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Developing Recommendation Website to Enhancing Promotional for Micro Small Medium Enterprises in Yogyakarta

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ABSTRACT

The rapid advancement of technology has opened new opportunities for Micro, Small, and Medium Enterprises (MSMEs) to promote their products to a broader audience. This research aims to assist MSME owners in enhancing product promotion through the development of a social media-based website. The platform leverages user activity data to generate personalized product recommendations, helping businesses connect with potential customers more effectively. Key features of the website include viewing, liking, and commenting on user-uploaded content, as well as content upload capabilities. These features foster transparency in public opinion about MSMEs, enabling business owners to use feedback to improve product quality. The website was developed using the System Development Life Cycle (SDLC) with an Agile methodology, ensuring a systematic and iterative development process. This platform aims to provide promotional opportunities for MSME owners while also offering the community food recommendations in the Yogyakarta area.

Keywords: *MSMEs, Product recommendation, Website development, Business promotion, Social media*

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INTRODUCTION

The rapid advancement of technology has significantly influenced various aspects of human life in this digital era, particularly in the realm of information sourcing. The integration of digital technologies into everyday activities has transformed how individual access, process, and utilize information. For instance, the development of broadband infrastructure and digital applications has created a robust framework for the digital economy, facilitating easier access to information and resources (Winendra et al., 2024). This transformation is not merely about technology itself but also encompasses the structural changes in economic processes and business models that technology fosters (Andhayani et al., 2020). The rapid advancement of technology has significantly influenced people's lifestyles, particularly in the culinary sector. A notable trend is the increasing preference for ready-to-eat meals over home-cooked food, largely facilitated by food

delivery platforms such as GrabFood. This shift can be attributed to several factors, including convenience, time constraints, and the changing dynamics of consumer behavior.

Research indicates that the COVID-19 pandemic has accelerated this trend, as many individuals have turned to delivered foods due to lifestyle changes associated with social distancing measures. A study found that there was a marked increase in the consumption of convenience foods, including delivered meals, during the pandemic, as people sought to minimize physical activity and maximize convenience in their daily routines (Kim et al., 2022). And with the pandemic where many people lost their jobs influences the number of people who start businesses in the culinary sector. Starting a food and beverage (F&B) business presents numerous challenges that can significantly impact both the initial setup and ongoing operations. Entrepreneurs in this sector often encounter various barriers, including financial constraints, regulatory hurdles, and intense market competition. These challenges are exacerbated for small businesses, which frequently struggle against established competitors that possess greater resources and market presence.

Market competition is another critical factor affecting the viability of new F&B businesses. The industry is characterized by a high level of competition, with numerous established players dominating the market. Small businesses often struggle to differentiate themselves and capture market share, as they compete against larger firms that benefit from economies of scale and established brand recognition (Chriqui et al., 2013).

Moreover, the impact of digital platforms on the F&B industry cannot be overlooked. While these platforms provide opportunities for visibility and customer engagement, they also intensify competition as more businesses enter the market. Entrepreneurs must leverage digital marketing and social media effectively to stand out in a crowded marketplace (Goh & Sari, 2023). The ability to adapt to changing consumer preferences and utilize technology for operational efficiency is crucial for survival in this competitive landscape (Taber et al., 2015).

Micro, Small, and Medium Enterprises (MSMEs) are increasingly recognizing the necessity of utilizing various marketing materials rooted in information technology to effectively introduce and promote their products. The integration of social media, websites, and e-commerce platforms has become essential for MSMEs to enhance their visibility and reach potential customers. Research indicates that MSMEs that adopt creative digital marketing strategies can significantly improve their market presence and sales performance. For instance, Suryawardani highlight that MSMEs in Bandung have successfully implemented digital marketing strategies through social media and e-commerce, which has led to better communication with their target markets and fulfillment of market needs (Suryawardani et al., 2021). This assertion is further supported by Mas'Ud, who emphasize that the level of e-business adoption directly correlates with improved performance in terms of product sales and marketing for MSMEs (Masud et al., 2022).

Moreover, the role of technological innovations in enhancing operational efficiency cannot be overstated. Triwahyono notes that access to data and analytics enables MSMEs to better understand customer behavior and market trends, allowing them to adjust their strategies accordingly (Triwahyono et al., 2023). This capability is crucial for MSMEs as it facilitates informed decision-making and product development that aligns with consumer preferences. Puspita also underscores the transformative impact of digital marketing in the business development of MSMEs, asserting that digital platforms are vital for increasing consumer familiarity with their products (PUSPITA & RAHAYU, 2023).

The challenges faced by MSMEs in marketing, such as limited resources and technological literacy, necessitate targeted support and training. For instance, Rachmawati discusses the importance of digital marketing in increasing sales through social media and e-commerce, while also acknowledging the barriers that MSMEs encounter, such as a lack of understanding of digital marketing tools (Rachmawati, 2024). Furthermore, Afandi emphasizes that having an online presence is crucial for MSMEs to leverage digital technology effectively, which can significantly enhance their competitiveness and sales (Afandi, 2023).

The use of digital platforms is very important, especially in an era where all sources of information can be obtained through digital media. Digital platforms provide comfort and convenience that cannot be found in print media. The ease of getting information anywhere anytime and relatively cheap access attracts people to use digital platforms. With this digital platform, people can easily communicate with others even though they are separated by a long distance through social media. The use of social media is very much favored by many people today. With this social media they can interact with other people who are not even known. With this social media, people who don't even know each other can communicate easily. They can easily provide information about what is happening around them with people who are in distant places though.

Therefore, researchers developed a social media-based website that is expected to help MSMEs owners in promoting their selling goods. In this developed website, business owners and the community can connect with each other. Business owners can upload content related to their selling goods and the public can see and comment on uploads made by business owners. Not only business owners who can provide information on a selling goods, but the community can also provide recommendations related to selling goods by uploading the same content as the business owner does. With this website, food recommendations will be collected in one place so that it will make it easier for the wider community to access food recommendations in Yogyakarta.

METHOD

This research uses the System Development Life Cycle (SDLC) method. The System Development Life Cycle (SDLC) is a structured methodology employed in the development of software systems, encompassing various phases that guide developers from conception to deployment. The SDLC typically includes stages such as analysis,

design, implementation, and testing. Which are essential for ensuring the successful delivery of software products (Riyadhi et al., 2023). This SDLC uses Agile Method which is a prominent framework within the System Development Life Cycle (SDLC) that emphasizes flexibility, collaboration, and iterative progress. Unlike traditional methodologies, Agile promotes a dynamic approach to software development, allowing teams to respond swiftly to changing requirements and stakeholder feedback. This adaptability is crucial in today's fast-paced technological landscape, where customer needs can evolve rapidly throughout the development process (N. et al., 2018; Nerur et al., 2005).

The first stage carried out by researchers is analysis. At this stage the researchers observed the problem directly by conducting interviews with MSMEs owners. This interview stage was conducted by researchers to find out about the problems faced by MSMEs owners. In addition to conducting interviews with MSMEs owners, researchers also conduct research by looking at community behavior related to today's technological advances. By doing these activities, it helps researchers to identify requirements for the website such as target audience, content to provide, and how to interact with users on the website.

The second stage carried out by researchers is system design. At this system design stage, researchers make a detailed plan of how the system will be built. The main features will be developed first to ensure the most important parts of the system run smoothly. Followed by database design to determine how many actors will be involved in existing features. Not to forget, user interface design is also carried out so that later the system made will look attractive and easy to use by users.

The third stage is implementation. In this implementation process, the system begins to be built in accordance with the design that has been made before. In this implementation process, apart from building a website in accordance with the design, it also asks for feedback from several people who researchers ask for their opinions about the features in the system that researchers develop. Later the feedback given by some of these people will be used by researchers to improve the system that is being made.

The last stage carried out by researchers is system testing. In this system testing, the website functionality is monitored in detail to ensure that the system functions in accordance with the design that has been made previously. Website performance is also monitored carefully to ensure it has good performance. The website is also launched but can only be accessed by certain people who act as testers. Feedback is also given by the testers and the feedback is also taken into consideration to improve the quality of the website that has been made.

FINDING AND DISCUSSION

Analysis

In this analysis stage, it began with researchers going directly to several MSMEs in the Yogyakarta area. Researchers conducted short chat sessions with several MSME owners to find out what problems were experienced. After a brief chat conducted by researchers with several business owners, problems can be drawn, namely traders having

difficulty in selling their merchandise. Most of the business owners complained that their turnover had decreased, and there were even new business owners who were forced to reduce their food stock because they had a lot of goods left after a day of selling. They stated that buyers who used to buy directly from sellers now prefer to use apps like Grabfood because many big business owners do big discounts on the app. This has resulted in many MSME owners losing out to well-known big businesses. Many of these MSME owners experience limitations in their capital, so to do promotion and advertising they do not have funds anymore. Even most of these small business owners have entered old age so that they are no longer able to register their business on applications such as Grabfood due to their old age, so that they are no longer able to learn to use technology.

System design

At the system design stage, researchers decided to create a website-based social media. The decision to make social media was taken because researchers wanted there to be interaction between MSME owners and the community and with this website application it will make it easier for users to access the application from many platforms. In this website, in addition to business owners who can upload content, the community can also do the same so that the community can also provide their opinions. With this freedom to upload content, the exchange of information that occurs will be more diverse. This can also affect the process of advertising goods owned by business owners.

On this website, there will be a page that will display various kinds of food-related content. The show page will be divided into four types based on the sorting done. The first is latest page. This latest page will display all content that has been uploaded by all registered users based on the latest time the content was uploaded. Then the second is recommended. On this recommended page, the content displayed will be in accordance with the activities carried out by each user. This recommended page will only display as many as five posts each based on each existing category. Then the third is the most watched page. This page will display content based on the watch count obtained from users. The last is most liked. This most liked page will display content based on the like count obtained from users registered on the website.

Users do not need to register and login if they only want to see the latest page, but if they want to see other pages on the website, users are required to register and login first. The pages that users can visit after logging in are post content, user profile, other user profile, recommended page, most liked page, and most watched page. Users can also give likes and comments after logging in.

Implementation

In this implementation section, researchers build a website according to what has been designed in the system design process. Researchers use the Laravel framework with the MySql database in the process of developing this application. The website will consist of several sections, namely landing page, content page, profile page, and auth page.

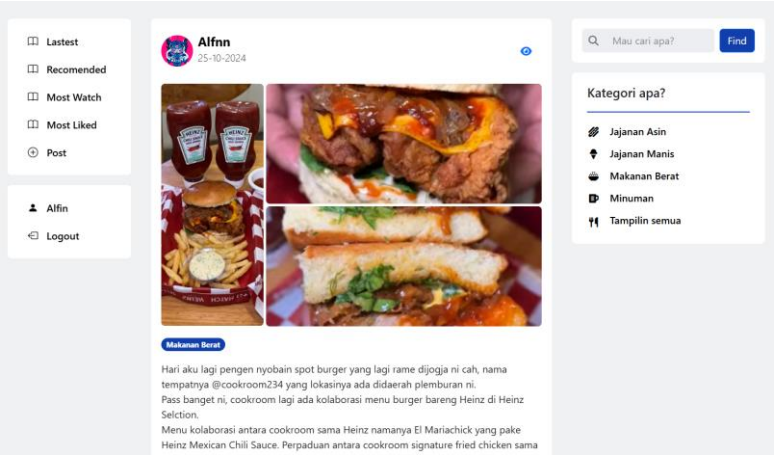

Figure 1. Latest page

The first is the appearance of the latest page which is used as a landing page as well as a content page. This latest page will display content based on the most recent content uploaded by all users who have registered on the website. On this latest menu there are three separate containers. On the left there is a navigation menu. In this navigation menu there is latest which will direct to the latest content or landing page. Then the recommended menu which will redirect to the recommended page. Then most watched which directs to the most watched page. Then most liked will display the most liked page. Then the post menu will direct to the post menu where users can upload content. Then at the bottom is the login and logout menu. The middle container displays content that has been uploaded by other users. And the right is a container that displays categories that can be selected by the user. When the user chooses one of these categories, the content that will be displayed will be in accordance with the category that has been selected.

Figure 2. Recommended page

Then the recommended menu will display content that has been uploaded by the user before but the selection of content displayed will be adjusted to the user's activities. This content selection will be selected according to the content category seen and liked by

the user. Content selection will be randomized every six hours. And the selected content is content that is liked by other users who also liked the same content before.

Figure 3. Most watch page

Then this most watch menu will display content that has been uploaded by other users. However, on this most watch menu, the content displayed is in accordance with the most watches given by the user. Also the content displayed will be as many as five in each category.

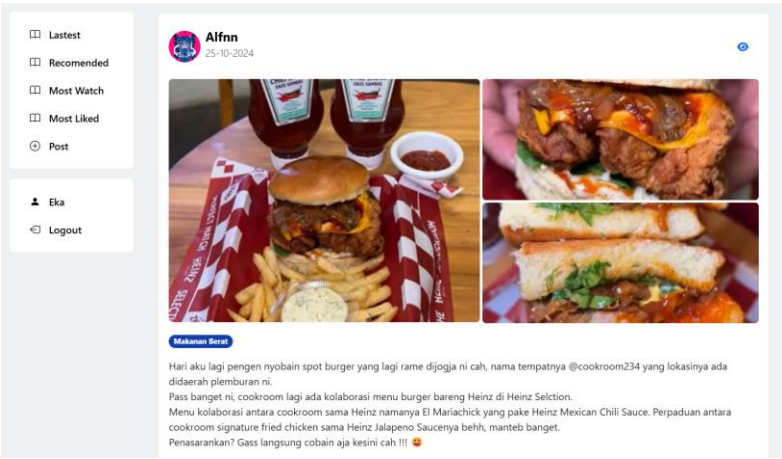

Figure 4. Most liked page

The next menu is most liked. This most liked menu will display content with the most likes given. The content on this most liked menu will also change every six hours. This menu will display five contents each based on each category.

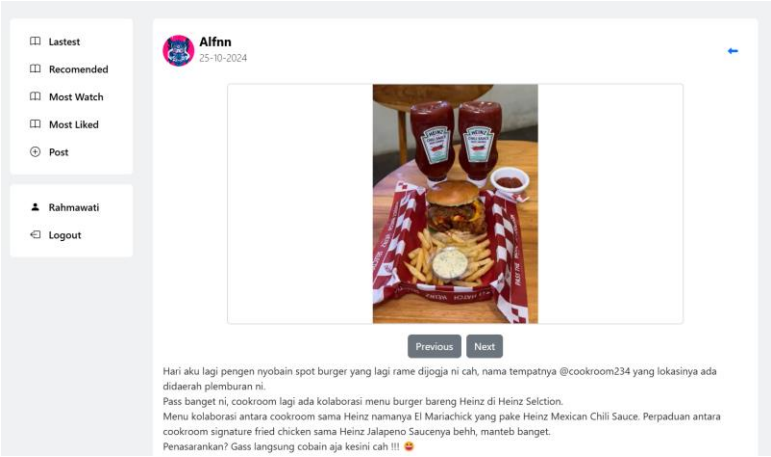

Figure 5. Single content page

Users can also view only one content. In the process of viewing one content, users can like and comment on existing content. If you want to give like to the content, the user can click in love button, and the like count of the content will immediately increase. And for giving comments has a minimum limit of one character with a maximum of 300 characters.

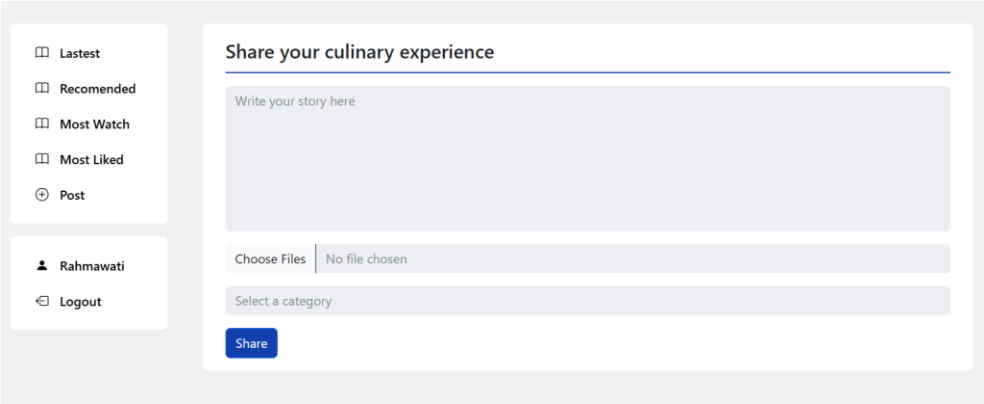

Figure 6. Upload content page

Then there is a menu for uploading content. On this menu there will be a section for adding captions. As mentioned in the system design section, on this content upload menu users can upload captions, images, and select categories. In the caption section, users can provide a maximum of 1000 characters with a minimum of five characters that must be given. In the image upload section, users can upload images with a maximum of four images with a maximum file size of 2MB. This image upload section is not required so users can also create posts without images. Then in the category selection, users are required to select the category that will be associated according to the given post.

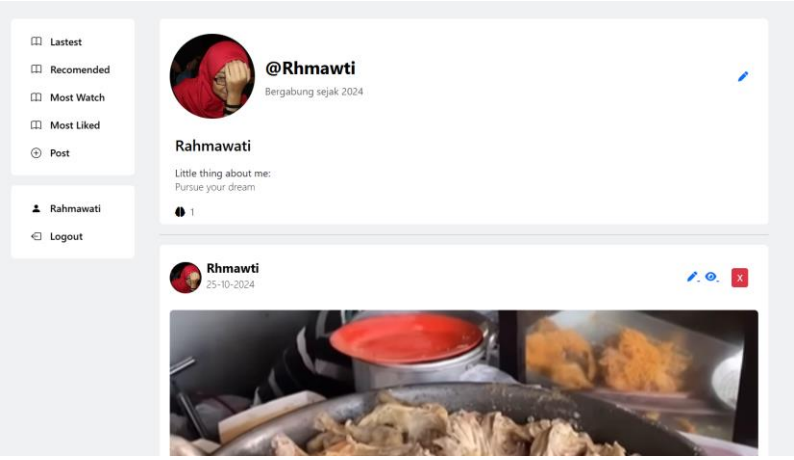

Figure 7. Profile page

Users can also view other users' profiles and their own. In this profile menu, users can see other users' profiles such as usename, user joining date, username, and bio. In this menu the user can also see what posts have been shared by that user. And if the user visits their own profile they will be able to edit their profile and also can edit or delete their own uploaded content.

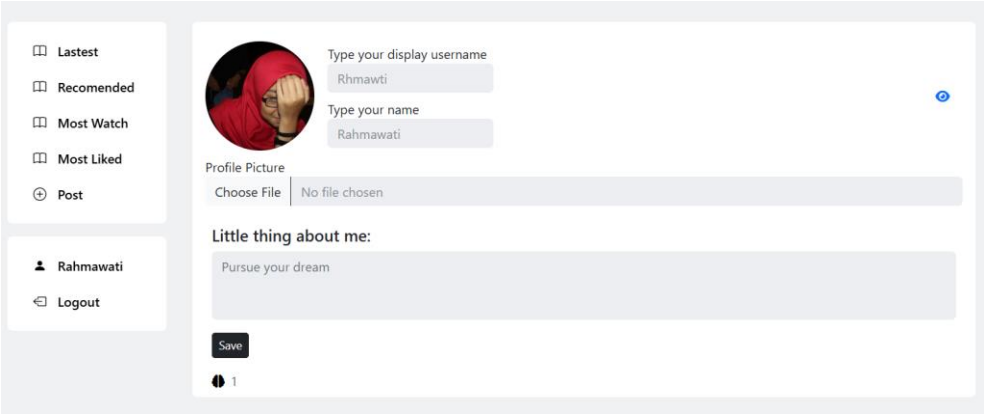

Figure 8. Edit profile page

Profiles that can be changed by users include profile photos, user names, and bios. The user name change has a minimum of four characters with a maximum of 40 characters. Meanwhile, the bio also has a minimum of four characters with a maximum of 300 characters.

Figure 9. Edit uploaded content

Users can also edit the captions of previously uploaded content. However, the content that can be edited is only the caption. And for this caption replacement requirement, it is also the same as when uploading at the beginning.

System testing

In this system testing section, researchers conducted tests on the website that had been created. Some of the tests carried out are creating a new user, then logging in, uploading content, giving likes, giving comments, visiting the latest menu, visiting the recommended menu, visiting the most watched menu, visiting the most liked menu, visiting other user profiles, visiting researcher profiles, changing profile data, changing captions, then logging out.

Table 1. System testing table

NO	Scenario	Expexted outcome	Status
1	New user creation.	Save login data into database.	Passed
2	Log in into website using user data that has been created.	Retrieve login data from database.	Passed
3	View a variety of existing content.	Retrieve content data from database and display it for user.	Passed
4	Perform content upload.	Save text data and image data to database.	Passed
5	Performing a like to a content.	Save like data into database.	Passed
6	Post comment in a content.	Save comment data into database.	Passed
7	View the other user profile menu.	Get profile data from database.	Passed
8	View user own profile menu.	Get profile data from database.	Passed
9	Edit user own profile data.	Change profile data and profile image then save the new data into database.	Passed

10	Edit content that has been uploaded by the user.	Change content text data and save new data into database.	Passed
11	Delete content that has been uploaded by the user.	Delete content data from database.	Passed

CONCLUSION

As a result of this research, the researcher successfully developed a Food Recommendation Platform. This platform was developed to increase sales of MSMEs in Yogyakarta. Business owners can easily promote their merchandise by simply making a post on this MSMEs platform and later other people will be able to see the business owner's post. Not only business owners who can feel the benefits of this platform, but the wider community can also feel the benefits. People can see various food recommendations in the Yogyakarta area with many variations, ranging from main dishes to desserts. The prices offered on this platform also vary depending on the business owner, but are certainly affordable considering that those who sell on this platform are MSMEs. It's just worth noting that the quality of content on this platform is very dependent on how users on this platform provide recommendations. The current use case in this research is food recommendation which is used as a limitation in this research. Of course, there is still a lot of room for development of this research such as the addition of video upload features, the use of digital maps to find out the location of business places, and the addition of delivery order features. The existing content can also be developed not only in the scope of food, it can also be developed as a community discussion on various cases such as games, software, or other things.

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