment of information needs is inseparable from the use and utilization of computerized systems (Purnomo et al., 2021; Meiryani et al., 2021; Tobing & Dukuy, 2025). Computerized systems can facilitate work so that it can be completed or managed faster. Information systems and the internet are now the most widely used choices in marketing and company development steps, this is because the internet has a wide reach that can be accessed by anyone, administration that is carried out quickly, precisely and accurately and easily accessible information is a necessity for every company in an effort to improve the performance and service of the company.

One of the applications that uses the internet is a website, with the media of the website communication and information can be presented quickly and accurately because in the business world the speed of updating or updating information is very necessary. One of them is like when making a reservation where in the modern era like now technology is increasingly sophisticated. With a website that can help us in doing various things such as reserving a place, customers can make reservations online.

Information systems are very important as are reservations. They must help us achieve goals and complete tasks. The collaborative workplace and Nutrihub Makassar office were built to work together and introduce Nutrifood products. Therefore, the design of a place reservation information system can help monitor every visitor who wants to do activities and work with Nutrifood, as well as see the facilities available.

Islam is a religion that is easy and in accordance with human nature. Always providing convenience, so that its teachings are easy to accept and understand. The priority of always providing convenience for others is also a principle for a Muslim. Islam never forces or even burdens its people to do anything. Al-Quran Surah Al-Baqarah (2:185), there is an important message about the will of Allah SWT, for ease and protection from difficulties. In terms of reservations, this principle can be considered as an encouragement to create an easy and effective customer experience. Efforts to create a reservation system that is responsive, easy to understand, and in accordance with the needs of individuals or groups can be considered as an implementation of the will of Allah SWT, to make life easier.

The principle of ease in reservations also means paying special attention to the welfare and comfort of users. Reservations that are designed with user needs in mind, provide clear information, and ensure an efficient reservation process can create an environment that meets the principle of Allah's will to provide ease and comfort.

However, the principle of difficulty shows how important it is to reduce obstacles and challenges in the reservation process. Systems that are directed at difficulties focus on transparency, clear information instructions, and quick response to changes. Therefore, the application of these values to reservations can be considered as a way to comply with the will of Allah SWT, who wants to avoid difficulties for His people.

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The researcher concluded that this verse describes the compassion and desire of Allah SWT, so that the lives of His people become easier. Allah SWT does not want difficulties or burdens for His people with religious regulations. On the contrary, Islamic teachings are designed to provide clear guidance and make every aspect of life easier.

There are several algorithms that can be considered in this study, including: time table algorithm, greedy algorithm, and best-fit algorithm where the time table algorithm itself is used to systematically arrange schedules by ensuring that there are no conflicts between time and allocated resources. In the context of room reservations, this algorithm collects all requests and then compiles a schedule by checking room availability and ensuring that no two reservations occur at the same time in the same room. This algorithm is very useful in environments where structure and order are very important, such as academic scheduling or facility management in large companies.

The greedy algorithm makes decisions by choosing the best option available at that time without considering the long-term impact, solving optimization problems, namely maximization or minimization (Pratiwi & Siambaton, 2022). In the context of room reservations, this algorithm immediately allocates available and suitable rooms for each incoming request, based on the order of arrival of the requests. Although simple and fast, this method does not always produce an optimal solution because it only considers short-term benefits, which can result in conflicts or inefficient use of space.

The best-fit algorithm allocates resources based on the best match between demand and availability, with the aim of minimizing unused space (Mulyavianis, 2022). In a room reservation system, this algorithm searches for the smallest room that is large enough to accommodate the request, thereby reducing space waste and increasing the efficiency of room use. This algorithm requires an exhaustive search to find the best match, providing more efficient results than other approaches.

From the explanation of the three methods, the best-fit algorithm is superior to other methods in terms of space use efficiency. By matching requests with the smallest room that is large enough, this algorithm ensures that larger spaces remain available for requests that require larger capacities, thus optimizing the use of all available resources. This makes best-fit more effective in situations where resources are limited and requests vary in size and time.

Choosing the best-fit algorithm for a reservation system is a wise choice because it focuses on efficiency and reducing resource waste. By maximizing room use and minimizing unused space, the best-fit algorithm ensures that each request is met with the most appropriate space allocation, reducing the likelihood of large spaces being empty while smaller spaces run out. In an environment where space availability is limited and requests come in various sizes and times. In addition, the best-fit algorithm adopts the method of placing data in a memory in a computer. In the system to be built, the spaces are likened to a memory while the person who wants to make a reservation is likened to the data to be stored.

The use of a reservation information system can help us find out the availability of places easily where in conditions where reservation requests can vary and are intense, this task becomes more complicated. Making reservations by checking directly and via WhatsApp which has limitations in presenting detailed information. The reservation process requires the exchange of details such as date, time, number of guests, and special requirements. In chat format, this information may be difficult to organize properly, less efficient can result in suboptimal scheduling, with the risk of disrupting the event or service. Therefore, a careful approach is needed in managing reservations to overcome these challenges. Based on the background that has been described above, the researcher is enthusiastic about raising the research title on "Reservation Information System Using the Best-Fit Algorithm at the Nutrihub Makassar Coworking Space" the researcher hopes that by raising the title it can be

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useful in optimizing the management of place reservations at Nutrihub Makassar, can manage the availability of places using the best-fit algorithm.

Methods

A qualitative approach is used in this study to study the perspectives, experiences, and preferences of users regarding the creation and operation of a reservation system at Nutrihub Makassar. It is expected that this study will produce a better understanding of what users need and want, as well as relevant suggestions for developing a better reservation system. The location of this study was conducted at PT. Nutrifood, precisely at the Nutrihub Makassar office located at Jl. Lagaligo No.32, Mangkura, Ujung Pandang District, Makassar City, South Sulawesi. This study uses a science and technology approach as a scientific research method. Understanding and creating a reservation system is the purpose of this study. During the process of designing, implementing, and analyzing the reservation system, the research will be carried out systematically and objectively. To gain a better understanding of user opinions on the use of the reservation system, data collection will involve interviews, observations, and analysis.

Furthermore, to produce appropriate conclusions and suggestions, qualitative analysis will be used. It is expected that this study will provide a significant contribution to the development of the Nutrihub Makassar reservation system using scientific research methods and a science and technology approach. The data for this study were collected through three main methods, namely primary data, secondary data, and library research. Primary data were obtained through direct observation at Nutrihub Makassar and interviews with related parties, especially Fernaldy Manuel as Nutrihub's Public Relations. The results of the interviews provided important information regarding room facilities (outdoor, indoor, and studio room), operating hours, the reservation system which is still done manually via WhatsApp, and obstacles such as inaccurate recording and the risk of double booking. Observations were also made on the direct reservation process at the location, which showed that reservations were often continued with communication via chat after visitors arrived. Meanwhile, secondary data were obtained from Nutrihub's internal documentation, such as order records and marketing media. Library research was conducted to enrich the theoretical basis through a review of journals, theses, books, and digital references related to information systems and ordering algorithms.

The research instruments used include hardware and software. The hardware in the form of an Asus Vivobook laptop with AMD Ryzen 7 5800H specifications, 16 GB RAM, and the Windows 11 operating system was used to design and test the system. The software used includes Visual Studio Code for application development, XAMPP to run a local server, MySQL for database management, and Google Chrome as a user interface testing browser. The combination of data collection methods and supporting devices is expected to produce an effective reservation system that is in accordance with Nutrihub Makassar's operational needs.

Data Analysis Techniques

In this study, the data collection method used is qualitative, which involves direct observation of the processes and problems that occur in the research area. Observations are carried out carefully and in detail to gain a deeper understanding of the context and dynamics that exist. In addition, direct interviews are also conducted with parties involved in the environment being studied, such as staff or managers, and other related parties. Interviews are conducted using a previously prepared question guide to ensure that the interview process is focused and relevant. After the data is collected, careful and planned data processing is carried out. The data processing process includes three stages in processing data, namely data reduction, data presentation, and conclusions or data verification to make it more structured and easy to understand.

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Results and Discussion

Analysis of the Running System

Currently, the reservation system is done manually via the WhatsApp application, users must send a message to the manager and wait for a response regarding the availability of the place and schedule. This process is often slow because it depends on the manager's ability to read messages and verify manually. In the place reservation process, the following can be seen in Figure 1 The current system flow is as follows:

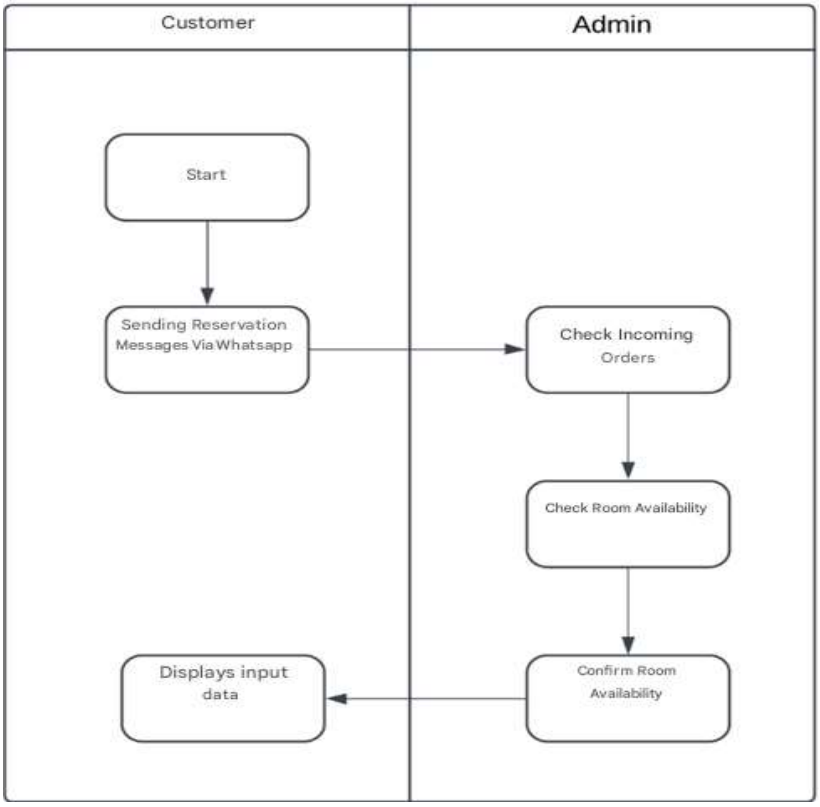

Figure 1. Current System Flow

Figure 1 The current system flow can be seen that prospective visitors start sending reservation messages via WhatsApp, then the admin checks incoming messages and checks room availability after that coordinates room availability to prospective visitors. This current system looks simple, but has several weaknesses such as late response in checking room availability.

Proposed System Analysis

The system analysis process involves dismantling the entire system into its components to find and assess existing problems. At this stage, the need for application creation is defined. A general explanation of the analysis stage along with the proposed system flow diagram can be seen in Figure 2 The proposed system flow is as follows:

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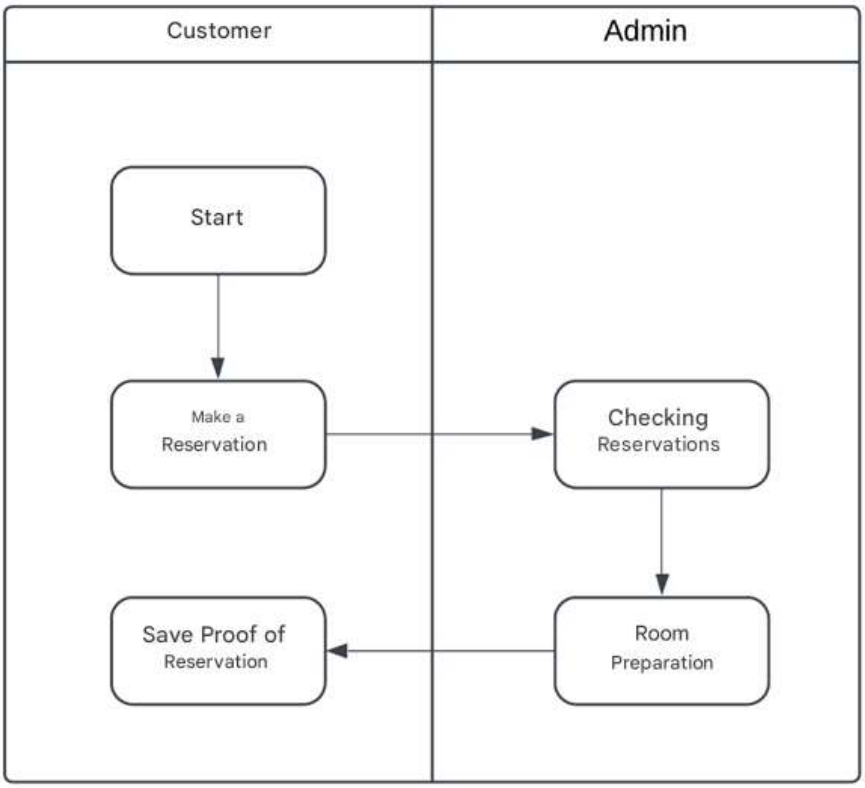

Figure 2. Proposed System Flow

Figure 2 The system flow offered provides a solution to the current system flow where there is no process of waiting for a response when making a reservation, prospective visitors start opening the website to make a reservation and then check the reservation that has been made.

System Design

In the system design process, the steps outlined reflect the stages required to design a system in a logical and structured manner. This includes collecting the data needed to support the design of the implementation of the system. Furthermore, data analysis is carried out as a stage to determine the limitations of the existing system. After that, the system design stage can begin.

Flow chart

Visual representation of the flow of steps and decision making required in running a process in a system. The system flow diagram designed based on the analysis that has been done can be seen in the following proposed Entity Relationship admin figure 3:

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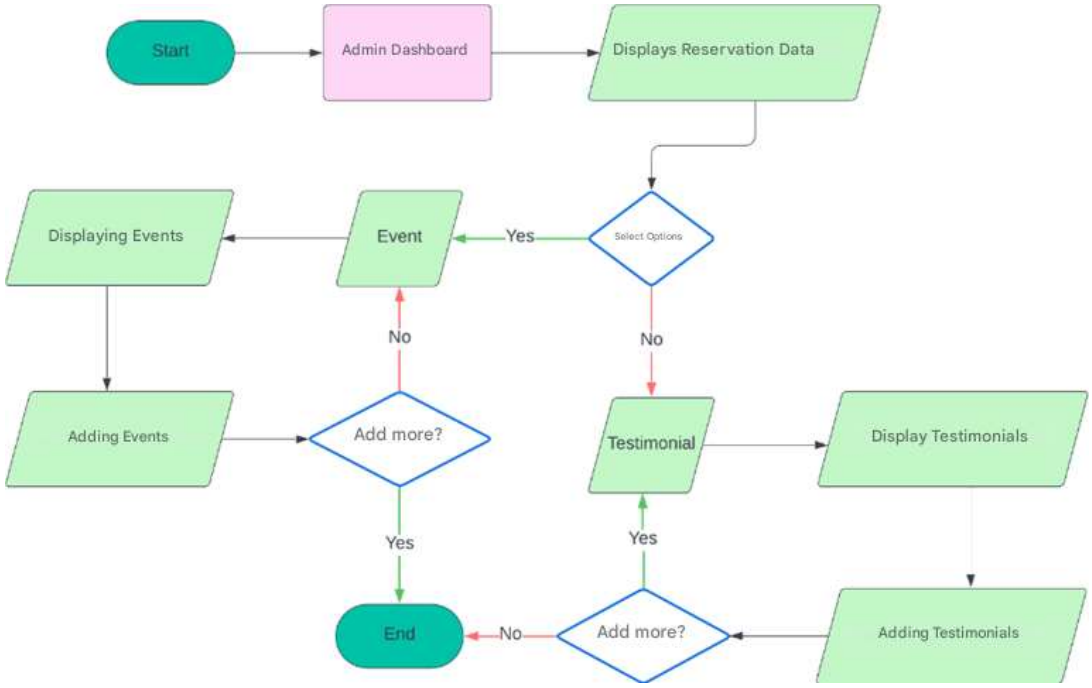

Figure 3. Proposed Admin Flowchart

The proposed admin flowchart can be seen in Figure 3 where the Start admin dashboard will display reservation data then there are event and testimonial options that can be added directly by the admin. Flowchart or flow of decision steps needed to run a process in a system. The system flow diagram that is compiled not only on the admin flow but also for customers based on the analysis results can be seen in Figure 4 below, which shows the proposed customer flowchart.

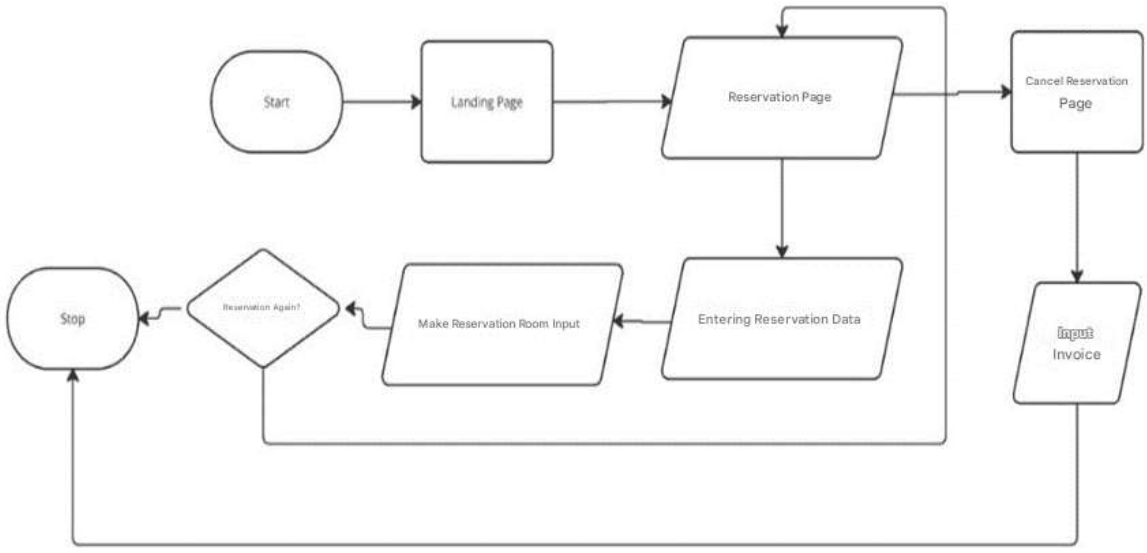

Figure 4. Proposed Customer Flowchart

The customer flowchart in Figure 4 where the customer can start from the initial landing page display then select the reservation page, input reservation data and display the selected reservation room and the place that has been filled, the customer can also cancel the reservation.

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Use Case Diagram

Visual representation of the interaction between the application system and the user, depicting how the system will be used by the user. This diagram is effective in communicating system behavior to the user, exposing the activities that occur in the software to the user actor. Based on the results of the analysis conducted by the author on the Use Case Diagram, a system will be created as seen in Figure 5 Use case diagram as follows:

Figure. 5 Use Case Diagram

Use case diagram 5 is a description of website usage by admin and customer where customer can only see room data and make reservations while admin can see reservation data, see and add event information and testimonials.

Activity Diagram

Functions to describe the activities or activities of a process contained in the operational workflow, showing the sequence of activities of the system components. Based on the results of the analysis, the author will design the Activity Diagram system according to the sequence of existing activities. Can be seen in Figure 6 Representation of the Activity Diagram System below:

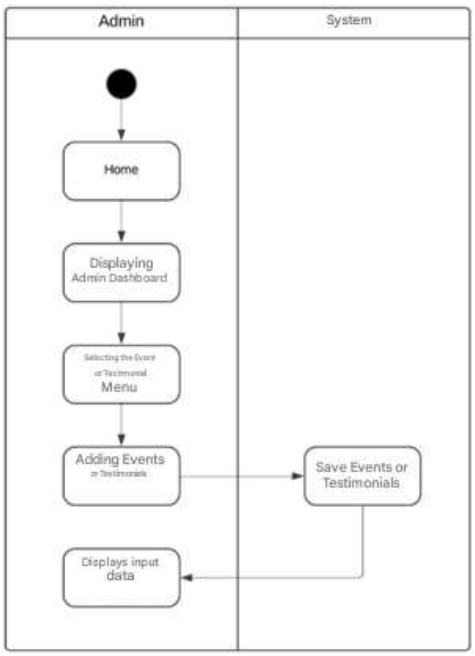

Figure 6. Activity Diagram Admin

The representation of the admin activity diagram in Figure 6 explains the flow of the admin system working on the home menu displays the admin dashboard selects the event and testimonial menu and adds the event to be created as well as the testimonial then the system

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saves the data on the dashboard. The representation of the customer activity diagram can be seen in Figure 7 below:

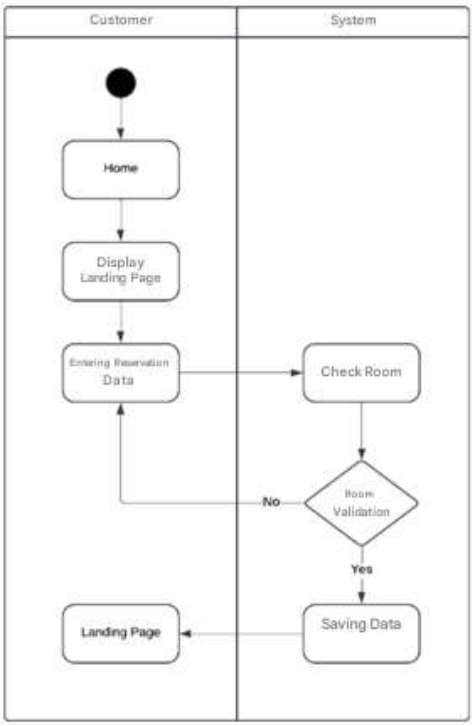

Figure 7. Activity Diagram costumer

The customer activity diagram representation in Figure 7 explains the flow of the customer work system on the home menu, which displays the landing page starting from inputting reservation data, then the system works by checking the room and validating the room and saving the reservation data.

Class Diagram

Class diagram is a visual representation of the system structure and the variety of entities needed in creating the system. Based on the analysis that has been done by the author on the system to be developed, the following is the class diagram that will be compiled.

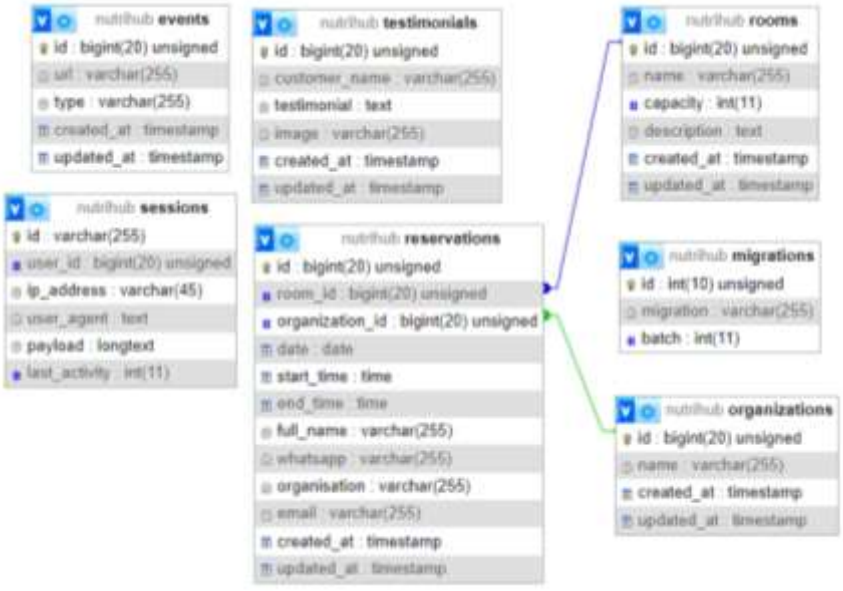

Figure 8. Class Diagram

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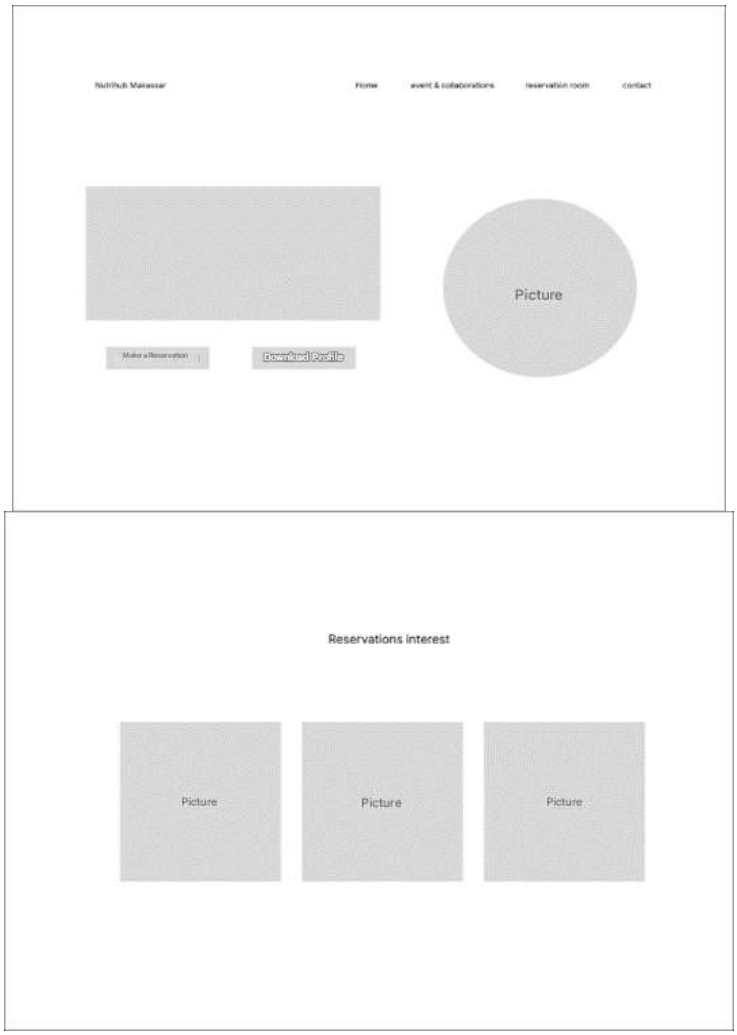
Figure 8 explains the class diagram which shows the data types used, starting from data types such as int, varchar, to text.

Interface Design

Interface design is an important aspect in application development, as it determines how information is displayed and how users interact with the application. Here is the interface design created for this system:

Home Interface Design

The design of the user home *section can be seen in Figure 9 below:*



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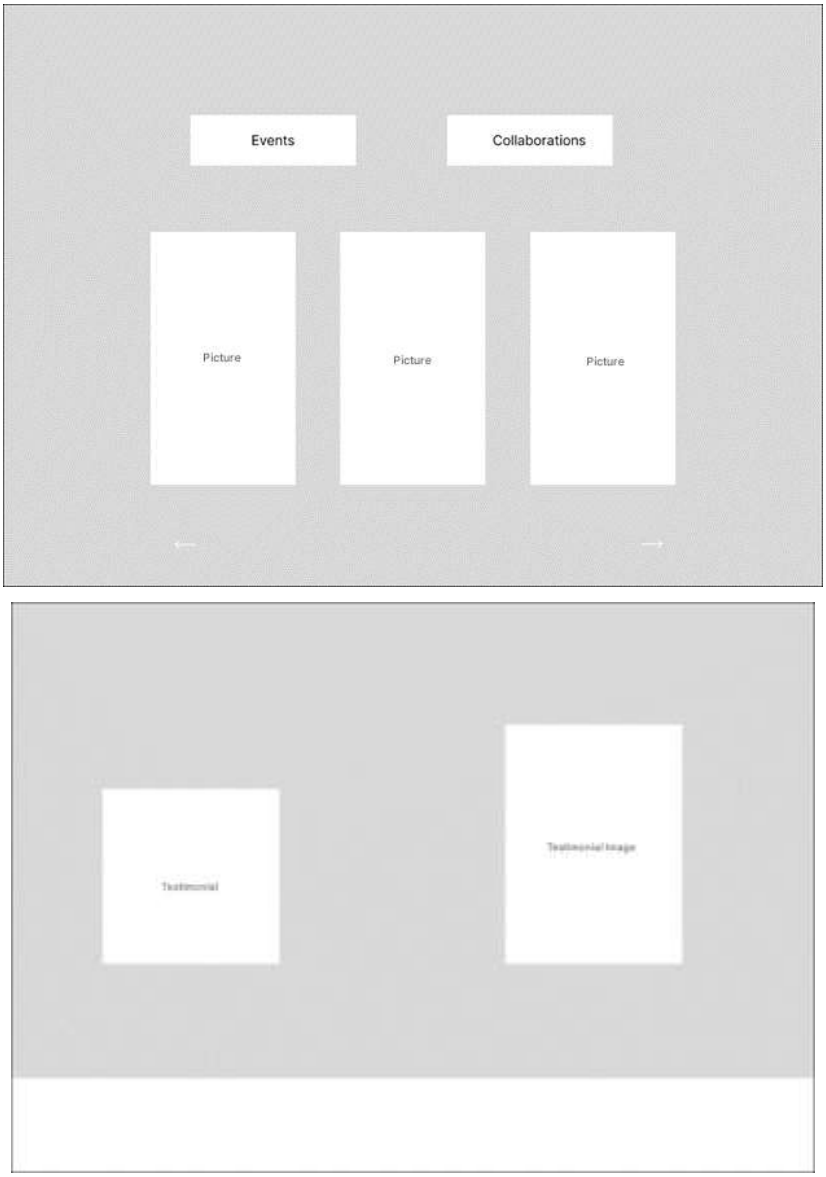

Figure 9. Home View

The design of the home display design in Figure 9 will later be able to display some information including events or collaborations that will or are being implemented as well as the company profile.

Design of Place Reservation Interface

The design of the place reservation interface below contains some data that will later be inputted such as time, date, number of guests or visitors who will use the place and contact information that can later be contacted.

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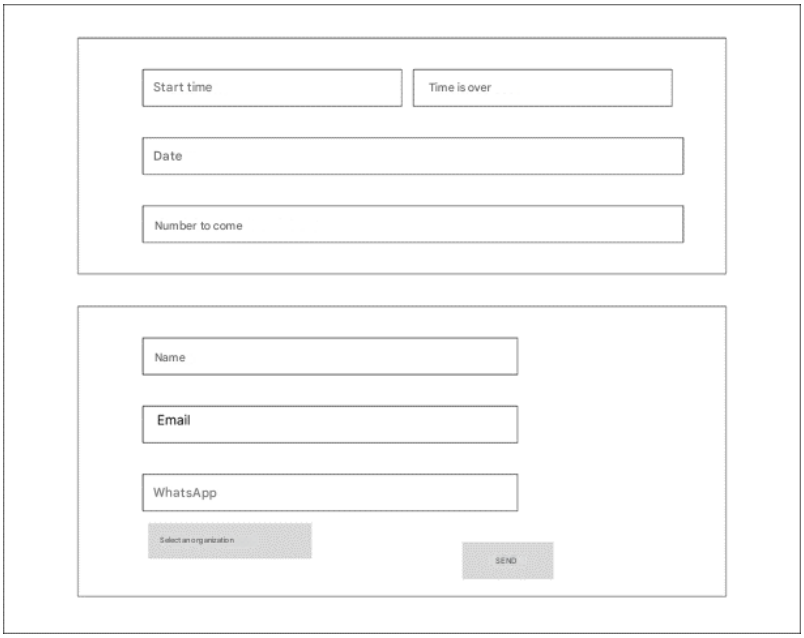

Figure 10. Place Reservation View

Designing the Interest Reservation Interface

Reservation interest is a menu that will display the calendar and dates that have been filled or not filled that can be seen by customers who will make a reservation. The design of the reservation interest interface can be seen in Figure 11 below:

Figure 11. Reservation interest display

Admin Dashboard Interface Design

The admin dashboard is designed to display a list of customers who have made reservations so that managers can see a summary of the data of people who have made reservations. The design of the admin dashboard interface can be seen in Figure 12 below:

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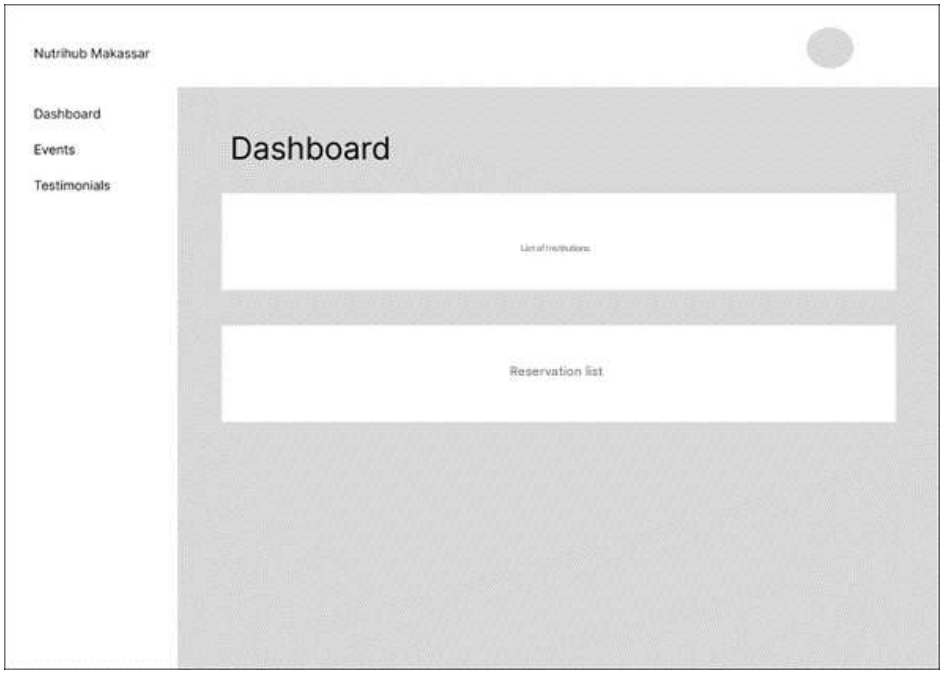

Figure 12. Admin Dashboard View

Event & Collaborations Management Interface Design

In the design of the admin section, there are also events where in this design the manager will be able to add events that will be implemented or are being implemented.

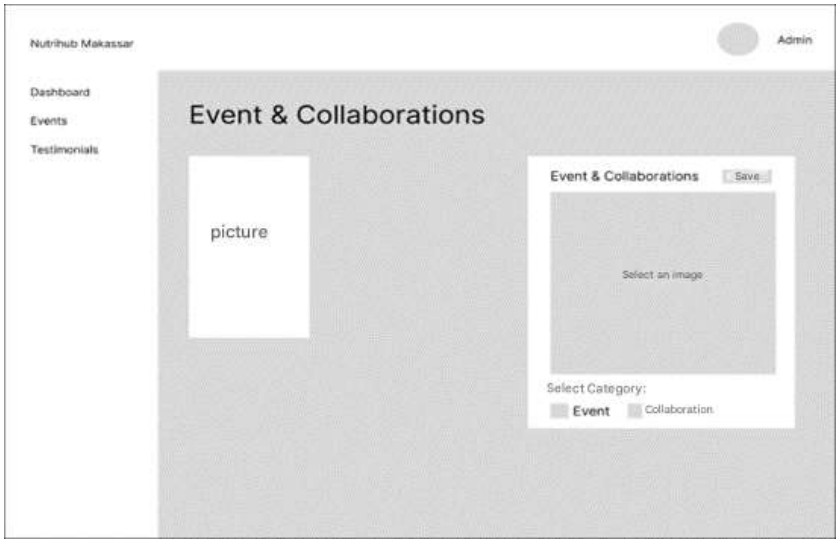

Figure 13. Manage Events & Collaborations view

Testimonials Interface Design

In the admin design there are also testimonials that can be processed by the manager. The design of the testimonial can be seen in Figure 14 below:

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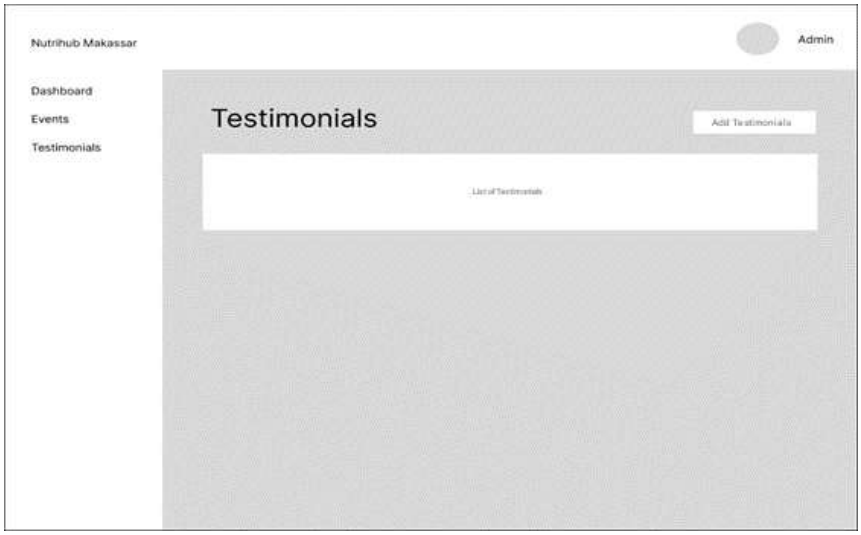

Figure 14. Testimonials view

Reservation Cancellation Design

In the design of reservation cancellation, customers who wish to cancel can do so directly by entering the invoice number they received when making the reservation.

Figure 15. Reservation Cancellation

Perancangan Technology Stack

Technology Stack is a collection of technologies used to build an application. This is similar to planning and organizing information technology infrastructure, but in the context of application development. Technology Stack consists of various components, such as programming languages, frameworks, databases, and other tools needed to develop applications. The Technology Stack design for this system can be seen in Figure 16 Technology Stack Below:

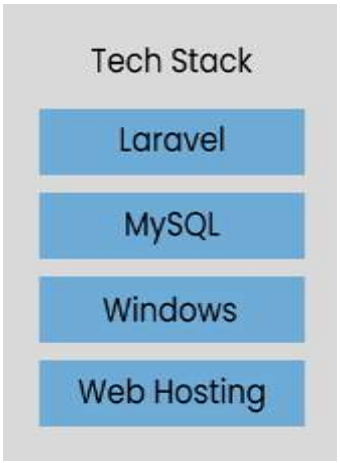

Figure 16. Technology Stack

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Integration of Knowledge

The use of technology in the reservation system at Nutrihub must also be based on the values of transparency and honesty taught in the Qur'an. A transparent system will provide clear and accurate information to users about space availability, costs, and other policies, thus creating trust and comfort. These values are important to ensure that all users are treated fairly and that no one is given special treatment, in accordance with the principles of justice in Islam. The development of technology, especially in the reservation information system using the Best-Fit algorithm at the Nutrihub Makassar Coworking Space, creates a synergy between spiritual values and modern innovation.

In the interpretation of al-Misbah by Muhammad Quraish Shihab, it is interpreted in QS. Ar-Rahman (55:33) explains, until now it has been proven how difficult it is and requires great effort. The success of space travel experiments during a very small and limited time when compared to the vastness of the universe alone requires extraordinary efforts compared to scientists with all their branches: engineering, mathematics, art, geology, and so on. This proves that the effort to penetrate the sky and earth which is millions of light years away is impossible for jinn and humans (Shihab, 2020)

In QS Ar-Rahman "challenges the jinn and humans to penetrate the corners of the sky and earth, but they will not be able to do it except with the power given by Allah." This verse describes the limitations of creatures in facing the power of Allah Almighty. This reminds us that every technological and scientific achievement that we achieve is thanks to the permission and power of Allah. The ability to overcome these natural boundaries, both in space exploration and in the development of advanced technology on earth, is evidence of His greatness and power.

Technological advances, such as the development of the Reservation Information System using the Best-Fit Algorithm at the Nutrihub Makassar Coworking Space, show how humans utilize the knowledge and technology given by Allah to solve everyday problems. The Best-Fit algorithm used in this system helps optimize the use of shared workspaces, creating efficiency and comfort for users. This technology enables better resource management and supports more effective collaboration among individuals and teams working at Nutrihub Makassar.

The development of this information system is not just a technical achievement, but also a reflection of the utilization of the potential that Allah has given to humans. By applying this technology, we show that humans, with the permission of Allah SWT, are able to create innovative solutions to modern challenges. However, we must also always remember that every step of this progress is the result of the power and ability given by Allah SWT, and we have a responsibility to use this knowledge and technology wisely, for the common good and the welfare of humanity.

Discussion

System Implementation

Implementation is the stage where the design resulting from the analysis is converted into a programming language that can be understood by the machine, and then applied to real situations.

Home

In the implementation of the previously designed reservation home website, it can be seen in the following Home figure 17:

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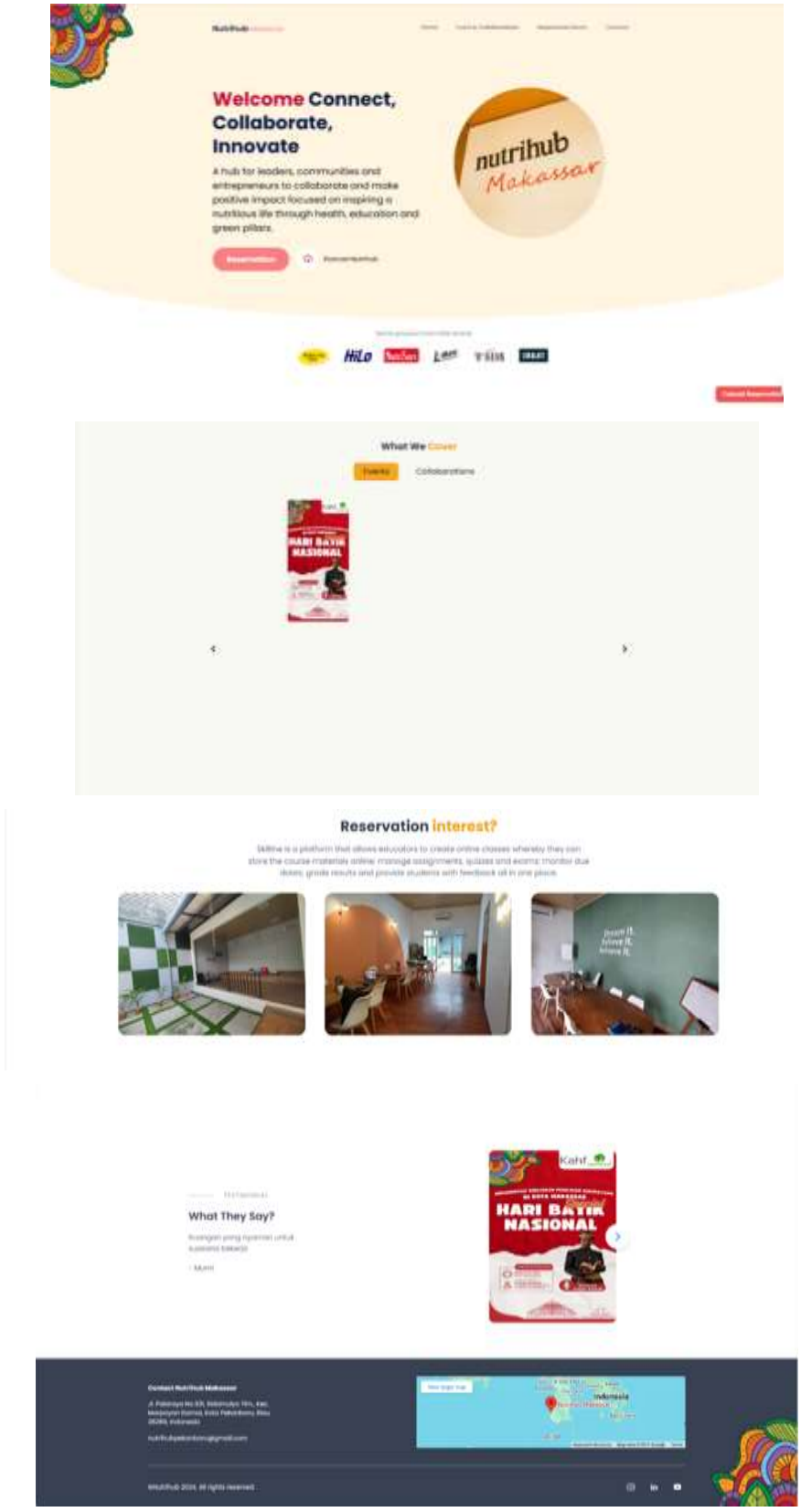

Figure 17. Home

Figure 17 implementation of the home page contains several parts including the initial appearance of the website and a menu that can be clicked to make a reservation.

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Reservasi

The reservation menu is the main one on this website where in its implementation visitors or customers can make reservations easily as we can see in the following reservation figure 18:

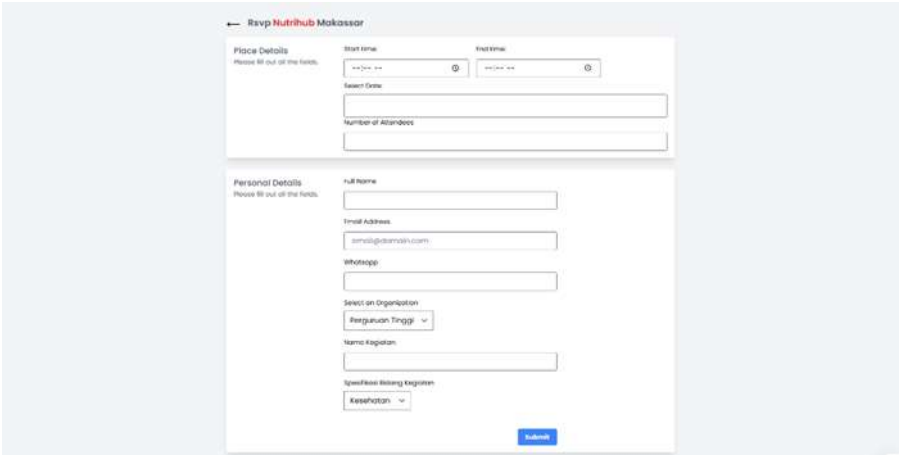

Figure 18. Reservasi

Implementation of reservation figure 18 reservation can be seen that customers can make reservations by inputting several data such as time, date, number of guests or visitors who will use the place and contact information that can be contacted later.

Reservation Interest

In implementing the reservation interest, visitors or customers can see the date and check the dates that have been filled or not filled as in the following reservation figure 19:

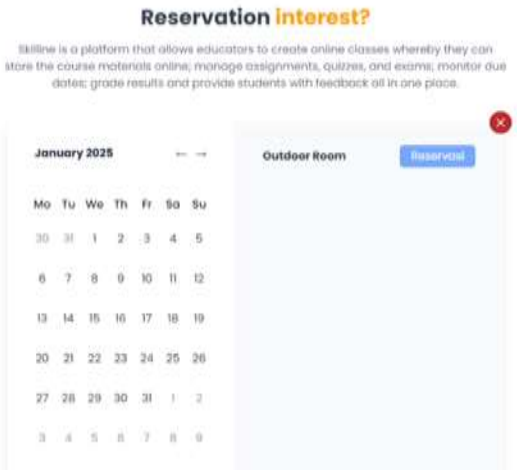

Figure 19. Reservation Interest

Dashboard Admin

The implementation of the admin dashboard displays data that has made a reservation. The admin dashboard can be seen in the following figure 20:

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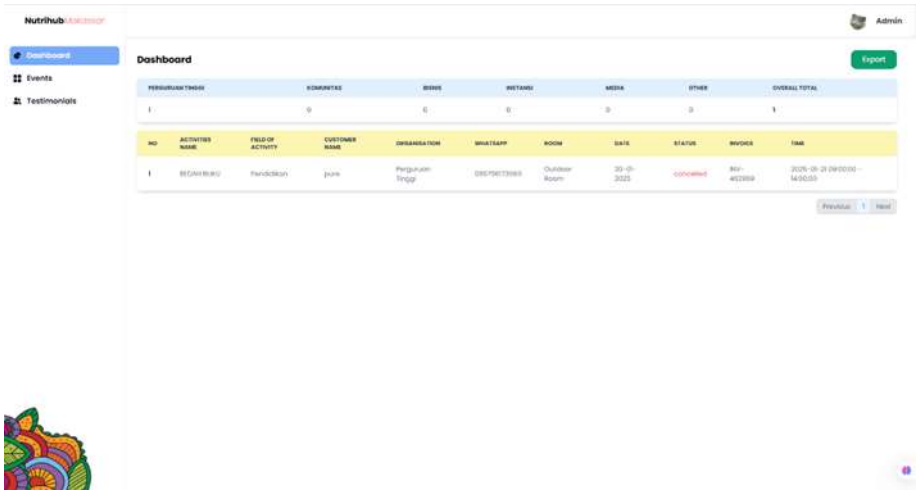

Figure 20. Dashboard Admin

Manage Events & Collaborations

In the implementation of the Admin event menu here, the manager can add events or collaborations that are being carried out, as in Figure 21 below:

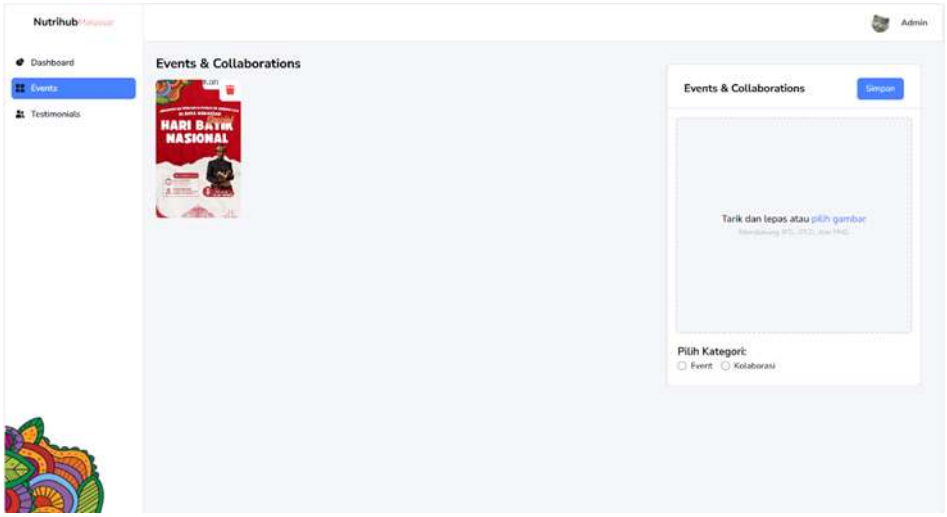

Figure 21. Manage Collaborations

Manage Testimonials

Testimonial menu managed by admin adds testimonials from visitors as shown in figure 21 manage testimonials below:

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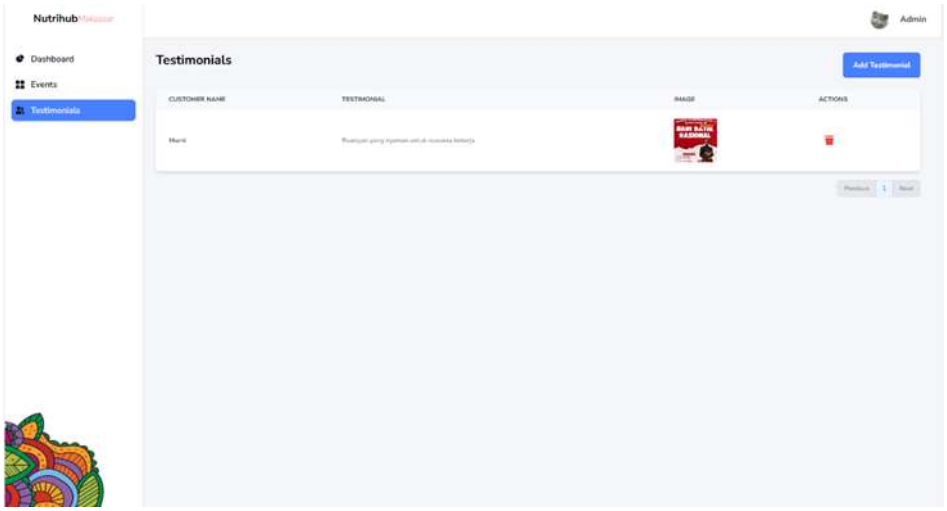

System Testing

An important step in verifying and validating software is the system testing process. This process aims to ensure that the software meets all requirements, is free from bugs, and works well in the planned environmsent.

Functional Testing

This testing phase is done to check all application processes to find errors. Blackbox testing is used to test the system. The results include the following components:

Home Testing

Table 1. Home

Cases and Test Results		
Input Data	**Expected**	**Status**
Open the home menu	Can display a menu consisting of Coworking Space data and info	[√]Success [ ] Failed

Reservation Testing

Table 2. Reservations

Cases and Test Results		
Input Data	**Which are expected**	**Status**
Select the Reservation menu	Can display the Reservation form consisting of Place details, namely: star time, end time, select data, number and attendees. And personal details, namely: full name, email address, whatsapp, select ab organization	[√]Success [ ] Failed

Reservation Interest Testing

Table 3. Reservation Interest

Cases and Test Results

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Input Data	Which are expected	Status
Select Reservation interest	Can display calendar and filled date	[√] Success [ ] Failed

Admin Testing

Table 4. Admin

Cases and Test Results		
Input Data	**Expected**	**Status**
Selecting the Dashboard menu	Can display the number of reservation data and organization	[√] Success [ ] Failed
Selecting the events menu	Can add events and collaborations	[√] Success [ ] Failed
Selecting the Testimonials menu	Can add and delete testimonials	[√] Success [ ] Failed

Reservation Cancellation Testing

Table 5. Reservation Cancellation

Cases and Test Results		
Input Data	**Expected**	**Status**
Select reservation cancellation	Can display reservation cancellations	[√] Success [ ] Failed

After conducting black box testing, we can conclude that this system has run well according to what has been designed in advance.

System usability scale (SUS) testing

System usability scale (SUS) testing is conducted to determine the level of user satisfaction or user experience with the system that has been built. The results of this test are shown below, which were collected through a questionnaire. There were 30 respondents.

Table 6. SUS Statement Instrument

No.	Statement	Score
1	Do you feel comfortable using this reservation system to book a place?	1–5
2	I find this reservation system difficult to use.	1–5
3	I find this reservation system easy to understand and use.	1–5
4	I need help from others or a technician to complete a reservation using this system.	1–5
5	The features in this reservation system work well and meet expectations.	1–5
6	I find some aspects of this reservation system inconsistent or confusing.	1–5
7	I believe others will quickly understand how to use this reservation system.	1–5
8	This reservation system confuses me in some parts.	1–5
9	I did not encounter any obstacles or difficulties while using this reservation system.	1–5
10	I had to learn a lot before I could use this reservation system properly.	1–5

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Table 7. Score Assessment Scale

Answer	Score
Strongly disagree (STS)	1
Disagree (TS)	2
Undecided (RG)	3
Agree (S)	4
Strongly agree (SS)	5

The score assessment scale is shown in Table 6. The score is obtained by stages by converting respondents' responses: (1) Odd statements, namely: 1, 3, 5, 7 and 9 scores given by respondents are reduced by 1. Odd SUS score = ∑ Px -1 Where Px is the number of odd questions Even statements, namely 2,4,6,8, and 10 scores given by respondents are used to reduce 5. Even SUS score = ∑ 5-Pn Where Pn is the number of even questions; (2) The conversion results are then added up for each respondent and then multiplied by 2.5 to get a value range of 0 -100. (∑ odd score -∑ even score) x 2.5; (3) After the score of each respondent has been known, the next step is to find the average score by adding up all the score results and dividing by the number of respondents. From these results, the average value of the overall assessment of the respondent's score is obtained. To determine the results of the assessment grade, the method used is to look at it from the perspective of the level of user acceptance, the scale grade and the rating adjectives which consist of the level of user acceptance, there are three categories, namely not acceptable, marginal and acceptable.

Table 8. Acceptability Range

Score SUS	Meaning of Score
0-50,9	Not acceptable
51-70,9	Marginal
71-100	Acceptable

Table 9. System Usability Scale (SUS) Questionnaire Data

Respondents	Question									
	1	2	3	4	5	6	7	8	9	10
1	5	5	5	4	4	3	4	4	4	4
2	5	3	5	3	5	2	5	4	5	4
3	5	2	5	1	5	1	5	1	5	1
4	5	4	5	3	5	4	5	3	5	3
5	5	2	5	2	5	2	5	1	4	1
6	5	1	5	1	4	1	5	1	4	2
7	5	1	5	1	5	1	5	1	5	1
8	4	4	5	4	5	4	5	1	5	3
9	5	2	4	2	5	2	4	1	5	1
10	5	1	5	1	4	2	5	1	5	2
11	5	1	5	1	5	1	5	1	5	1
12	5	3	4	2	5	3	5	3	5	4
13	5	1	5	1	4	1	4	2	5	1
14	5	2	4	2	5	1	4	1	5	2
15	5	1	5	1	5	1	5	1	5	1
16	4	2	4	2	5	1	4	2	4	2
17	5	2	4	2	5	2	4	2	5	3
18	5	1	5	2	4	1	5	2	5	1
19	4	2	4	1	4	2	4	1	5	2

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20	5	1	5	1	4	1	5	1	4	1
21	5	2	5	2	5	1	5	1	5	2
22	5	2	4	2	4	3	5	2	4	1
23	5	1	5	1	5	1	5	1	5	1
24	5	2	5	1	5	1	5	2	5	3
25	4	2	4	2	5	2	5	2	4	1
26	5	3	4	3	4	2	4	3	4	4
27	5	1	5	1	4	1	5	1	5	1
28	4	1	5	1	4	2	4	1	4	1
29	1	4	2	5	3	4	4	5	1	5
30	4	1	4	1	5	2	4	1	5	1

Table 10. SUS Calculation Result Data

Respondents	**Question**										**amount**	**mark**
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**		
1	4	0	4	1	3	2	3	1	3	1	22	55
2	4	2	4	2	4	3	4	1	4	1	29	72,5
3	4	3	4	4	4	4	4	4	4	4	39	97,5
4	4	1	4	2	4	1	3	2	4	2	27	67,5
5	4	3	4	3	4	3	4	4	3	4	36	90
6	4	4	4	4	3	4	4	4	3	3	37	92,5
7	4	4	4	4	4	4	4	4	4	4	40	100
8	3	1	4	1	4	1	4	4	4	2	28	70
9	4	3	3	3	4	3	3	4	4	4	35	87,5
10	4	4	4	4	3	3	3	4	4	3	36	90
11	4	4	4	4	4	4	4	4	4	4	40	100
12	4	2	3	3	4	2	4	2	4	1	29	72,5
13	4	4	4	4	3	4	3	3	4	4	37	92,5
14	4	3	3	3	4	4	3	1	4	3	35	87,5
15	4	4	4	4	4	4	4	1	4	4	40	100
16	3	3	3	3	4	4	3	4	3	3	32	80
17	4	3	3	3	4	3	3	2	4	2	32	80
18	4	4	4	3	3	4	4	4	4	4	37	92,5
19	3	3	3	4	3	3	3	4	4	3	33	82,5
20	4	4	4	4	3	4	4	4	3	4	38	95
21	4	3	4	3	4	4	4	4	4	3	37	92,5
22	4	3	3	3	3	2	4	3	3	4	32	80
23	4	4	4	4	4	4	4	4	4	4	40	100
24	4	3	4	4	4	4	4	3	4	2	36	90
25	3	3	3	3	4	3	4	3	3	4	33	82,5
26	4	2	3	2	3	3	3	2	3	1	26	65
27	4	4	4	4	3	4	4	4	4	4	39	97,5
28	3	4	4	4	3	3	3	4	3	4	35	87,5
29	0	1	1	1	2	1	3	0	0	0	9	22,5
30	3	4	3	4	4	3	3	4	4	4	36	90
Total SUS score												**2512,5**

Formula $= \overline{x} = \frac{\sum x}{n}$

$\overline{x}$ = Average score

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$\sum$ = Total SUS score

n = Number of respondents

$\overline{x} = \frac{\sum x}{n}$ = 2512,5 = 83,75

3 30

The results of the System Usability Scale (SUS) test showed a final result of 83.75 and obtained an Acceptability Range of "Acceptable". This shows that the usability or usefulness of the reservation information system at the Nutrihub Makassar coworking space is feasible to use and can be applied well to users.

Conclusion

"Reservation Information System Using Best-Fit Algorithm at Nutrihub Makassar Coworking Space" shows that the development of this system has succeeded in creating an efficient and user-friendly solution for the reservation process. Through user needs analysis and usability testing, this system is designed by considering ease of use, accessibility, and integration of relevant features. The results of the black box test show that this system runs well and is in accordance with user expectations. The results of the System Usability Scale (SUS) test show a final result of 83.75 and get an Acceptability Range of "Acceptable". This shows that the usability or usefulness of the reservation information system at the Nutrihub Makassar coworking space is feasible to use and can be applied well to users and shows that users can make reservations quickly and without obstacles, which in turn increases customer satisfaction. This study also emphasizes the importance of user feedback in the development process to ensure that the system can adapt to evolving needs. Overall, this reservation system not only provides practical benefits for users, but also has the potential to improve operational efficiency for reservation service providers.

Suggestion

Develop and add features that can improve the user experience, such as reminder notifications, or the option to easily change and cancel reservations. Developing the application into a mobile version allows easier and more flexible access for users who use mobile devices, such as smartphones and tablets. Provide customer support features directly in the application, such as chat or online help, so that users can easily get help if they have problems with reservations.

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