

Web Application Based Food Ordering and Sales in Campus Environment

Teuku Muharam Rizqullah¹ Sangajik Suryo Guritno² Naurah Hikmah Aulia³

Informatics Study Program, Faculty of Informatics and Data Science, Universitas Sebelas
Maret, Surakarta City, Central Java Province, Indonesia^{1,2,3}

Email: tmr.irzi1533@student.uns.ac.id, sguritno16@student.uns.ac.id,
naurahhikmahaulia@student.uns.ac.id

Abstract

We developed a Web Application-based Ordering and Sales System within the campus environment to facilitate the ordering and sales process. Our goal is to provide convenience to admins, users and customers with guaranteed access rights. The food menu list is clearly displayed to make it easier for users to place orders online. Customers can easily order food online without having to come to the location, and transactions can be made anytime and anywhere. Our Web Application development uses programming languages such as CSS, HTML, and PHP. Direct surveys were also conducted for research development. Our hope is to provide a better experience for users, admins and customers and keep customer data secure. The development of a Web Application-based Ordering and Sales System aims to provide convenience and comfort to admins, users and customers in making the process of ordering food online and ensuring data security from users.

Keywords: Ordering, Convenience, Food, Web



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/).

INTRODUCTION

The development of internet technology and mobile applications has brought progress in the application of technology in modern life. One example is an online food ordering application that allows us to get the food we want easily and without having to go to a food store. In recent years, more and more consumers tend to order food online. Online ordering is considered faster, more convenient, and provides benefits for consumers to view menus and food reviews. Especially for millennials, the use of technology is inseparable. Statistics show that e-commerce users in Indonesia will grow by 15 percent in 2021, with an estimated number of users reaching 159 million users. This shows how important online food ordering is in meeting consumer needs. Online shopping platforms that are easy and practical are now massively operating and have helped solve many of the problems that existed before. Examples of buying and selling platforms include gofood, shopeefood, grabfood, lazada.com and so on. The characteristics that distinguish between buying and selling online and buying and selling offline are in the transaction process and the main media (Fitria, 2017). Previous research has been carried out but is still focused on a restaurant (Immah, 2015), shop (Triyanto, 2020), and cafe (Saputri, 2019) not on individuals/groups within the campus environment. However, the above platforms and research still cannot cover the sale and purchase of food within the campus environment as a whole, therefore we developed a web application that can maximize the sale and purchase of food within the campus environment, targeting individual sellers or small and large groups of students and campus staff.

RESEARCH METHODS

Our research uses this method SDLC (Software Development Cycle) which consists of five phases. We conducted this research at Surakarta, with the main tool used being a laptop with a

minimum specification of i3 gen 10/above with Windows, Linux and Mac OS operating systems. As well as for web application development we use HTML version 5, CSS Bootstrap version 5.0, PHP version 8.0, JavaScript, XAMPP version 3.3.0, and use hosting from 000webhost.com.

The core phases of SDLC consist of analysis, design and implementation which are the main steps in software development. In addition, there are two supporting phases, namely the planning phase, which aims to support the smooth running of the core phases of the SDLC. With reference to the SDLC, This study conducted an in-depth analysis to understand the needs and existing problems. Then the design stage is carried out to design a suitable and efficient solution. After that, the research continues into the implementation phase, where the planned and designed applications are implemented. (Satzinger.et.al 2008).

This research consists of 3 main stages starting with the planning stage. The first stage is planning including research objectives, identification of problems, and selection of technology to be used in application development. This stage aims to analyze the underlying problems and plan application development. Next, an analysis phase is carried out to obtain a deeper understanding of the existing system. Analysis is carried out through observation, and the results of the analysis will be described in the form of Use Case Diagrams and Activity Diagrams. The second stage is Design, where the technical design of the application is represented. Each class and attribute involved in the application is described in a Class Diagram, while the processes that occur are described in a Sequence Diagram. In addition, the design of the database that will be used is also carried out at this stage. The final stage is the implementation or application development stage based on the results of the research and designs that have been prepared in the previous stages. At this stage, the application is developed by programming according to predetermined specifications. Thus, this research involves the stages of planning, analysis, design, and implementation in order to develop applications based on the results of research that has been done.

RESEARCH RESULTS AND DISCUSSION

Research Analysis

Based on the above method, system requirements are made which are described in the use case diagram below:



Figure 1. Usecase System Diagram

The usecase diagram in Figure 1 depicts 2 actors consisting of users and admins, and accessing 18 usecases including:

1. Accessing the login page for users and admins, there are 2 options, namely Login and Signup.
2. Login, users and admins who already have an account can login to access the web.
3. Doing Signup, users who do not have an account can create an account by first registering an account, then can access the web.
4. Place an Order, the user can place an order by selecting food and the amount of food, followed by paying for the order.
5. Selecting the type and amount of food, users can choose the type and amount of food according to their needs.
6. Make a payment, after selecting the amount and type of food, the user will pay for his order with a choice of several types of ATM transfers.
7. Confirming the order, if the payment is in accordance with the nominal and the address entered is correct, the admin will validate the payment and if an error occurs, the admin will cancel the order.
8. Doing CRUD, the admin can add data, display data additions, update data and delete data.

After compiling the Usecase diagram, each usecase or feature is detailed using an activity diagram, Figure 2 is an example of an activity diagram of a use case choosing an order

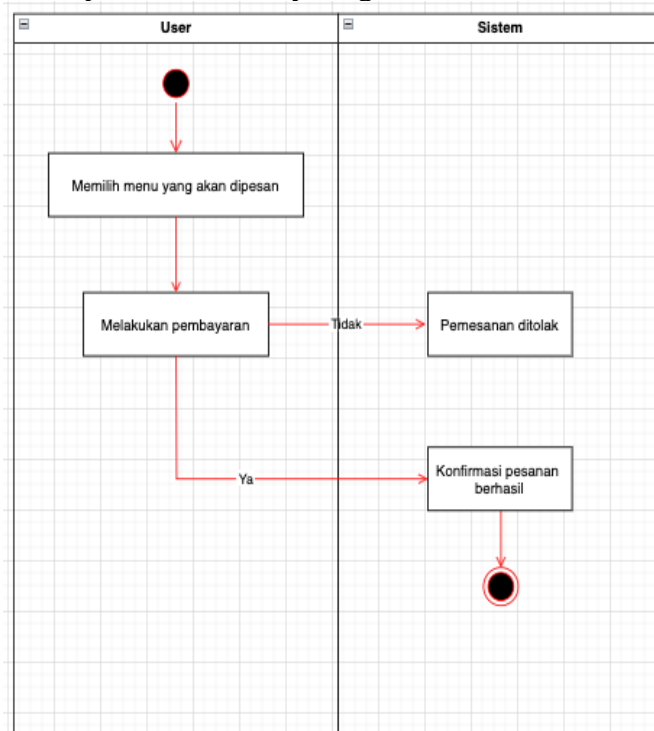


Figure 2. Activity Diagram

Choose Orders

Figure 2 shows the activities that occur between the user and the system to select the required order.

System Design

Next, there is the design stage, namely by compiling a sequence diagram. A sequence diagram is a diagram that describes a system program scenario, which will then be described with a class diagram as shown below:

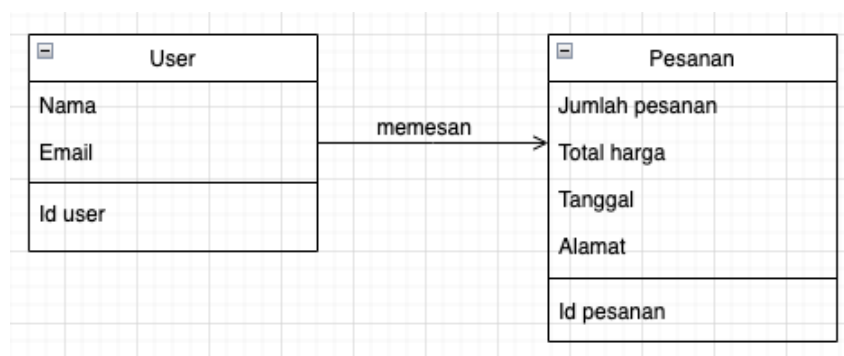
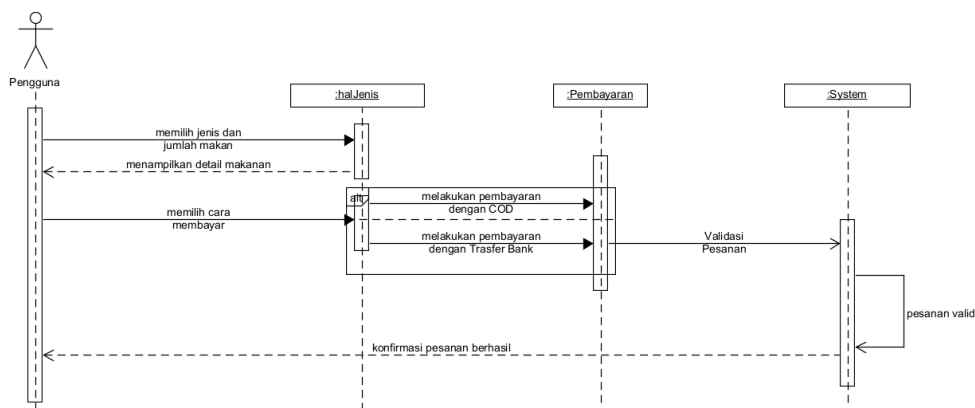


Figure 3. Sequence and Class Diagram

Choose Orders

As can be seen in Figure 4, the user accesses the boundary page type, then proceeds to the payment controller and finally, the system model. The final stage of the system is implementing or creating a web application.

Discussion

Example display of a web application that has been made according to the results and methods used, as shown below:

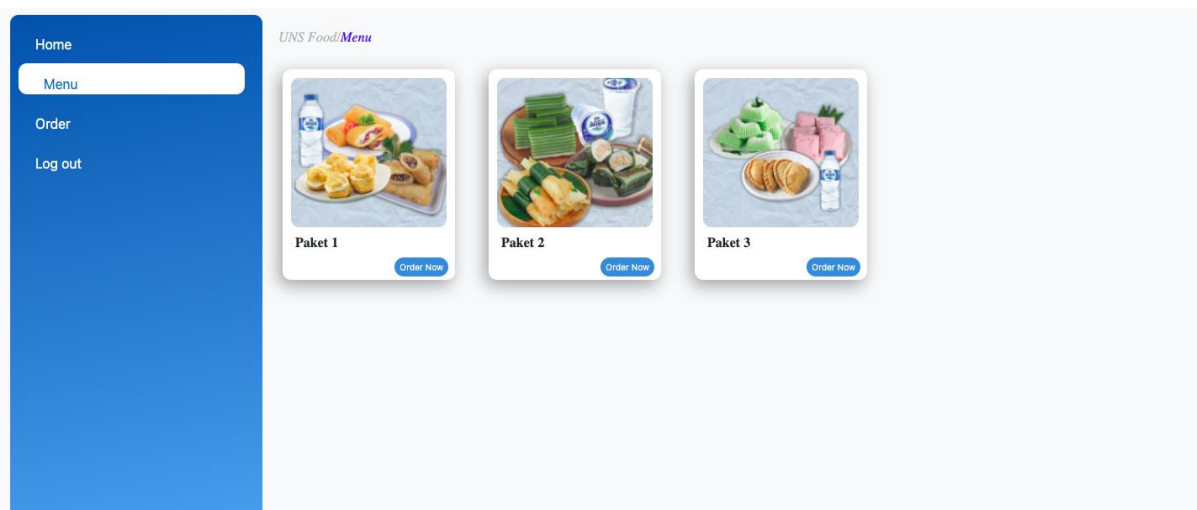


Figure 4. Web Application Display: Selecting Orders

In Figure 4, is a display of choosing an order, the user can select the desired order by pressing the order here button. After completing the selection, it will proceed to the payment page. So, overall the steps taken by the user are: 1. Signup or Login; 2. Choose the meal and the desired amount; 3. Make payment for orders; 4. Logout, while the steps taken by the admin are: 1. Signup or Login; 2. Verify incoming Payments/Orders; 3. Perform CRUD data. With this web application, it can facilitate students and staff to make sales and purchases within the campus environment which can be accessed easily. The research that we carried out has similarities with research that has been done before, namely web applications for selling and buying food, but we specify this within the campus environment, targeting individuals or small groups consisting of students or campus staff.

CONCLUSION

This web application platform makes it easy for consumers to buy and sell food on campus. By using this application, consumers do not need to come directly to the food store, but can order food via a laptop or other device. Orders will be delivered directly to the desired destination address. Another advantage is that this application provides an image display and restaurant menu details, so that consumers can choose food more easily. Using this application also helps save time and increase efficiency, because the ordering process is faster. The MySQL database system used in this application also enables fast, accurate and integrated information. This information can be linked to one another, facilitating data management and ensuring the accuracy of the information conveyed. Thus, this web application provides significant benefits, such as ease of ordering food, clear menu display, time saving, and accurate information that is integrated through a database system. But there are still deficiencies in the research that we did, namely users and admins, can only access the web application via a laptop or large-screen device, because the display will experience an error if accessed via a cellphone or device. Thank you as much as possible to Hasan Dwi Cahyono, S.Kom, M.Kom as the supervising lecturer in the research that we did and to the Faculty of Informatics Technology and Data Science, Sebelas Maret University, Surakarta for providing various facilities to support and carry out this research.

BIBLIOGRAPHY

- Alan Dennis, Barbara Haley Wixom and David Tegarden. (2002), *Systems Analysis and Design An Object-Oriented Approach with UML*, John Wiley&Sons, Inc.
- Inayata, I., Hidayatullah, M. N., Kamisutara, M. (2015), *Aplikasi Pemesanan Makanan Berbasis Web (Studi Kasus RM Lesehan Berkah Ilaahi Gresik*. *Jurnal NARODROID*, 1(2).
- Saputri, Z. R., Oktavia, A. N., Ramdhani, L. S., & Suherman, A. (2019). *Rancang Bangun Sistem Informasi Pemesanan Makanan Berbasis Web Pada Cafe Surabiku*. *Jurnal Teknologi Dan Informasi*, 9(1).
- Satzinger, Jackson, and Burd.(2008), *Systems Analysis and Design In a Changing World Third Edition*. Thompson, Course Technology.
- Trisakti, B., & Pratama, F. I. (2020). *Perancangan Aplikasi Penjualan Berbasis Web pada CV. Jawi*. *Jurnal Informatika Dan Rekayasa Perangkat Lunak*, 2(1).
- Triyanto, R. (2020). *Rancang Bangun Aplikasi Penjualan Berbasis Website (Studi Kasus: Toko Waroeng Bola)*. *Jurnal Sistem Informasi dan Sains Teknologi*, 2(1).
- Zahara, A. N., Nunsina. (2022), *Perancangan Aplikasi Pemesanan Makanan Online Berbasis Web(E-del)*. *Journal of Information System, Computer Science And Information Technology*, 4(2).