



Web based Yogyakarta food recipe application using sdlc waterfall method

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ARTICLE INFO

Article history:

Received Mar 11, 2023

Revised Mar 13, 2023

Accepted Mar 17, 2023

Keywords:

Culinary
Food
Software Development Cycle
Waterfall
Yogyakarta

ABSTRACT

Cooking is the process of processing food ingredients and seasonings to be used as a variety of dishes. Cooking can be done by anyone. When cooking, recipes are needed as a reference to process food ingredients into a dish. A recipe in the modern sense is defined as a set of instructions that tell how to prepare and cook food, including a list of what foods are needed. Yogyakarta has a variety of culinary delights. With the passage of time, Yogyakarta's specialties are displaced by foreign food entering Yogyakarta. The Recipe application contains a variety of recipes for typical Yogyakarta food. This research aims to help the community in making Indonesian culinary food, especially the Yogyakarta food menu. The application is created web-based using PHP programming language and mysql database. For the software development method, which is carried out is using the Software Development Life Cycle (SDLC) Waterfall method. The first stage carried out is planning, design stages, implementation and trials. Based on the test results using a black box, the system created has functional features according to what is expected. The system features login, Manage recipe data, Manage category data and Manage comment data

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1. INTRODUCTION

The development of technology from year to year is very rapid and will continue to grow day by day, especially in the field of Information (Supriyanto, 2019). The rapid development of technology like today makes it easier for us to do everything from shopping, looking for news today, studying online, and so on. Technology has been widely used, for example, such as in government agencies, schools, hospitals, clinics and so on. Digital or computer-based information technology can increase work effectiveness. This technology allows us to make the processing of a document digitally (Siregar, 2019). Digital processing and storage of data can improve performance effectiveness and time efficiency (Doni & Lubis, 2019).

Cooking is the process of processing food ingredients and seasonings to be used as a variety of dishes. Cooking can be done by anyone (Lestari & Kusri, 2012). When cooking, recipes are needed as a reference to process food ingredients into a dish. A recipe in the modern sense is defined as a set of instructions that tell how to prepare and cook food, including a list of what foods are needed (Klenová, 2010).

In cooking, there is a slight difference in the amount of ingredients and seasonings and how they are processed so that a recipe is needed to be used as a reference in cooking. A recipe is a measure used to process food ingredients that have been tested for accuracy (Sari et al., 2019).

A menu can consist of dishes originating from one country, for example an Indonesian or continental menu. It can also be a menu or arrangement of dishes from various countries so that in a menu there are several types of dishes. For example, Indonesian and continental cuisine that is well combined and harmonious so that it is a good arrangement of dishes. Indonesian cuisine is a food arrangement consisting of staple foods, side dishes, vegetables, chili sauce, delicious, and drinks. While continental cuisine is a cuisine that comes from countries that have large plains, such as European countries (Komariyah & Marwan, 2010).

The research conducted by focused on the Trade and Industry Office of Boyolali Regency which previously carried out manual industrial data collection which resulted in a slow data collection process. In this regard, it aims to design a Website-based Boyolali Regency Government Small and Medium Industry Information System that functions as a new industry data collection to the office carried out by industry players online, submitting online assistance proposals that can be submitted by industry players in accordance with applicable SOPs, and as a medium for IKM promotion. This system is expected to support daily operational processes by DISDAGPERIN, industry players, and the general public. In this system the author uses the SDLC waterfall development method and the laravel framework with PHP, HTML and MYSQL programming languages as databases (Mahardikawati & Nugiyatna, 2020).

Research conducted by (Rijanandi et al., 2022) conducted a population administration system that uses computer technology in its activities. We designed a web-based village information system using Codeigniter. For the software development method, which is carried out is using the Software Development Life Cycle (SDLC) Waterfall method. With the software that we have developed, it is hoped that it can help facilitate all administrative affairs and village records which are currently still manual

Some of the studies that use the Waterfall Method are (Aldi, 2022) and (Al Fajar et al., 2022). The method we used in this study was SDLC Waterfall. An approach to systematic and sequential software development starting from system advancements in analysis, design, code, testing and maintenance (Abidin & Wiyono, 2017), Waterfall is divided into several stages namely the analysis, design, coding, and testing stages (Dharmawan et al., 2018).

Waterfall was chosen for use in software development because it is consistent with the qualities of high-quality software. (Yulianti & Pranoto, 2021). The reason we use Waterfall is because it's easy to use, a process that goes from analysis to support, every process doesn't overlap each other. In this design we used PHP programming language and mysql database. Hypertext Preprocessor (PHP) is an interpreter programming language that translates lines of code into a program that the computer understands while it is running (Saragih, n.d.) (Widiyawati & Imron, 2018)

PHP is one of the programming languages for servers that is very popular and easy to use. Many people use PHP to create a wide variety of websites.

A popular programming language for building websites is PHP. As more people became aware of PHP's usefulness, it grew in popularity from a modest opensource effort at first. Rasmus Lerdorf developed PHP in 1994. PHP is a recursive acronym for "PHP: Hypertext Preprocessor," which is what the term "PHP" stands for. PHP is a server-side

scripting language that is based on HTML. used to build complete e-commerce websites and manage dynamic content, databases, and session monitoring. Numerous well-known databases, including MySQL, PostgreSQL, Oracle, Sybase, Informix, and Microsoft SQL Server are compatible with PHP(Ogala, 2019)

Similar to HTML, PHP is a scripting language. HTML enables the creation of dynamic applications for the web that support data processing. The server will fully execute all of the provided syntax, sending only the results to the browser. Then the server processes the programmed language that has been set there.(Adam & Andolo, 2019)

A highly common kind of database server is MySQL. RDBMS (Relational Database Management System) subtypes include MySQL. Because SQL includes numerous standards that have been specified by a group called ANSI, MySQL supports the PH programming language, a structured query language. RDBMS (Relational Database Management System) servers include MySQL. Database users can generate, manage, and utilise data in a relational manner using an RDBMS. As a result, there is a relationship between each table in the database.(Eyada et al., 2020)

Mysql is a Relational Database Management System (RDBMS) database software just like any other database e.g. Postgree, Oracle and so on (Silalahi, 2018). Mysql is one type of database that is very well known. Mysql is popular because it uses SQL as the base language to access its databases (Siswandi, 2017)

This research will discuss yogyakarta food recipes using PHP programming language and MySQL database. By using this application to get food information and at the same time as a reference to channel the cooking hobby. The purpose of this study is to build a web-based learning system application on how to make yogyakarta food recipes, as a tool in learning to know regional cuisine in Indonesia, and useful for anyone who loves and strives for the preservation of traditional cuisine in the country as a noble cultural heritage of our ancestors.

2. RESEARCH METHOD

2.1 Method Diagram

The development method used to build the SDLC Waterfall web-based village information system in this study is the SDLC Waterfall method. The following is an explanation of this method:

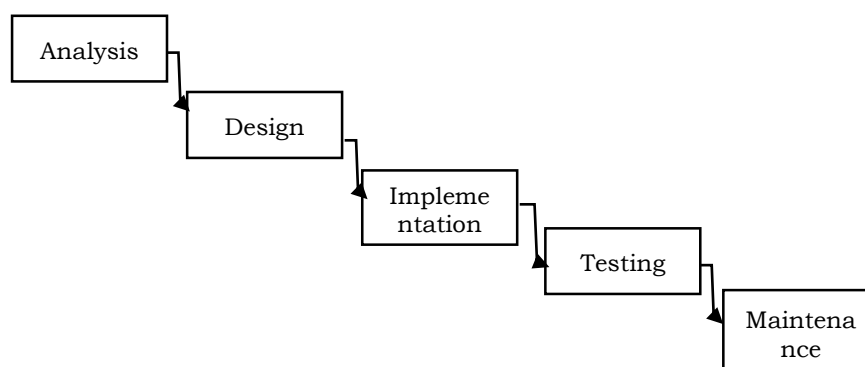


Figure 1. SDLC Waterfall Process

a. Analysis

At this stage we analyze the needs of the system starting from functional needs as well as non-functional needs.

b. Design

The design stage is an advanced stage where designs for applications will be presented starting from interface design and database design.

c. Implementation

This stage is the stage where the coding process begins. At this stage, database design and interface design began to be built using a DBMS or using programming languages.

d. Testing

The testing phase is the stage where the system that has been designed begins to be tested. This phase of the trial was carried out to test the feasibility of the system to avoid system errors.

e. Maintenance

This stage is the stage where the system that has been created will be carried out maintenance. The purpose of this maintenance is to correct errors, correct system implementation and improve system performance (Rijanandi et al., 2022).

2.2 Flow Methodology

The research methodology section discusses the methodology applied. The type of research carried out is implementative research. The methodology applied is the waterfall method. Depiction of research methodology in the development of cooking recipe applications with recommendations based on food ingredients in Figure 2.

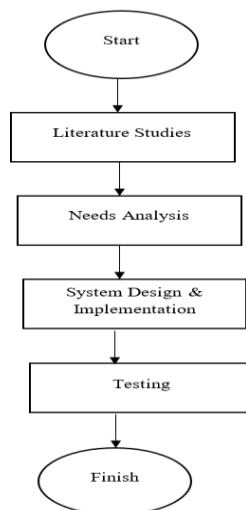


Figure 2. Flow Methodology

a. Literature Study

This step is the first step that is carried out to find and explore various theories, where the theory is used as a support for the development of cooking recipe applications and supports the achievement of research goals. The theoretical basis is obtained from books, electronic books, journals, sites and previous research.

b. Needs Analysis

This step is used when exploring the needs of cooking recipe applications with recommendations based on food ingredients.

c. Design and Implementation

The application is designed based on the results of the needs analysis previously presented. These needs are further translated into unified modeling language (UML).

Obtained use case diagram. A recipe application with recommendations based on food ingredients will be developed using the MySQL database and PHP language.

d. Testing

This stage is carried out in order to ensure that the system can work correctly as expected. Testing is carried out on each feature to ensure that these features have met the needs of the user. The testing stage is using the black box testing method which is carried out through validation testing (Negoro et al., 2019).

3. RESULTS AND DISCUSSIONS

The research conducted by (Supriyanto, 2019) used a use case diagram consisting of user and admin. Use case diagram user i.e. can open applications and categories of recipes. Use case diagram admins can do data on add recipes, add categories, add pictures and comment recipes. Research by (Supriyanto, 2019) seen from users has similarities with the author of the writing, namely there are two users. The difference between the research (Supriyanto, 2019) and the author is the implementation of the program. If the research conducted by (Supriyanto, 2019) uses android. The author implements a website-based program. The advantage of the research conducted by the author is that there are categories of recipes for side dishes and snacks. So, users can choose between the two categories.

3.1 Design

a. Use case diagram

The use case diagram in this study uses 2 actors consisting of admins and users. Admins can log in, log out, view categories, view comments and view a list of recipes. Admins can perform activities on the category form, namely the process of adding and deleting. Then the Admin can do activities on the comment form, namely the delete process. Admins can do activities on the recipe list form, namely the process of adding, editing and removing. Users can view recipes and add comments.

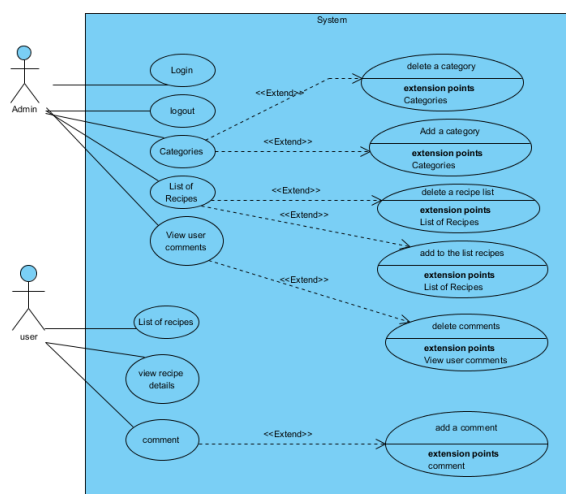


Figure 3. Use Case Diagram

3.2 System requirements analysis

In this web-based Yogyakarta food recipe application, there are two types of users who interact with each other in the system environment, namely: admin and user

a. Admin needs

- 1) Admins can login
- 2) Admins can log out
- 3) Admins can delete categories
- 4) Admins can add categories
- 5) Admins can delete food recipe lists
- 6) Admin can add a list of food recipes
- 7) Admins can view and delete user comments

b. User needs

- 1) Users can see a list of food recipes
- 2) Users can see a list of food recipes in more detail
- 3) User can add comments

3.3 System Display Results

a. Admin Dashboard page

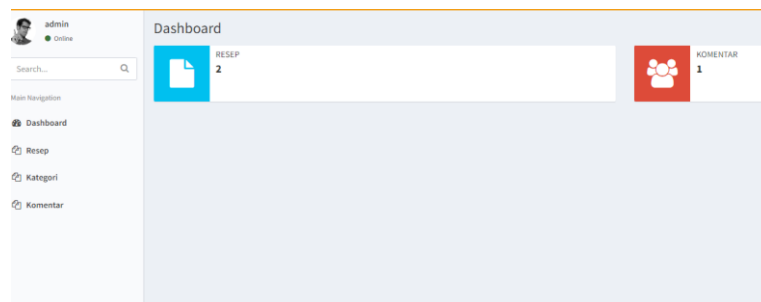


Figure 4. Admin Dashboard Page

On the dashboard page the admin can access the dashboard page, recipes, categories and see comments from users

b. Admin Recipes Page

In figure 5 the admin can add a menu of recipes by entering the name, difficulty level, region of origin, main ingredients, time, pictures, seasonings, categories and how to cook.

Figure 5. Admin Recipe Page

c. User Recipe Page

The output of this system is that cooking recipes can be seen in Figure 6 so that users can see the recipes available on the website.

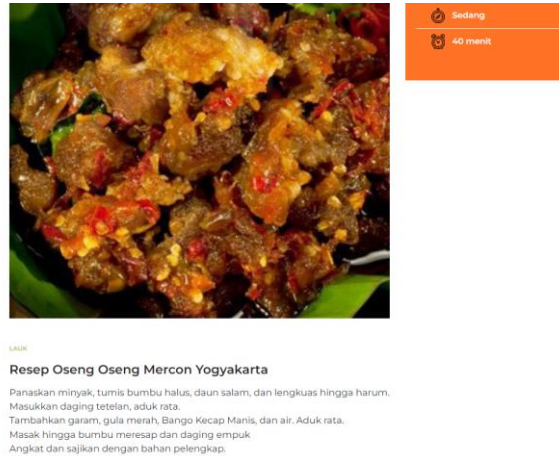


Figure 6. Detailed Page of Cooking Recipe

3.4 Testing

a. BlackBox Testing

In the online Foam Product Production Monitoring System program's Black box testing phase, testing is done by utilizing all of the features and capabilities offered by this application, then determining whether the results are as anticipated. (Chang et al., 2020). After the system is successfully built, then testing is carried out with a black box to test the functionality of the system. Based on tests conducted with tests on systems involving admins and users, all functions on the system have functioned as expected so that they can be used by users. The black box testing that has been carried out is presented in the conclusions in table 1 below

Table 1. Black Box Test Results

Input	Input	Output	Conclusion
1	Login	Get into the system	Successfully
2	Food Recipe Data	Food Recipe Data Successfully	Successfully
3	Category Data	Category Data Successfully	Successfully
4	Comment Data	Comment Data Successfully	Successfully

4. CONCLUSION

Based on the results of the description of the research that has been made, the conclusion can be drawn as follows: Designing this Yogyakarta Cuisine Recipe application using the SDLC Waterfall Method makes making the application faster. This web-based Food Recipe application is the main alternative choice for food connoisseurs or to learn typical Yogyakarta cuisine easily and quickly. Based on the test results using a black box, the system created has functional features according to what is expected. The system features login, Manage recipe data, Manage category data and Manage comment data. Future research can be implemented using mobile applications so that users are more practical in using applications. Because, in the research that the author wrote is website-based and

has not been implemented using a mobile application. Then, future research can use other methods besides the SDLC Waterfall Method.

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