

User Flow Design Research for a Culinary Application Prototype to Improve Customer Satisfaction in Balikpapan

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ABSTRACT

Balikpapan's economic growth is predicted to rise to 4.94% in 2022 from 4.56% in 2021. The Business Field for Providing Accommodation and Food and Drink has performed well, helping the city's economy. In Balikpapan, 23% of the creative economy is in the culinary sector. Culinary tourism is popular in the city, although finding gastronomic information, especially for foreigners, can be difficult. As a result, there is a need for a culinary application that can provide information about Balikpapan's different culinary delights. Prior to developing a culinary application, the initial step entails the creation of a user flow. This user flow aims to establish a development team for the purpose of creating culinary apps that align with user requirements and customer satisfaction. The process of developing a user flow encompasses multiple steps, including literature research, understanding context of use, specify user requirements, and design user flow solution. Several elements and processes that can be included in a culinary application have been identified through research conducted with 30 entrepreneurs and 30 food enthusiasts. Ratings, delivery services, promotions, menus, favorite menus, best seller menus, payment options, order services, training, reports, maps, and other features are available. By displaying the user flow and offering step-by-step instructions for users, this research serves as the first stage in constructing the culinary application. The user flow will aid in communication and demonstrating how the culinary application functions. The findings will also be used to develop a culinary application prototype that demonstrates the user interface and user experience.

Keywords: user flow; culinary application; prototype; tourism; Balikpapan

1. INTRODUCTION

According to BPS Balikpapan, economic growth in Balikpapan would increase by 4.94% in 2022. This is higher than the 4.56% increase in economic growth in 2021. The positive performance achievements that occur in virtually all business fields in Balikpapan, one of which is the Business Field for Providing Accommodation and Food and Drink at 9.56% (Badan Pusat Statistik Kota Balikpapan, 2023), will boost Balikpapan's economic growth in 2022. According to the results of a survey done by the Balikpapan Government, the culinary sub-sector is the most dominant creative economy sub-sector in Balikpapan, accounting for 23% (Pemerintah Kota Balikpapan, 2021).

Balikpapan is an Indonesian city with a diverse food scene. Culinary is inextricably linked to tourism and can be used to promote regional distinctiveness (Dewi, 2022). The popularity of culinary tourism in Balikpapan is growing, and some tourists return to the city on a regular basis. However, collecting gastronomic information is difficult, particularly for tourists in Balikpapan (Gozali T. A., 2022). According to Kadir (2014), the provision of a comprehensive and cohesive gastronomic information system is of utmost importance for travelers. In addition, from the standpoint of business actors, digital marketing is considered essential (Wijaya, 2020). This is due to its ability to effectively reach a broader target market, facilitating the dissemination of information and promotional activities (Budi, 2021).

Not to mention that Balikpapan is the archipelago's National Capital (IKN), thus it must prepare for digitization in a variety of areas. There is currently no webpage that reviews information about culinary delights in Balikpapan. Meanwhile, in the contemporary digital era, information speed and ease of access are critical considerations, particularly in terms of travel and tourism, particularly gastronomic tourism. As a result, a culinary application that can accommodate all MSME culinary delicacies in Balikpapan is deemed necessary. Before developing an application, the initial stage is to design the user flow. This method is a behavioral modeling of the to-be-created information

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system that can define the interaction between the user and the system through the system's storyline (Pramesti, 2022). User flow plays an essential role in ensuring that the application effectively and efficiently meets user and business needs. This user flow ensures that the application procedure is consistent with user expectations and business objectives.

2. LITERATURE REVIEW

2.1 Indonesia's Culinary Tourism Potential

This study revealed that culinary tourism is on the rise, but the cities of Tangerang and Padang lack adequate culinary knowledge. Other obstacles hinder culinary tourism in numerous regions. This study also revealed that numerous academicians have utilized Android websites and applications to study information systems, particularly internet-based systems. Geographic information from the system shows travelers where to locate culinary tourism destinations. With an online system, visitors can access information in real time. Internet and smartphone usage is pervasive and difficult to disregard in the 4.0 era, making internet-based systems more effective and efficient (Sunaryo, 2019).

2.2 The perspectives and experiences of tourists in Balikpapan's Culinary Tourism

The study examines Balikpapan's culinary tourism. Food tourism ignores tourist expectations and operates without partnerships, according to the writers. The study explores tourist viewpoints and experiences in culinary tourism development because the literature ignores them. In culinary tourism areas, travelers have strong opinions on local food and a thirst for delightful meals, according to a poll. The study enhances tourist expectations-based culinary tourism development literature and helps stakeholders utilize resources. The study found that travelers like culinary tourism destinations' native cuisine (mean score = 4.53, standard deviation = 0.51). Tourists also like tasty food (average score = 4.34, standard deviation = 0.51). Food texture, scent, visual presentation, nutritional content, infrastructure, service, and social space also scored well. The study found that culinary tourism goes beyond taste. Healthy meals, atmosphere, pleasant infrastructure, and excellent service average high. Tourism management must also improve personnel performance, the environment, and tourist interactions to improve the visitor experience (Gozali T. A., 2022).

2.3 Digital Customer Experience's Impact on Customer Satisfaction and Loyalti

This paper examines the impact of digital customer experience on consumer loyalty and satisfaction among OVO users in Ogan Komering Ulu Regency. In the current digital era, consumer experience has become a crucial component of marketing strategy. Smartphones are the preferred method for information access, purchases, and subscriptions. Therefore, businesses must improve the accessibility of their digital information channels, including social media accounts, websites, and company-owned applications. According to the findings, digital customer experience has a significant impact on OVO consumers' customer satisfaction. This is indicated by the fact that the t value of 12,048 exceeds the t-table value of 1.96. The digital consumer experience has a significant impact on OVO users' customer loyalty. This is indicated by the t value of 2.992, which is greater than the t-table value of 1.96. Finally, consumer satisfaction has a significant impact on OVO users' brand loyalty. This is indicated by the fact that the t value of 6,616 exceeds the t-table value of 1.96. These results support the hypothesis that customer experience influences customer satisfaction and loyalty positively, and that customer satisfaction influences customer loyalty positively (Rahayu & Faulina, 2022).

2.4 User Flow in User Experience Design

An application requires not only a visually appealing user interface, but also an excellent user experience in order to satisfy the users who operate it. However, the end-user is frequently placed at the conclusion of the design process. Without adequate knowledge of the user experience, an application may fail to satisfy the user's requirements. Therefore, it is crucial to comprehend the customer's experience and journey over time. In addition, the process of designing a user interface and user experience, including research, analysis, design, and implementation, is discussed. It emphasizes the significance of grasping the perspective of the end-user during the design process (Wisesa, 2021). User flow is a particular aspect that determines user experience. The stages or actions a user takes when using an application from the start up to the goal is completed are referred to as user flow (Annette Kathleen, 2021). When using an application or website, the user will travel down various paths. This flow is also known as the user flow. User

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flow is a textual and digital visual depiction of the flow or path that a user can take when using an application (Afani Kurniawan, 2021). Visual diagrams or flow charts are commonly used to describe user flow. The diagram begins when the user enters the first page of the app and concludes after the user has achieved the goal, such as successfully purchasing a product. User Flow's role and benefits include increasing user convenience when using an application or website, assisting in the evaluation of the application interface that has been designed, and facilitating communication with users about how the application works in an efficient form by providing step by step details about what the user will see and do on the application.

3. METHOD

There are four steps in the user flow design of this culinary application prototype:

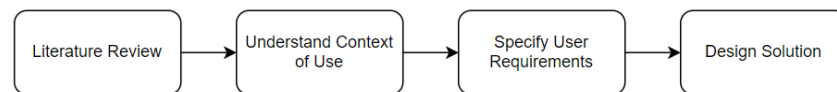


Fig. 1 Research Methods

1. Literature Review: This research began with a literature review to facilitate its completion and maybe solve existing issues. Finding references in books, journals, articles, and the internet linked to the research problems was literature studies.

2. Understand Context of Use: This phase gives the research team a complete understanding of contextual elements affecting system use. Internet and other reference sources are used for observations.

3. Specify User Requirements

During this phase, an examination of users' functional requirements is conducted through the utilization of questionnaires and interviews. The questionnaire is completed by individuals who possess the characteristics of application users in the business and culinary fields. The completion of the questionnaire enables the identification of a comprehensive set of system requirements and features for the application.

4. Design Solution

During this phase, a user flow is developed to describe the execution of the user's functional requirements within the application. The present user flow delineates the sequential steps that users will undertake within the program in order to accomplish their objectives. Typically, the journey commences at the initial location and concludes at the final destination.

4. RESULT

4.1 Context of Use

The context for culinary application's user flow is determined by observations: tourists can choose restaurants that suit their tastes, tourists can enjoy better food, Balikpapan tourists can easily sample native cuisine, and digital marketing can boost Micro, Small, and Medium Enterprises (MSMEs) sales. Based on the contextual requirements of culinary application's user flow, the individuals who will be engaged in the process can be identified as follows:

- a. Business actors (MSMEs) engage in the establishment, operation, and marketing of restaurants, assuming responsibility for menu creation and the whole management of the establishments they own. The responsibility of business actors includes the updating of menus and the management of transactions processed through the system.
- b. Culinary Enthusiasts: Individuals with a deep appreciation for culinary arts can utilize the service to effectively search for relevant information and conduct transactions pertaining to their desired culinary experiences.

4.2 User Requirements

During the process of comprehending the user context, it has been observed that the application's user base primarily comprises of individuals who possess certain characteristics. These characteristics include being business professionals and culinary enthusiasts who have prior experience with similar culinary applications. The business

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actors are associated with stationary business establishments, while the culinary enthusiasts are aged 17 years or above and are well-acquainted with smartphone usage.

Based on those characteristics, data was collected from 30 entrepreneurs and 30 culinary enthusiasts. Where entrepreneurs' and culinary enthusiasts are asked a variety of questions to figure out their requirements for culinary applications. There were 17 statements out of the 27 provided to business actors that obtained an average score above 4, resulting in numerous functions were produced for business actors based on these 17 statements:

Table 1
Feature Mapping based on the functional needs of Business Actors

No	Statements	Score	Functional Needs	Features
1	Business actors agree that customer discomfort will have a negative impact on their business	4.20	Business actors can view customer endorsements.	Rating
2	Business actors agree that they feel helped by customer reviews or testimonials on applications or websites	4.30		
3	Business actors agree that their business becomes busy due to the influence of recommendations from customers to other people	4.00		
4	Business actors agree that it is necessary to offer delivery or in-store pickup services in applications or websites	4.00	Business actors offer delivery options for orders	Pickup / Delivery
5	Business actors agree that they need to plan and promote special events or discounts on applications or websites	4.00	Business actors require marketing media	Promotion
6	Business actors agree that determining sales target can be in line with community needs	4.40		
7	Business actors strongly agree that social media is important as a place for promotion	4.60		
8	Business actors agree that there is a favorite menu feature for consumers which can help business actors differentiate from other culinary businesses	4.00	Business actors can discover their best-selling and favored menus.	- Menu - Favorite Menu - Best Seller Menu
9	Business actors agree that it is necessary to know how many consumers are interested in their culinary business.	4.10		
10	Business actors agree that ease of payment and transactions is very important	4.30	Ease of transaction	- Payment Method - Balance
11	Business actors agree to handle complaints/problems quickly	4.10	Business actors can swiftly respond to customers	- Messaging Service - Training
12	Business actors strongly agree that customer service is important	4.55		
13	Business actors agree that it is necessary to know the sales/order history every month	4.40	Accessibility of periodic reports	Report
14	Business actors record/monitor business income and expenditure reports	4.40		
15	Business actors agree that the presence of business locations on maps makes it easier for consumers to find out the location of their business	4.00	Ease of location search	Maps
16	Business actors agree that it is necessary to sell products online	4.35	Ease of order processing	- Order - Transaction
17	Business actors agree that they need to differentiate themselves from competitors by utilizing applications or websites for marketing	4.00		

There were 9 questions out of the 14 provided to culinary connoisseur that obtained an average score above 4, resulting in numerous processes were produced for culinary connoisseur based on these 9 questions:

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Table 2
Feature Mapping based on the functional needs of culinary connoisseur

No	Culinary Connoisseurs' Needs	Score	Functional Needs	Features
1	Consumers strongly agree that they find it helpful if there is an application that can help order culinary delights.	4.43	Ease of finding local culinary delights	- Nearest Resto - Order History
2	Consumers agree with the variety of food and drink menus in culinary businesses	4.43	culinary variety and information	- Menu - Favorite Menu - Best Seller Menu
3	Consumers agree that they need to know information regarding menus, prices and available promotions before shopping	4.33		
4	Consumers agree that they currently find it difficult to make payments due to the lack of choice of payment methods	4.47	Ease of transaction	- Balance - Payment Method
5	Consumers agree to be aware of available promotions or discounts	4.17	availability of discounts	- Promotion
6	Consumers agree that it is important to provide feedback in the form of input or suggestions to business actors regarding food/drinks, services and conditions of culinary businesses	4.33	the availability of evaluations from previous customers	Rating
7	Consumers agree that knowing the opening and closing times and schedules of culinary locations is important	4.00	availability of information about restaurants	Profil
8	Consumers agree that using GPS makes it easier to find culinary locations	4.05	Ease of location search	Maps
9	Consumers agree that online provision of restaurants/food places is important.	4.00	Ease of order processing	Cart

4.2 User Flow Design

The user flow is formulated to delineate the implementation of the user's functional requirements within the application. The current user flow outlines the consecutive actions that users will perform within the software to achieve their goals. In general, the process of traveling begins at the starting point and concludes at the ultimate endpoint. Based on the results of the mapping analysis of functional requirements and features, the following user flow is described from the perspective of business actors and culinary connoisseurs.

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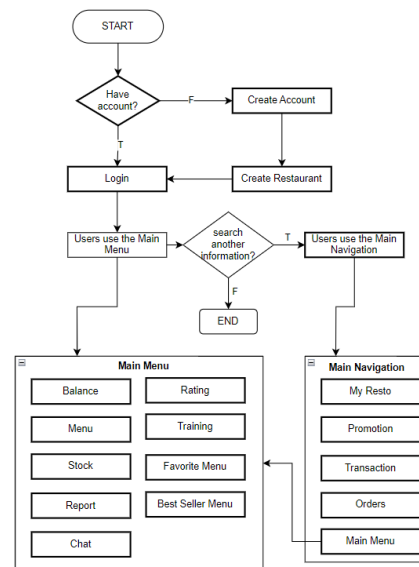


Fig. 1 User Flow Business Actors' Role

This culinary application prototype was created with the fundamental notion that all business actors begin at the same point, namely the login page. If the business actor does not already have an account, he will be directed to create one before registering for the restaurant. The culprit will then navigate to the main page, where they will be able to examine at a glance the features such as balance, menu, stock, reports, messages, ratings, training, favorite menu, and best seller menu. Users can proceed to the features available on the main page or use the main navigation, which includes the features of my restaurant, promotions, transactions, and orders, once business actors have a peek of the features on the main page. Meanwhile, the user flow for the job of culinary expert is depicted in the image below.

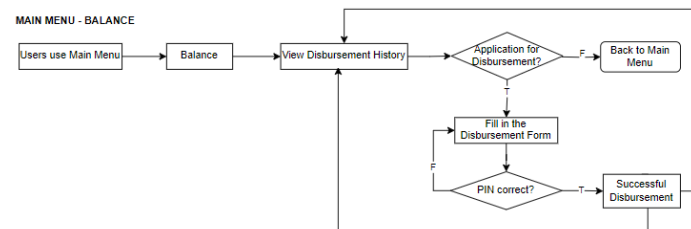


Fig. 2 User Flow Balance Feature

When the user picks the balance option, user can view the history of prior disbursements. If the user wants to make another disbursement request, he can do so by filling out the disbursement form and entering the transaction pin. If the PIN is wrongly entered, the user must refill the disbursement form until the PIN is accurate, after which the distribution will be successful. If the user does not choose to apply for disbursement, he can return to the main menu.

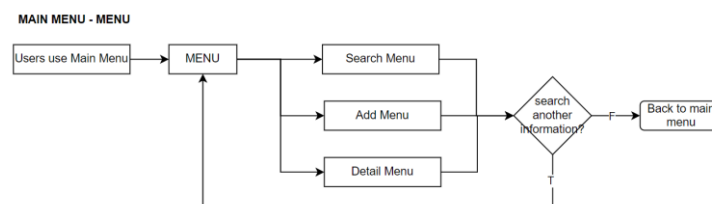


Fig. 3 User Flow Menu Feature

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When the user picks a menu, he can search for menus, create menus, and view menu details. When the user is done searching for further information, he or she can return to the main menu.

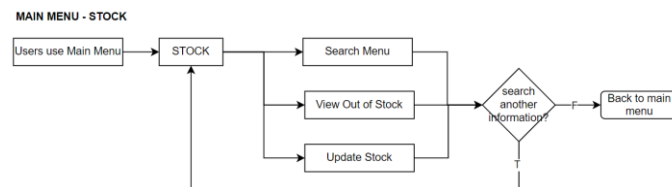


Fig. 4 User Flow Stock Feature

When the user picks stock, he can search the menu, check which menus are out of supply, and update his menu stock. When the user is done searching for further information, he or she can return to the main menu.

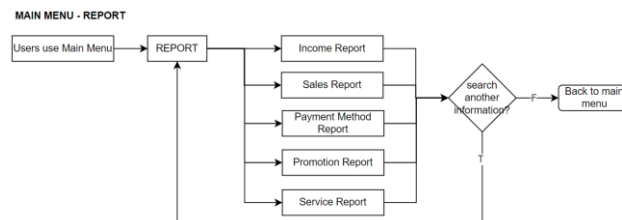


Fig. 5 User Flow Report Feature

When the user selects the report option, he will be able to view reports on his income, sales, payment methods, promotions, and services. When the user no longer wishes to search for additional information, he or she can return to the main menu.

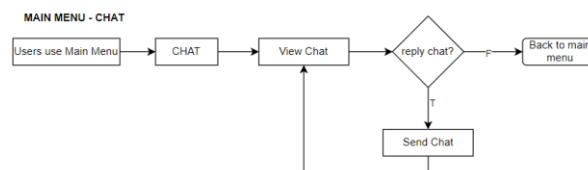


Fig. 6 User Flow Chat Feature

When the user picks the message menu, he or she can view all of the messages that have been received. Users can respond to receiving messages by picking one and submitting a response message. If the user no longer wishes to respond to the message, he or she can navigate back to the main menu.

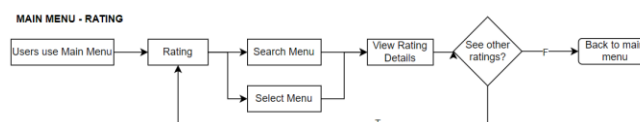


Fig. 7 User Flow Rating Feature

When the user chooses the Rating menu, user can view the rating based on the menu search or choose the menu that appears. Users can view detailed ratings for the menu they previously chose. The user can return to the main menu if they no longer want to browse customer reviews.

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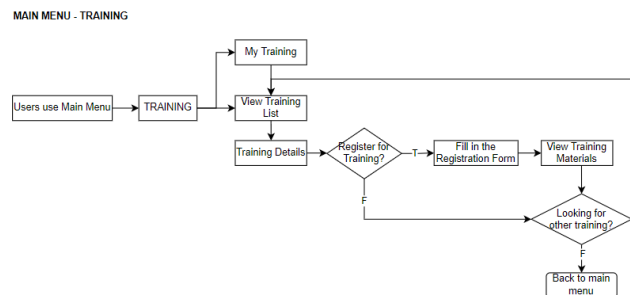


Fig. 8 User Flow Training Feature

When the user selects the training menu, he will see the training he has chosen as well as all available training. By selecting one of the offered training courses, he can view training specifics. If the user wishes to participate in the training, he must fill out the registration form. Following that, users can access the various training resources. If the users want to search for and register for more training, he can do so by selecting the available training and filling out the Return form. If the user no longer wishes to view the training, he or she can navigate back to the main menu.

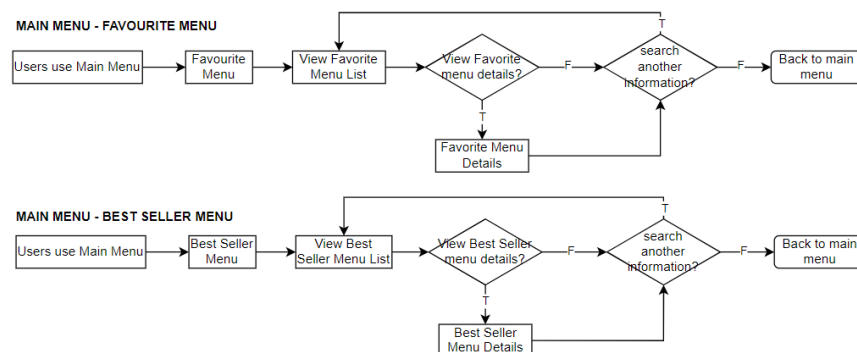


Fig. 9 User Flow Favorite and Best Seller Menu Features

When the user picks the Favorites or Best Seller menu, he will get a list of favorite or best seller menus, as well as details about the menu he previously picked. The user can return to the main menu if they no longer want to browse customer reviews.

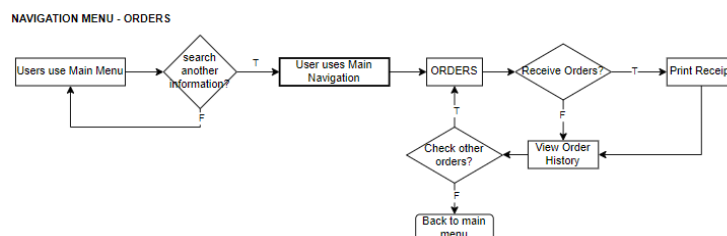


Fig. 10 User Flow Order Features

When there is nothing to see on the main menu, the user can navigate through the navigation menu. For example, under the navigation menu, select the order menu. Users can view orders coming into their restaurant and accept or reject them using this menu. If he decides to accept an order, he can print a receipt and then check the order history up to that point. If he wishes to look at more orders, he can go back to the order list; otherwise, he can go back to the main menu.

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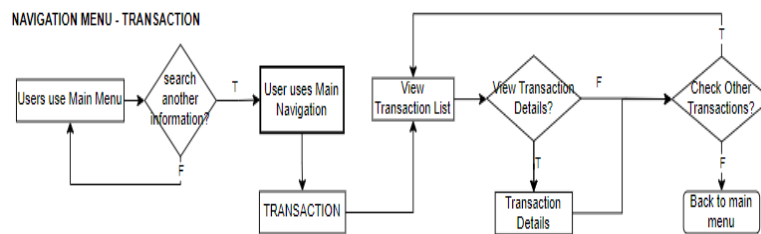


Fig. 11 User Flow Transaction Features

Users can also access transaction features via the navigation menu. Users can see a list of transactions as well as information of completed transactions in this feature. Users can check again and again until they choose to return to the main menu.

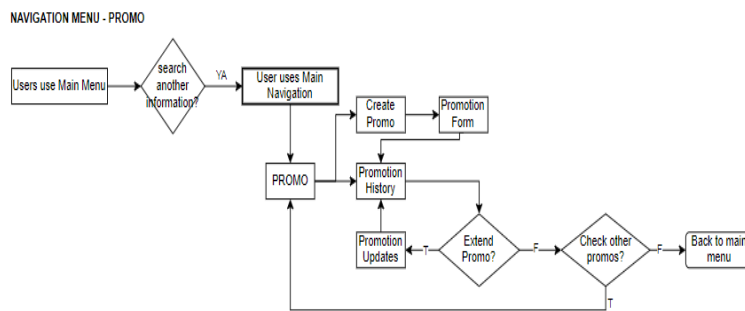


Fig. 12 User Flow Promotion Features

Users can also access the promotional features via the navigation menu. Users can use this tool to create new promotions or to view the history of previously established promotions. If the user wishes to make a new promo, he must first fill out the promo form, and the new promo will be saved in the promo history. Aside from that, users can renew promos from expired promotions. If he no longer want to look at other promotions, he or she can return to the main menu.

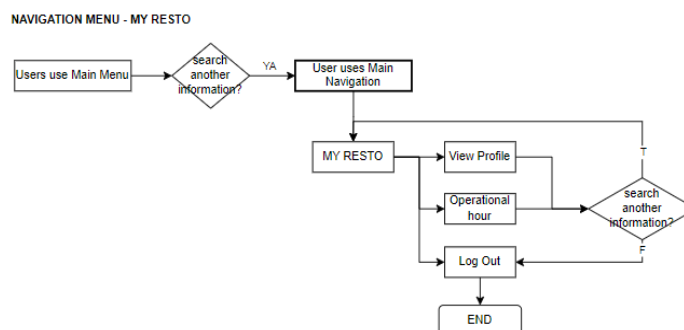


Fig. 13 User Flow My Resto Process

Users can also access my restaurant function from the navigation menu. Users can change their profile and restaurant hours using this tool. Aside from that, if the user wishes to exit the application, he or she can do so by selecting the log out option.

Meanwhile, the user flow for the role of culinary connoisseur is depicted in the image below.

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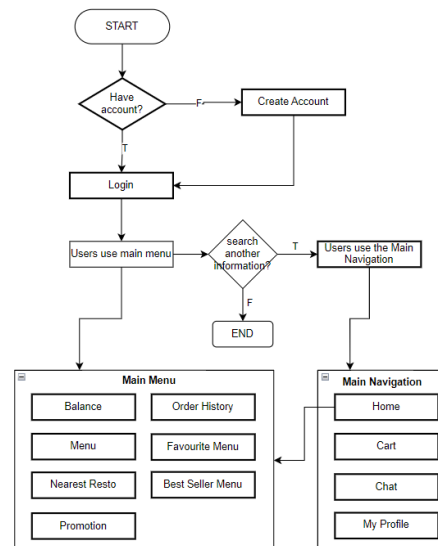


Fig. 2 User Flow Culinary Connoisseur's Role

This culinary application prototype was created with the basic notion that all culinary enthusiasts begin at the same place, namely the login page. If the Culinary Connoisseur does not already have an account, he will be directed to get one. The perpetrator will then go to the main page and look at the features, which include the balance, menu, nearest restaurants, promos, order history, favorite menu, and best seller menu. Users can go to the features available on the main page or use the main navigation, which includes cart, messages, and my profile, after culinary connoisseurs have taken a look at the features on the main page.

5. CONCLUSION

This study aims to determine the user flow of Balikpapan's culinary. The study analyzed data from 30 entrepreneurs and 30 culinary enthusiasts, identifying entrepreneur features such as ratings, delivery services, promotions, menus, payment methods, balances, order services, training, reports, maps, and orders. The culinary enthusiasts can find the nearest restaurant, order history, menu, favorite menu, best seller menu, balance, payment choices, promos, ratings, restaurant profile, maps, and shopping cart. The research is the initial step towards creating culinary applications. This study may highlight the user flow of cooking apps to help explain how they work because it provides step-by-step instructions. As additional research, this user flow can serve as a guide or aid in developing a prototype for a culinary application that satisfies user requirements and business objectives.

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