Chatbot-Based Solo Culinary Tourism Management Information System Web

Monica Setyawati[1], Agus Cahyo Nugroho[2], Bernardius Harnadi[3]

[1,2,3] Information Systems Department, Soegijapranata Catholic University, Indonesia
Pawiyatan Luhur IV No.1, Bendan Duwur, Semarang City, Central Java 50234
[1]dominic.aldrich88@gmail.com
[2]yoga@unika.ac.id,
[3]erdhi@unika.ac.id

Abstract— Solo city is an ancient Indonesian city home to various cultural artifacts from ancient to modern eras. Finding famous Solo culinary treats on Google can be difficult for many individuals inside and outside of Solo. This study was conducted to make it simple for people living in and outside of Solo to find delicious foods in Solo by improving the Solo culinary website. Users can access the Solo Culinary tour SIM web by supplying details about culinary locations, addresses, and Solo Culinary phone numbers. Try the Solo chatbot and WhatsApp bot on the Solo culinary tourism SIM site to see their effect on implementing the Solo chatbot and Solo culinary tourism. PHP, HTML, and CSS were used to construct the Making Solo food website. A chatbot-based Solo culinary tour SIM online and system testing approach employing interviews was used in this project. For the author's data analysis and to make it easier for locals inside and outside of Solo to enjoy the culinary delights of Solo, interviews were held in the city. The study's findings demonstrate that residents within and outside of Solo can discover culinary information, locations, and phone numbers for Solo Culinary by using the chatbot.

Keywords— *website, chatbot solo, whatsapp bot solo, information system, interview*.

I. INTRODUCTION

Solo City is an ancient city located in Indonesia, which undoubtedly preserves diverse cultural heritage from both ethnic groups, ranging from historical to prehistoric times. It has two names, "Surakarta" and "Solo." "Solo" is derived from where the settlement was led by a port labour leader named Ki Soroh Bau (head of labour). "Surakarta" is derived from the name of a dynasty of the Mataram Kingdom in 1745 [1]. When visiting Solo City, it would be complete with tasting its typical cuisine. The typical foods of Solo City are Nasi Liwet and Gudeg Ceker [2]. When we visit Solo City, it is only complete with trying one of its unique dishes.

Many people outside the region and the city often search for Solo City's special foods on Google. However, they do not provide exact addresses and directions. Consequently, people need clarification about the locations of Solo City's specialty foods. Therefore, creating a website with a *Chatbot* will help people find Solo City's culinary delights more precisely. A website is often referred to as a web page. It is a collection of interconnected web pages, with the first page of a website being the home page, while the subsequent pages are called web pages [3]. Many people need help understanding what a *Chatbot* is. *Chatbot* itself comes from the word's "chat" and "bot." Chat refers to the telecommunications device several people use to communicate in writing. A **bot** is a

program that can provide answers to users [4].

METHOD

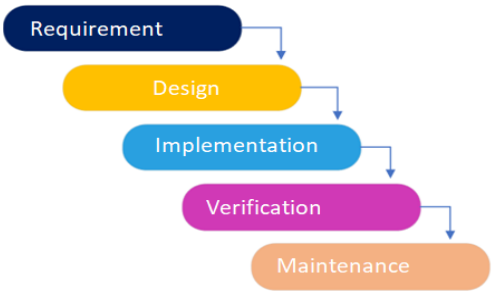

Figure 1. *Waterfall* Method

Figure 1. The Waterfall method is an early approach used in Software Development Life Cycle (SDLC) for software development. This model has been widely utilized in the development process. One of the applications is the development of a *Chatbot* for a website, which will be researched and built using the Waterfall development method. The Waterfall method is employed to facilitate the creation of the website's *Chatbot.*

2.1 Qualitative Research Method

Qualitative research is indeed an essential aspect of research. It is valuable for explaining a phenomenon by gathering more in-depth and accurate data. Qualitative research aims to understand and interpret the meaning and context of a particular situation or event, often relying on methods such as interviews, observations, and analysis of textual or visual materials. Unlike quantitative research, which focuses on numerical data and statistical analysis, qualitative research emphasizes capturing the richness and complexity of human experiences, perspectives, and social interactions. It helps researchers gain insights, explore new theories, and generate hypotheses for further investigation. The data collected through qualitative research provide a deeper understanding and contribute to developing knowledge in various fields of study.

2.2 Population

According to Azuar and Irfan, population is a study's total number of elements [5]. The population in the study is several people from the city of Solo and people outside the city who will use *chatbot*s as a guide to typical culinary delights.

2.3 Data Collections Technique

In this study, of course, researchers conducted two data collection, namely:

2.5.1 Interview

According to Kartini Kartono [6], an interview is a directed conversation focusing on a specific issue. It is a verbal question-and-answer process where two or more individuals interact face-to-face. Interviews are conducted to gather information, opinions, or experiences directly from participants.

2.5.2 Observation

According to Sutrisno Hadi [7], observation is a process that involves various biological and psychological processes. Observation is used to facilitate researchers in seeking various kinds of Solo's local cuisine. The researcher will directly participate in the Solo City, Central Java observation activities.

RESULTS AND DISCUSSION

A. RESULTS

1. *Use Case Diagram*

A **use case** is a method to complete the needs according to the new system. The following is a Management Information System Web Use Case *Chatbot*-Based Solo Culinary Tourism [8]. The following is the Web Use Case of the *Chatbot*-Based Solo Culinary Tourism Management Information System. The CRUD use case diagram has two actors: admin and user. Admin can log in, edit maps, edit webs and log out. Meanwhile, users can only view maps, view details, and view web details.

2. *Activity Diagram*

An activity diagram is a technique used to explain in detail with logic and with the process [9]. The following is the Web Activity Diagram of the *Chatbot*-Based Solo Culinary Tourism Management Information System. There are two *activity diagrams* that is

1. *Activity Diagram* User, Admin dan Sistem there are two activities, namely admin and system. The activity diagram above explains that the admin can enter the login page (create, read, update and delete). The admin first enters the username and password to be able to enter the page (create, read, update and delete). After the admin can enter the culinary list page for the city of Solo, the admin can make edits or additions to locations, names, pictures, culinary descriptions, and content and immediately store data. Admin, of course, can make edits to points on maps, such as entering names, xpos and ypos. The admin can directly save at the map point to change to the culinary list page for the city of Solo.
2. *Activity Diagram* Admin dan Sistem there are two activities, namely admin and system. The activity diagram above explains that the admin can enter the login page (create, read, update and delete). The admin first enters the username and password to be able to enter the page (create, read, update and delete). After the admin can enter the culinary list page for the city of Solo, the admin can make edits or additions to locations, names, pictures, culinary descriptions, and content and immediately store data. Admin, of course, can make edits to points on maps, such as entering names, xpos and ypos. The admin can directly save at the map point to change to the culinary list page for the city of Solo.

3. *Sequence Diagram*

Sequence diagrams should focus on the behaviors that exists within the system. Sequence diagrams, it is usually used to describe interactions between objects in use cases [10]. The following is a Web Sequence Diagram of a *Chatbot*-Based Solo Culinary Tourism Management Information System. There are three sequence diagrams that is *login sequence diagrams*, *detail edit sequence diagrams* and *Map edit sequence diagrams*.

1. *Login sequence diagram* there is one actor, namely the admin. The Edit Details sequence diagram shows that the admin can enter the login page. If there is an error in the culinary name, the admin can immediately edit the page (create, read, update and delete).
2. *Detail edit sequence diagrams* there is one actor, namely the manager. Sequence diagram Edit, namely the details above, can explain whether the administrator can enter the login page (create, read, update, and delete). Then the web system obtains data that can be used to log in (create, read, update, and delete). After that, the web system looks for data in the database so that the admin can log in (create, read, update, and delete). Furthermore, database data validation can be performed. There is an inscription (admin / correct password) that can be explained. After that, the Edit Details page appears. The admin can edit the name, photo, content and Instagram there. After the admin makes edits, the data can change on the Solo culinary list page, and the data also changes immediately in the database. In addition, it can be explained by saying that the database cannot find data, so the admin cannot log in, and a login failure notification appears.
3. *Map edit sequence diagrams* there is one actor, namely the manager. The edit maps sequence diagram above shows whether administrators can access the login page by creating, reading, modifying, and deleting. After the database validates the data, the Solo culinary list page can be displayed

immediately. After that, the admin can make edits on the edit map page, where they can change the coordinates on the map. After the admin edits the coordinates, the position points will change on the Solo culinary list page and automatically in the database. If the database matches the web system, the admin will display the culinary list directly, as described by the post (admin/password is correct). After that, you will see the edit details page. Admin can edit the name, image, content and Instagram in edit detail. After the admin makes edits, the data on the Solo culinary list page can change, and the data also changes immediately in the database. In addition, it can be explained that the words "admin/password is wrong" indicates that the database cannot find data, so the admin cannot log in, and a login failure notification appears.

B. DISCUSSION

Figure 2. It is a display of the start page of the Solo culinary website. On the Solo culinary website, there are not only Solo culinary delights but also famous tourist attractions in Solo.

Figure 2. Kuliner Solo Website Page

Figure 3. It is the WhatsApp page of the Solo Culinary website. The purpose of making WhatsApp for each Solo culinary is to make it easier for residents in Solo and outside Solo to contact prices and order culinary places so that they do not have to go to these culinary places to order manually. When a visitor clicks on details, Solo culinary history, address, telephone number, menu, rate, and review will appear. On the details page, visitors can click on the address on Google Maps so they don't experience difficulties when visiting Solo culinary delights. Then, visitors can click "contact us", redirecting them to a web page that will direct them to the WhatsApp page to communicate with sellers and buyers.

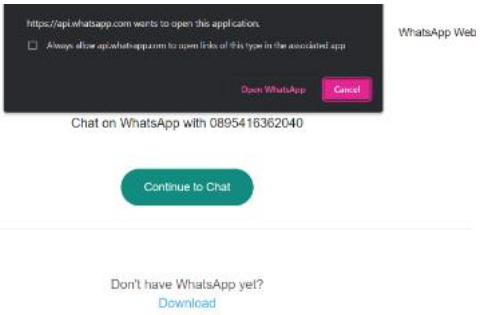

Figure 3. Kuliner Solo WhatsApp Website Page

Figure 4. It is an advanced page for the Solo *chatbot* on the Solo culinary website. On this page, a variety of culinary delights in Solo will appear. Visitors can select and enter options on the Solo *chatbot*. After entering the code, an address and telephone number will immediately appear to find culinary locations in Solo. With the Solo *chatbot*, it will make it easier for visitors to find culinary and souvenirs from Solo.

Figure 4. Solo Culinary *Chatbot* page

Figure 5. It is the Solo culinary bot WhatsApp page. In this WhatsApp bot, when we enter keywords, the bot will immediately answer according to the code sent by the visitor. This Whatsapp bot will make it easier for residents from within and outside Solo. The WhatsApp bot also has features that the admin himself can answer. Suppose there are questions that visitors outside the code numbers and letter codes give. Then the admin can immediately answer questions provided by visitors

inside and outside Solo properly and correctly.

Figure 5. Kuliner Solo WhatsApp Bot Page

C. SYSTEM TESTING

System Testing is an essential stage in the application development process. Testing is, of course, carried out to ensure that all the features on the website are running correctly and functioning properly. System testing is done by testing through interviews. Conduct interview tests to better understand whether the website created helps all residents in the city of Solo and outside the city of Solo in finding Solo culinary delights. Interviews were conducted in the two cities of Solo and Semarang with five Solo Strait owners Mbak Lies, Chairperson of Kedai Reka (a person who works together on the "Chatbot-Based Solo Culinary Tourism Management Information System Web"), one person from Kudus, one person from Cirebon, and one person from Pekalongan. The following are the results of interviews with informants found in one table.

From the interview results, it can be concluded that:

A. Evaluation of Solo culinary websites

The evaluation of the Solo culinary website makes it easier for tourists to go to Solo. Residents outside Solo don't have to bother looking for culinary delights on Google because everything is already there on the Solo culinary website, so it's easier, according to (Debora Octavia Giarto) complete culinary Solo. Meanwhile, according to (Farrell Deo Purwanto) the culinary website for Solo is exciting and can make it easier for residents inside and outside Solo to find complete Solo culinary delights.

B. *Detailed Evaluation of the Solo Culinary website*

From the detailed evaluation, the Solo culinary website has complete features such as culinary history, culinary menus, culinary addresses, telephone numbers, rates and culinary reviews of Solo. According to (Farrell Deo Purwanto) Because there are red dots, pictures of culinary places, culinary addresses, culinary opening hours, and telephone numbers immediately appear. This made it very easy for me to find addresses when the solo culinary was open. With all these features, residents from within and outside Solo can better understand culinary history, culinary menus, culinary addresses, telephone numbers, rates and reviews of the selected culinary delights.

C. *Evaluation of the Solo Chatbot*

The evaluation of the Solo chatbot, according to (Hosiana Indah Berlianti) certainly makes it easier because the Solo chatbot, it makes me understand better, and there's no need to have trouble finding Solo culinary delights one by one. Because in the Solo chatbot, there are instructions when choosing the code provided, proving that residents from within and outside Solo are very happy because there is this Solo chatbot. This Solo chatbot sounds when you type in the keyword "Solo". In this Solo chatbot, there are complete Solo culinary delights and Solo souvenirs. Of course, this will make it easier for residents from within and outside Solo when accessing this Solo chatbot. Meanwhile, according to Dhian Krisna Wardani, it has been good and helpful for residents in and outside Solo. The researcher suggests whether the top 3 to top 5 writing can be added to the Solo chatbot. This will make it easier for visitors

to the Solo culinary website to choose culinary delights, from delicious to ordinary.

CONCLUSIONS

From the research that has been done, it is concluded that:

1. An easy way for visitors to access the chatbot-based Solo culinary tourism SIM web is by accessing monica.systemformasi19.com/SkripsiSolo. On the main page, there is a map image in which there is a red dot, inside the red dot, there is a culinary name, picture, address, telephone and details. When a visitor clicks on the address, the Solo Culinary location will appear, visitors can click contact us, and the Solo culinary WhatsApp will appear. When visitors click details, culinary history, menus, rates and reviews will appear. This SIM website is helpful for residents outside and inside Solo to find culinary specialties in Solo.
2. In implementing the Solo chatbot and WhatsApp bot using a program called Program-O. Program-O is an implementation of an AIML bot written in PHP. So implementing the O-Program on the Solo chatbot can increase efficiency on culinary websites because visitors can more easily search for Solo culinary delights, and the Solo chatbot can answer questions and answers according to the number code provided. Implementing the Solo chatbot and WhatsApp bot makes it easier for visitors to find the desired location on the chatbot-based Solo culinary tourism SIM web.

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