Mantik Journal, 7 (4) (2024), ISSN 2685-4236 (Online)

Published by:Institute of Computer Science (IOCS)

Jurnal Mantik

Journal homepage: www.iocscience.org/ejournal/index.php/mantik

Website-based food ordering information system for UMKM

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A R T I C L E I N F O

Article history:

Received Dec 29, 2023
Revised Jan 08, 2024
Accepted Jan 24, 2024

Keywords:

Information System;
Msme;
Uml;
Waterfall;
Website.

ABSTRACT

This research aims to help MSMEs or Micro, Small and Medium Enterprises implement their business into digital, the author will examine GISAGIS.ID MSMEs with the topic "Designing a Website-Based Food Ordering Information System for MSMEs (GISAGIS.ID Case Study)". The research method applied in this research is the Waterfall method or commonly referred to as the SDLC or System Development Life Cycles approach. system development methods system analysis and feasibility testing. using needs analysis with several techniques, namely observation, interviews and literature studies in order to find out the details of the system needed. Results of System Needs Assessment This stage is the result of analyzing the needs used to create a food ordering information system website at Gisagis UMKM. The next process is to create a website-based information system that uses UML or Unified Modeling Languange such as use case diagrams, activity diagrams and class diagrams. The results of the research that the authors conducted showed a change in the purchasing process because they experienced success in making applications for UMKM GISAGIS.ID to be more effective and efficient in the sales and purchasing process because of the supporting applications. So that this system does not stop to develop. In supporting a wider market, developing this food ordering information system on a mobile basis, both android and ios to be simpler in ordering food and can also be developed into a B2B digital business, for example such as a franchise.

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1. INTRODUCTION

MSMEs, which stands for Micro, Small and Medium Enterprises, play a crucial role in the Indonesian economy as a contributor to Gross Domestic Product (Lestari & Amri, 2020; Rahardja et al., 2018). Data from the Ministry of Cooperatives and Small and Medium Enterprises in March 2021 shows that there are 64.2 million MSMEs in Indonesia, contributing 61.07 percent to the Gross Domestic Product (GDP) or around

IDR 8,573.89 trillion. With this significant contribution, MSMEs are an important pillar for future economic growth (Sumarna, 2019; Permana & Romadlon, 2019).

Along with the rapid development of technology in Indonesia, there is a transition to the digital era that affects various aspects of human life, including in business activities (Heriyanto, 2018; Pratama, n.d.; Rizaldi & Syah, 2019). Information technology (IT) integration is key to improving the competitiveness of MSMEs (Yanuardi & Permana, 2019; Hutahaean & Azhar, 2018; Abdullah & Erliana, 2016; Handika, 2018). Therefore, integrating IT into MSMEs is a strategic step to support economic growth. However, in practice, not all MSMEs can easily adopt this technology. For example, MSME GISAGIS.ID has just tried to apply digitalization to its business by utilizing digital promotional media. The habit of face-to-face transactions that has become a common culture in society is also an obstacle, because the adoption of new mindsets and behaviors in digital business takes time to be widely implemented (Carey, 2001; Kadylak et al., 2018; Robert et al., 2009; Madan et al., 2010; Kuonanoja et al., 2015). Budget limitations are also a serious constraint, especially for small and medium-sized enterprises that may find it difficult to allocate resources for technology investment (Trepte et al., 2018; Carlo & Yoo, 2007; Desai & Graves, 2008; Nardi & Whittaker, 2002; Alhudaithy, n.d.).

To overcome these obstacles, researchers aim to introduce the concept of IT more broadly to MSMEs, especially through the use of website-based information systems. In this context, the research focused on the design of a website-based food ordering information system for GISAGIS.ID MSMEs as a case study. The main problem formulation is "How to create a website-based information system for GISAGIS.ID MSMEs with the Laravel Framework and MySQL database?". The application of this website-based information system is expected to have a positive impact, such as making it easier for prospective buyers to see the menu and place orders without the need to meet face to face. Information systems, as an organization of computer-based activities, are expected to support the operation and management of MSMEs more efficiently (Marimin et al., 2016; Seah & Ridho, 2020; Arizona, 2017; Prayitno, 2015). The main objective of this research is to make it easier for customers and sellers to make digital food ordering transactions.

This research has a practical impact by addressing the real challenges faced by MSMEs, such as GISAGIS.ID, in adopting digital technology. The developed website-based information system is expected to increase the digital presence of MSMEs, providing a platform to promote their products and services. In addition, the implementation of this system aims to make it easier for customers to view menus and place orders online, eliminating the need for face-to-face transactions.

This research has an impact on several theories and decision-making. First, its contribution to Technology Adoption Theory is seen in the handling of barriers of MSMEs, such as GISAGIS.ID, in adopting information technology (IT). Secondly, the Resource Dependency Theory is reflected in the budget constraints faced by MSMEs, particularly small and medium enterprises. Third, Information Systems Research supports IT integration to improve the competitiveness of MSMEs. Overall, this research provides insight into the challenges and opportunities associated with the digital transformation of MSMEs in Indonesia, while presenting practical solutions in the form of a web-based information system.

2. RESEARCH METHOD

This research adopts the waterfall method as the main approach in developing a website-based food ordering information system for Gisagis.id MSMEs. This method is known as the System Development Life Cycle (SDLC) which has certain steps to ensure the stages of system development run in a structured and measurable manner. Figure 1 illustrates

the steps in the applied waterfall method. The programming language utilized in the development of the website-based food ordering information system for Gisagis.id MSMEs is not explicitly mentioned in the provided text. The system design incorporates several Unified Modeling Language (UML) models, including the Entity Relationship Diagram (ERD), Use Case Diagram, and Activity Diagram.

The first step in this method is system analysis research, which involves feasibility studies and needs analysis. The results of this stage become the foundation for the next steps in system design, including conceptual design and physical system form design. The subsequent system implementation includes a programming stage that uses the programming language proposed by the researcher. System testing is conducted using the black box method, focusing on interface features, to ensure that the system functions as expected. The final stage, system deployment, involves disseminating the information system through hosting and domains. This aims to facilitate online interaction between Gisagis.id MSMEs and potential customers.

The system development process follows the waterfall method, a System Development Life Cycle (SDLC), with structured and measurable stages. The initial step involves system analysis, encompassing feasibility studies and needs analysis. The subsequent phases include system design, consisting of conceptual and physical design using UML, system implementation with programming, system testing using the Black Box method, and finally, system deployment through hosting and domains to facilitate online interaction between Gisagis.id MSMEs and potential customers. Results and discussions highlight the outcomes of the system requirements assessment based on needs analysis. The stages of system design involve the creation of UML models, such as the Entity Relationship Diagram (ERD), flowchart, use case diagram, and activity diagram, providing a detailed representation of the system concept.

The system interface design results showcase a user-friendly interface with various components, including Customer Landing Page, Food Ordering Page, Cart Form Page, Successful Order Page, System Admin Login Page, System Dashboard Page, Order Master Page, Order Detail Page, Food Master Page, Customer Master Page, User Master Page, Add User Data Page, and Daily Report Download Page. These components seamlessly integrate functionality and navigation, offering a comprehensive overview of the Gisagis.id food ordering information system. In summary, the system development methodology involves rigorous analysis, design, testing, and deployment stages, with the application of UML models for detailed system representation, leading to the creation of a comprehensive and user-friendly interface for the Gisagis.id food ordering information system.

3. RESULTS AND DISCUSSIONS

3.1 System Requirements Assessment Results

This stage is the result of the needs analysis that has been carried out to design a website-based food ordering information system for Gisagis MSMEs. This website is designed with the needs of three main types of users in mind: Super Admin, Admin, and Customer. First, on the Super Admin page, there are several key features, such as the ability to login to the system, manage food data displayed, manage order data, download daily sales reports, view customer data, and manage admin users. Secondly, the Admin page provides similar functionality, including login, food data management, order management, daily sales report download, and viewing customer data. Finally, the Customer page offers customers the ability to order food through the available domains, manage their orders, and select their order method. The next step in the creation of this web-based information system involves the use of tools such as Entity Relationship Diagram (ERD) to describe the relationships between entities, flowchart to detail the workflow of the system, and Unified Modeling Language (UML) including use case

diagram, activity diagram, and class diagram to present a more detailed picture of the system concept.

a. Entity Relationship Diagram

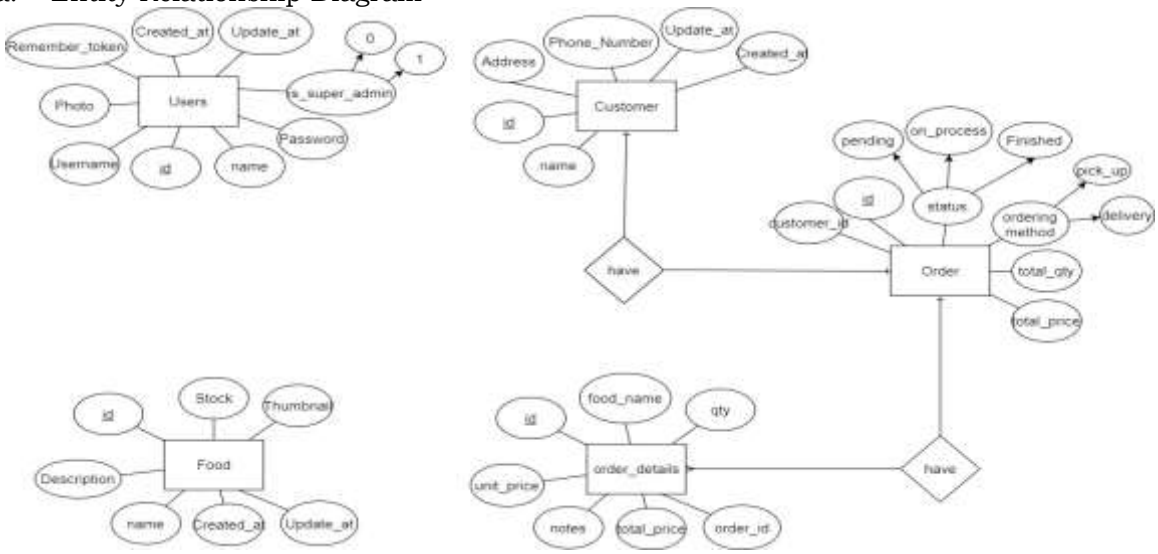

Figure 1 ERD

The picture above is a stage that has been completed. The ERD in the picture above has one to many and one to one relationship types.

b. Flowchart

In this study, it will explain the Flowchart results that have been made based on the researcher's recommendations for users. The following below is the result of the Flowchart that has been made:

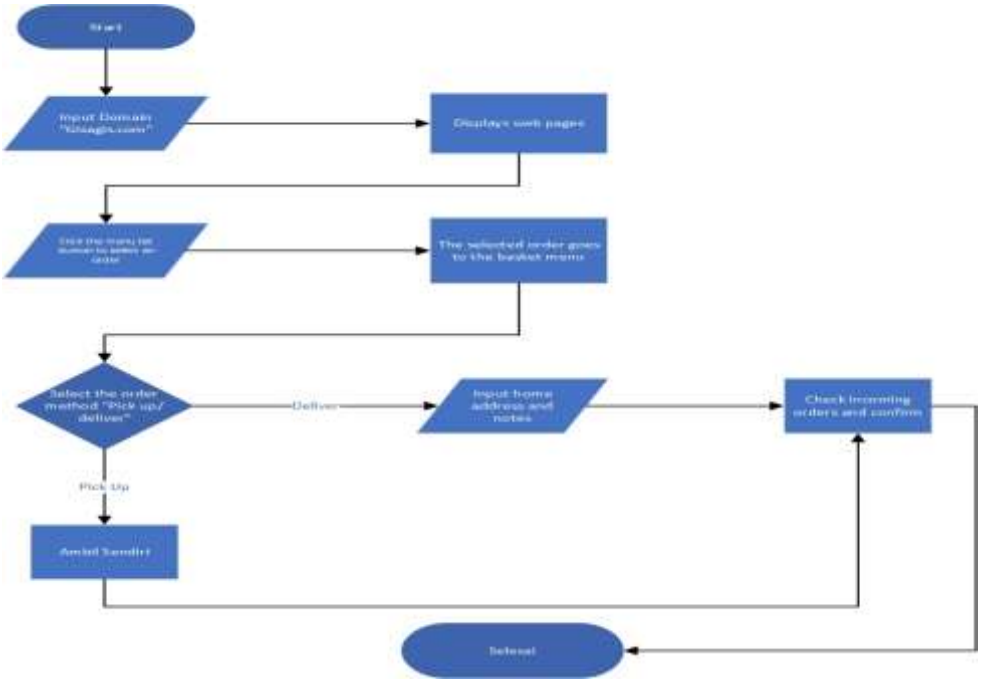

Figure 2 Food Ordering Customer Flowchart

4. Use Case Diagram

In this section, researchers have made the results of making use case diagrams to provide a detailed description of the system requirements between images with images. The following below is the result of making a use case diagram:

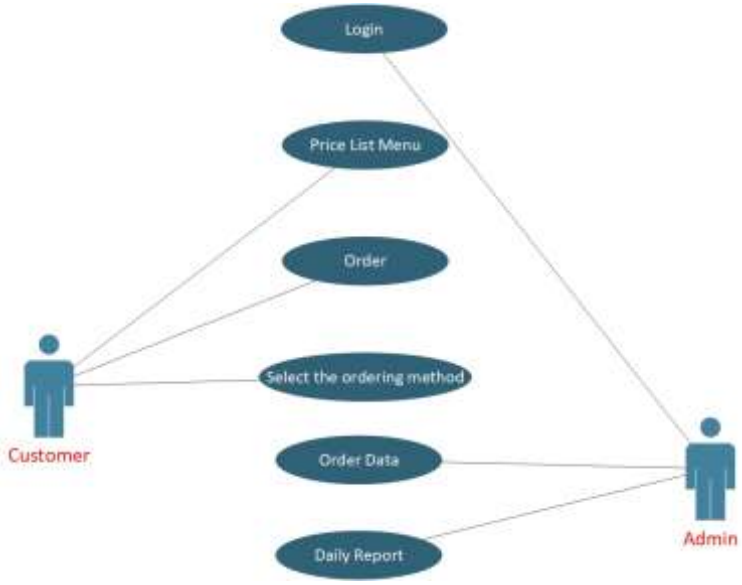

Figure 3 Use Case Diagram Gisagis.id

c. Activity Diagram

In this section, researchers have made the results of making activity diagram diagrams to show the sequence of activities for the system as a whole. The following below is an activity diagram that has been made by researchers:

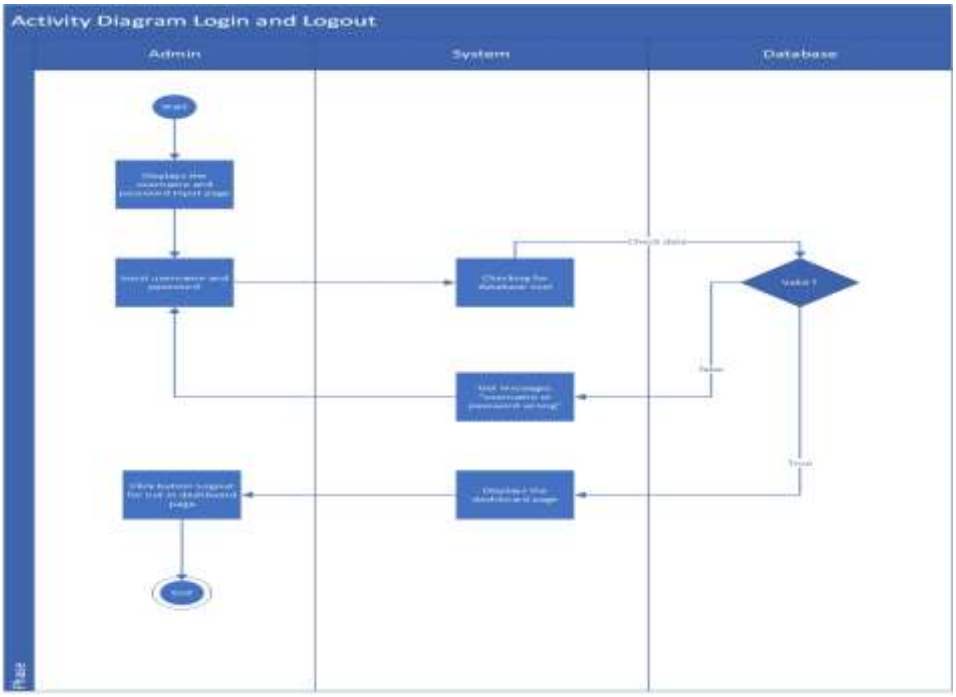

Figure 4 Activity Diagram Login/Logout Admin

In Figure 4, it starts when the super admin/admin logs in to the website where the system displays the login page. After that, the super admin or admin inputs the username and password stored in the database. Next, the system processes to check the data, whether the data is valid or not. If yes, it will display the dashboard page. However, if not, it will display the message "Username or password is incorrect".

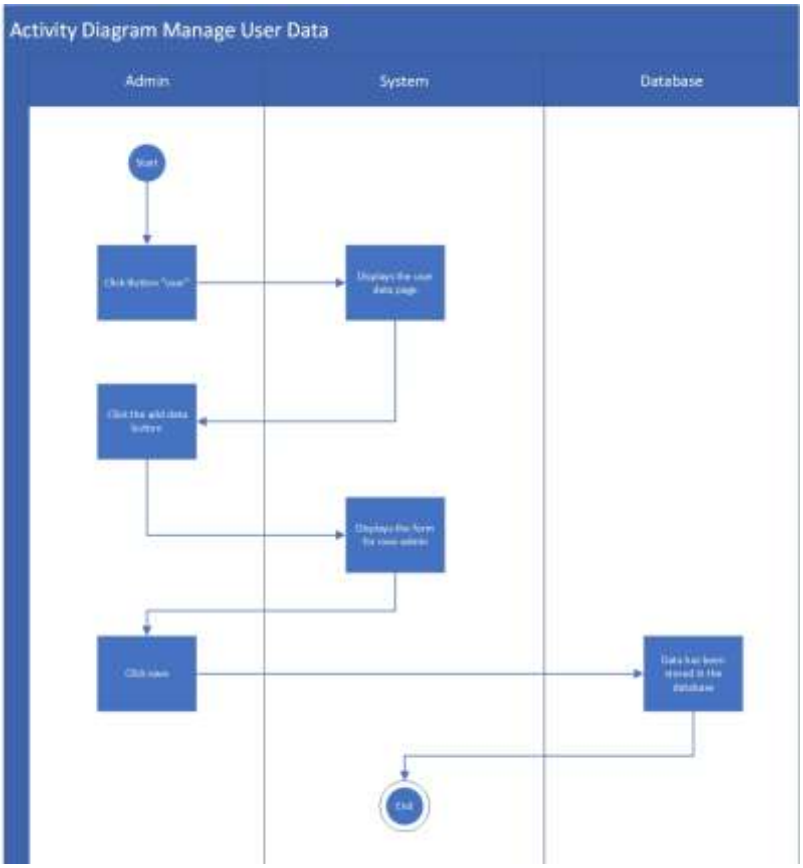

Figure 5 Activity Diagram Manage Food Data

In Figure 5 is the next stage is the activity diagram for managing food data. This process starts when the super admin/admin opens the food section to display the food data display. Furthermore, the super admin/admin can manage to add food displayed to the customer by filling out the form provided by the system when clicking the "Add Data" button.

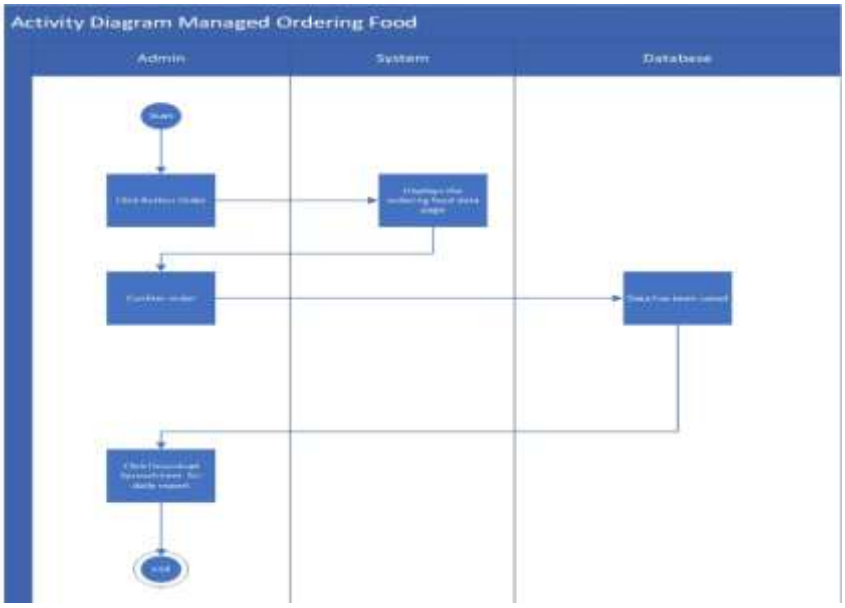

Figure 6 Activity Diagram Manage Order Data

In Figure 6 above is the stage or flow of super admin / admin to confirm orders from customers who have entered orders. This process starts where the super admin / admin opens the order button column section. Next, the admin will click the order button to confirm the order and call the number listed on the form from the customer. After that, if you need a daily report, the super admin/admin only clicks the download excel button.

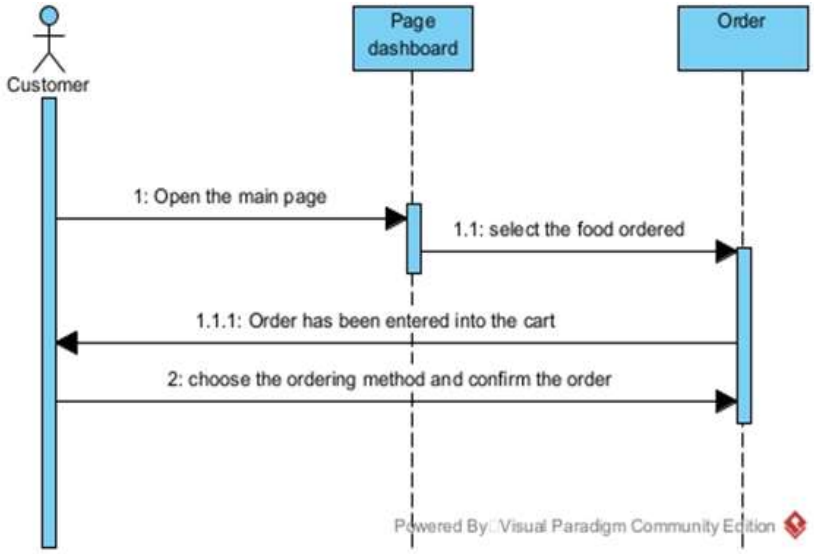

Figure 7 Activity Diagram Manage Customer Data

In Figure 7 above is the activity diagram stage for super admin / admin customers from anywhere who have ordered from umkm gisagis. This process starts when the super admin / admin presses the order button. Furthermore, the admin can view customer data and can see the search section column to search for the required customer data.

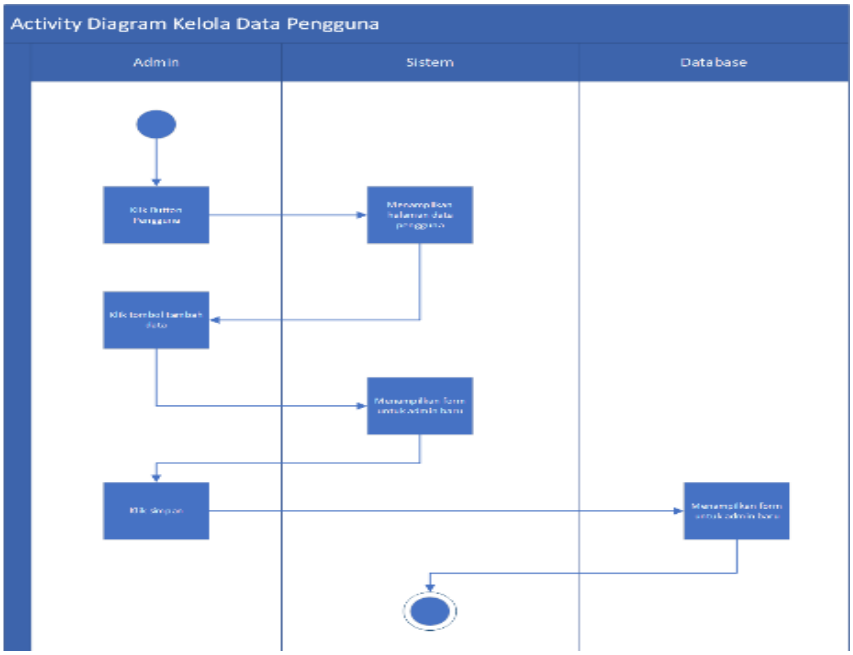

Figure 8 Activity Diagram Manage User Data

In Figure 8 above is an activity diagram stage that can only be accessed by the super admin to add members as admin. This process starts when the super admin clicks the user button. Next, the system will display a form for new admin data such as full name, username, password and password confirmation. After that the super admin clicks the save button, then the data is stored in the database.

System Interface Design Results. The food ordering information system designed for customers features a user-friendly interface with several integral components. The Food Ordering Page for Customers, illustrated in figure 13, facilitates the order placement process, allowing users to save order details by pressing the "cart" button. Following this, the Cart Form Page, as depicted in figure 14, provides access to the order form, ensuring a seamless and adaptable ordering experience based on the device used.

Upon completing the order form, users reach the Successful Order Page where they can finalize the order by clicking the "order now" button. Communication is streamlined as administrators contact users through the WhatsApp application. The system also incorporates an exclusive System Admin Login Page, ensuring secure access for super admins or administrators by requiring a username and password corresponding to the database. Upon successful login, administrators are directed to the System Dashboard Page, featuring notifications regarding incoming customer orders. The Order Master Page allows for a comprehensive view of incoming orders, with users able to process them efficiently by utilizing the "process" button. Subsequently, the Order Detail Page provides detailed information about processed orders, enabling administrators to finalize orders with the "finish" button.

The system further includes a Food Master Page for managing displayed food items, allowing users to add new data effortlessly through the "add data" feature. The Add Food Data Page requires users to fill in essential details, with the data automatically displayed upon pressing the "save" button. The Customer Master Page displays customer data associated with website orders. For user management, the User Master section is exclusive to super admins, providing insights into registered admins or users. The Add User Data Page, accessible only to super admins, facilitates the addition of new administrators by completing a required form for login to the information system. Additionally, a Daily Report Download Page is available for users to access reports by

navigating to the order master section and selecting the "download excel" feature. In essence, this comprehensive interface seamlessly integrates functionality and navigation, offering a thorough overview of the Gisagis.id food ordering information system.

5. CONCLUSION

Based on the analysis and development that has been carried out in the research entitled "Design of a Website-Based Food Ordering Information System for MSMEs (Case Study GISAGIS.ID)," several conclusions can be drawn. First, the information system application produced in this study succeeded in creating effective access between sellers and buyers online. Second, the information system application can significantly speed up the process of making daily reports, providing efficiency in business management and management. Third, the information system application makes it easier for customers or potential customers, especially in Surabaya, to buy food from various regions more easily. Fourth, the presence of information system applications provides opportunities for MSME business actors to compete and introduce their products more widely.

This research makes a scientific contribution by highlighting some key findings from the design of a website-based food ordering information system for MSMEs (GISAGIS.ID Case Study). First, the developed information system successfully creates effective access between sellers and buyers online. Second, the information system application can significantly speed up the process of making daily reports, increasing efficiency in business management. Third, the information system application makes it easier for customers or potential customers, especially in Surabaya, to buy food from various regions. Fourth, the existence of information system applications provides opportunities for MSME business people to compete and introduce their products more widely.

This research has several important implications. First, the development of the information system successfully improved online accessibility between sellers and buyers, indicating the need for further research in understanding the factors that influence technology adoption to improve customer affordability. Second, the application of the information system improved operational efficiency through the acceleration of the daily report generation process, providing a basis for further research on the implementation of information technology in business management. Third, the convenience provided by the information system in food purchasing for customers, especially in Surabaya, indicates the need for further research in understanding consumer preferences and market development potential.

As a suggestion for further development, given the ongoing technological developments, it is recommended that this system continue to be updated and improved. One of the steps that can be taken is to develop this food ordering information system application to mobile platforms, both Android and iOS, to make it simpler and more accessible to users. In addition, developing into a B2B digital business, such as involving franchising, can be a strategic step to expand the market and increase competitiveness. Thus, efforts to continue to innovate and expand the scope of this application will support the growth and sustainability of MSME businesses in the evolving digital era.

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