



Implementation of Payment Gateway in the Mobile-Based Pawon Mbok`E Eating House Ordering System

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ABSTRACT

This paper discusses the implementation of a payment gateway in the mobile-based Pawon Mbok'E eating house ordering system. The integration of a payment gateway into mobile applications is crucial for facilitating secure and convenient transactions. Pawon Mbok'E aims to enhance customer satisfaction by enabling users to order food and make payments seamlessly through their mobile devices. Method research used is development system order mobile based with payment gateway integration. This implementation involves selecting an appropriate payment gateway, integrating it with the existing ordering system, ensuring security measures are in place, and testing for reliability and user-friendliness. The success of this implementation will provide Pawon Mbok'E customers with a streamlined ordering and payment process, thereby improving overall service efficiency and customer experience. Obtained testing reliability with amount respondents there are 65 as well percentage prove 100%, subject This show if 65 respondents That breast milk as well as No there is incoming respondents to type Excluded.

1. INTRODUCTION

In industry culinary, especially among Micro, Small and Medium Enterprises (UMKM) such as House Eat Pawon Mbok'e, implementation technology become crucial for increase efficiency operational and expanding market reach. One of aspect important from development system order mobile based is ability For do transaction payment in a way safe and efficient electronics [1].

In context This is the implementation of a payment gateway in the system order House Eat Pawon Mbok'e mobile -based becomes relevant and important. Payment gateway is solution enabling technology transaction payment online with connect various method payment, like card credit, bank transfer, or digital wallet, with system application.

A number of reason Why implementation of payment gateway in the system order Home mobile based Eat Pawon Mbok'e beneficial are : 1. Convenience Transaction : Customer can do payment in a way electronic through mobile application with fast and easy, without need bring cash or card physique ; 2. Security Transaction : Payment gateway provides layer security addition through data encryption and authentication process , so reduce risk fraud and leaks information ; 3. Improvement Experience Customer : Capability For do payment direct through mobile applications can increase experience customers and deliver impression more professionalism tall for House Eat Pawon Mbok'e ; 4. Monitoring Transactions and Reporting : Payment gateways are also common be equipped with feature monitoring transactions and reporting that enable MSMEs [1] For track payments and analyzing sales data with more Good.

With background behind the implementation of payment gateway in the system order House Eat Pawon Mbok'e mobile -based is not only help increase efficiency operations and experience customers, but also open opportunity for expand business they with reach more customers wide via digital platforms. Researcher attach study previous in the form of a state of art with research conducted: Ningsih, TI, & Sanjaya, CB (2023). Application School Payments Using Tripay Payment Gateway Based on Deep Android context payment, an integrated Android- based mobile application with Tripay payment gateway that is system available notifications remind you of payment deadlines can become alternative effective and efficient solution. With use mobile application parents can do payment with more easy, fast and safe without must come direct to school. and helpful treasurer For make it easier in making report payment of school fees as well as make it easier managing existing data [2]. Rikardo, R. (2023). System Web- Based Tuition Payment Using Midtrans Payment Gateway : Study Case : at Taruna Vocational School Integrated 2. Results of study This is exists something device application created with Language PHP programming and data storage uses a MySQL database so that the tuition payment process uses the Midtrans payment gateway at Taruna Vocational School Integrated 2 becomes more effective, efficient and practical [3]. Lestari, DA, Purnamasari, ED, & Setiawan, B. (2020). The influence of payment gateways on performance MSME finance. Data were collected through questionnaires involving 53 respondents by using normality test, validity test, reliability test, coefficient of determination, and t-test. The result of the t-test and the coefficient of the determination indicates that the Payment Gateway variable influences significantly the financial performance of SMEs measured by sales revenue [4]. Mubarok, AM, & Handriyanti, E. (2021). Planning Online Course Application Using Midtrans API As Midtrans Android Based Payment Gateway is one of payment gateway technology in Indonesia that facilitates transaction payment online with method complete payment such as bank transfers, e-wallets, credit cards, debit cards and others. With utilise second technology above, PPTIK STIKI Malang can increase service learning course and minimize use place, time and costs as well as provide transaction safe and complete payment, so makes it easier public general For access learning course nor do purchase package course [5]. Saputra, O., & Safitri, W. (2022). System Information Administration Payment Donations Based Education Development (SPP). WhatsApp Gateway. The system uses PHP programming language tools and MySQL database. The result of this research is a computerized SPP payment administration system. So that the school administration can control tuition payments more effectively and efficiently. So that this system is very precise and fast in the administration of tuition payments and becomes a reference for other administrations in order to assist the administrative process and improve time efficiency and provide the right information. [6]. Suratna, M.A. (2021). Planning System Information Web-Based School Level Tuition Payments and Using SMS Gateway. This web-based information system was developed using PHP and MySQL, and to display the interface using the responsive design of the Bootstrap Framework. The web-based SPP payment information system and the SMS Gateway were developed using PHP, MySQL, and the Bootstrap Framework. The development stage includes the needs analysis stage, the design stage, the implementation stage and the Test stage. [7].

2. METHODOLOGY

Method research used is development system order mobile based with payment gateway integration [8]. Implementation process involve analysis need system, selection of appropriate payment gateway, development mobile applications, integration with backend systems, as well as testing and evaluation.



Figure 1. Methodology Study

Explanation :

1. The process starts with analysis need system For understand in a way comprehensive what is needed in implementation of payment gateways.
2. If need system No fulfilled, then will return to stage analysis for clarify or adapt need.
3. After need system understood, done selecting the appropriate payment gateway with needs and characteristics business House Eat Pawon Mbok'e.
4. Stage furthermore is development mobile applications based on existing needs identified previously.
5. After Mobile application is complete developed, carried out integration with possible backend systems Already There is Previously at Home Eat Pawon Mbok'e.
6. If integration No walk with OK , then need done adjustment or repair before continue to stage furthermore.
7. Trial and evaluation stage done for ensure that system has walk with good and appropriate with hope before used in a way full.
8. If the results of trials and evaluations satisfactory, then the implementation process considered finished.

In application waterfall method [9] in development system order House Eat Pawon Mbok'e mobile-based, development process will follow steps sequentially from stage beginning until stage end without exists iteration. Following is stages in waterfall method:

1. Analysis Need [10] :
 - Development team do analysis deep to need system order House Eat Pawon Mbok'e.
 - Drafting documents specification covering needs all desired features and functionality, such as booking food, payment, menu management, etc.
2. Planning:
 - Development team designing structure system order in a way whole, incl interface user, architecture system, and database.

- Designing appearance and flow Work mobile application for ensure involvement optimal user.
3. Implementation:
 - Developer start translate design become appropriate program code.
 - Development mobile application starts with build features that have been designed, like page ordering, menu page, page payment, etc.
 4. Testing:
 - After implementation done, team testing will do series testing to mobile application for ensure that all feature works with good and appropriate with specifications.
 - This covers testing functional, testing integration, testing performance, and testing reception user.

3. RESULTS AND DISCUSSION

3.1. RESULTS

Analysis needed system order For House Eat Pawon Mbok'e mobile -based involves understanding deep about need business and needs user. Following is a number of step in do analysis system requirements [11]:

1. Interview with Owner Business:
2. Identify Key Features:
3. Studies Case User:
4. Analysis Condition Functional and Non-functional:
5. Study about Available Technology:
6. Validation Need with Stakeholder Interest:
7. Documentation Need:

Selecting the appropriate payment gateway for system order House Eat Pawon Mbok'e mobile based must be consider a number of factor important. Following is possible steps taken in the selection process:

1. Need Business:
2. Integration with System:
3. Convenience Use:
4. Fees and Charges Transaction:
5. Security:
6. Support Customer:
7. Reputation and Reliability:

With consideration the from a number of provider service choose Mindtrans for payment gateways in the Order System House Eat Pawon Mbok`e Mobile Based. System development is carried out with a number of stages as following:

1. Planning

Planning channel application made using Unified Modeling language (UML), namely Use Case Diagrams, Activity Diagrams, Sequence Diagrams, and Classes.



Figure 2 Use Case Diagram

On picture above, Admin plays a role as actor first to get it access and manage menus in the application cashier restaurant Pawon Mbok'e. Temporary Cashier role as actor both can carry out transaction processes.

1) Admin and Cashier Registration Activity Diagram

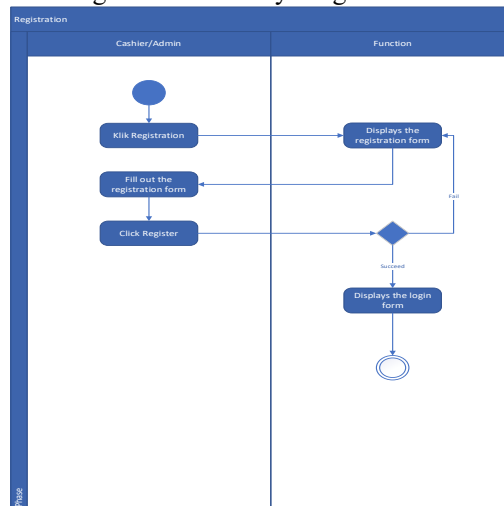


Figure 3 Activity Registration Diagram

Before logging in and signing in into the application, Admin and Cashier required For *register* moreover formerly. Admin or Cashier must fill out the available registration form Then enter to the login form after registration succeed.

2) Cashier Login Activity Diagram

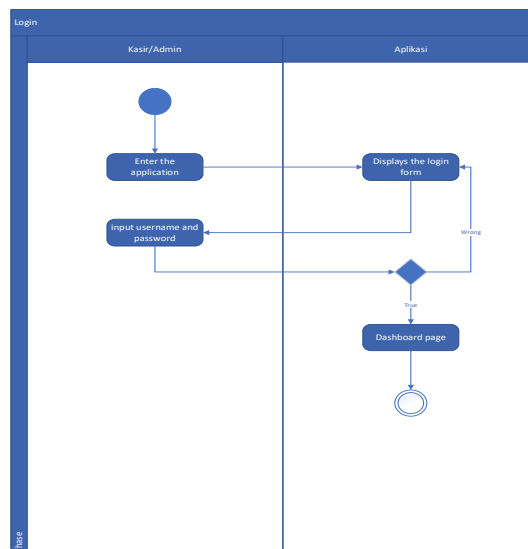


Figure 4. Login Activity Diagram

Before manage the menu inside application restaurant Pawon Mbok'e , Admin and Cashier required For *login* moreover formerly . If Entered *username* and *password* That's right, system will displays application dashboard page.

1) Sequence Diagram for Admin and Cashier Registration

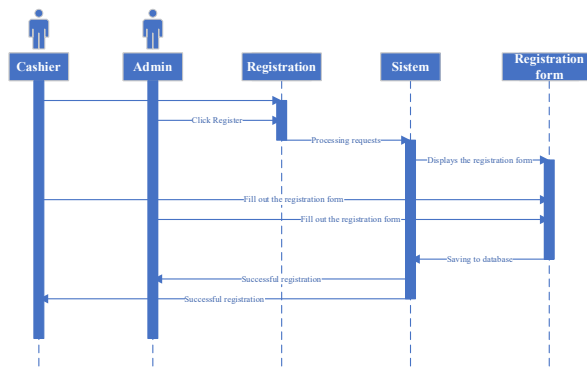


Figure 5. Registration Sequence Diagram

The picture above explain that Admin and Cashier required For register moreover formerly with fill out the registration form displayed.

2) Cashier Login Sequence Diagram

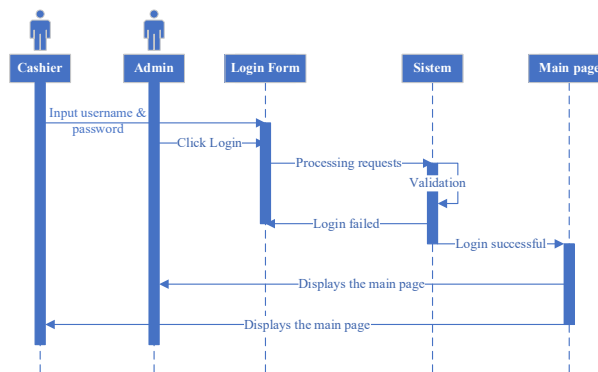


Figure 6. Login Sequence Diagram

After succeed register, Admin and Cashier can log in application. Then application will Displaying dashboard page containing food and drink menu choices available at the restaurant Pawon Mbok'e.

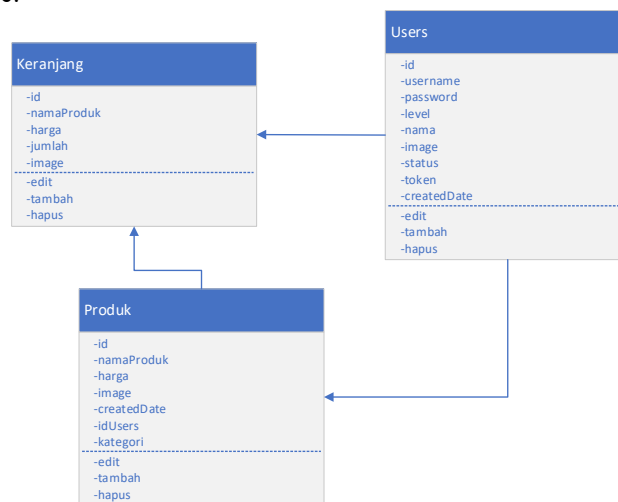


Figure 7. Class Diagram

1) Splash Screen Page



Figure 8. Splash Screen Application Design

The picture above show Splash Screen page of application cashier Restaurant Pawon Mbok'e.

2) Login Page

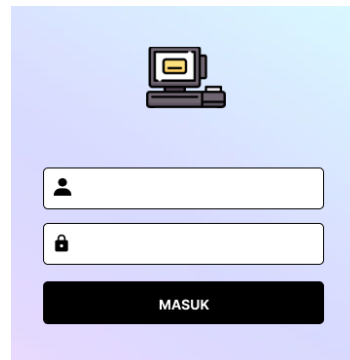


Figure 9. Login Application Design

The picture above is a required login form filled before enter application. Before to log in, you must do registration moreover formerly.

3) Dashboard Page

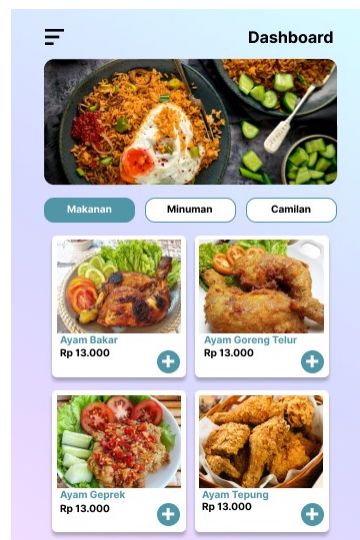


Figure 10. Dashboard application design

The dashboard page contains various kinds of menus are possible ordered. These include food menus, drink menus and snacks. On page this is us too Can put it in selected order into the basket for checked out.

4) Manage Menu page

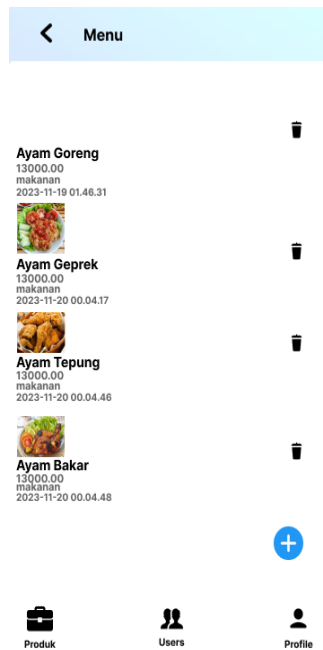


Figure 11. Manage Menu Page

The page above is the menu management page where admins can add menus, edit menus and delete menus.

5) Cart Page

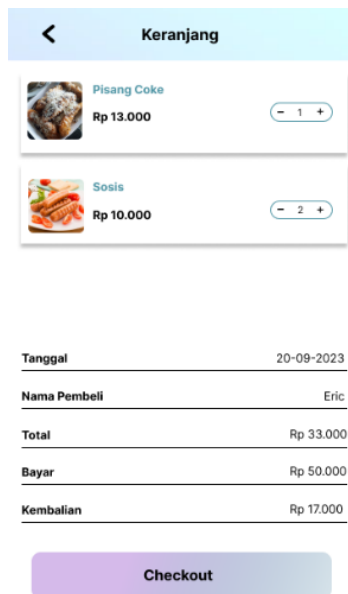


Figure 11. Cart Menu Application Design

On page basket containing previous order Already We insert . In page This There is checkout button for order and do Payment.

6) Transaction Page



Figure 12. Application Design Transaction

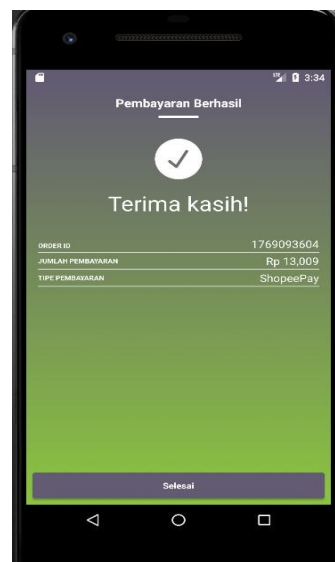


Figure 13. Application Design Transaction 2

Transaction booking use various method like Gopay, Shopepay and others. After do Payment then that's the menu ordered will enter in a way automatic to Order history with information paid off.

3.2. DISCUSSION

1. UML Testing And Design Using Black Box Testing

UML and Design testing aims to ensure that the UML and Design that have been created are well accepted and detect problems that exist or arise from the UML and Design of Payment Gateway In The Mobile-Based Pawon Mboke Eating House Ordering System. Testing is carried out using the Black Box Testing method on the features or functions available in this information system. The following table is an explanation of UML [12] testing and design of Payment Gateway In The Mobile-Based Pawon Mboke Eating House Ordering System:

Table 1. UML testing and Design Using Black Box Testing

No	Testing Scenarios	expected results	Test result
1.	Fill in the wrong username and fill in the correct password then press the Login button	The system refuses login access and displays the message: Login failed check email/password.	According to expectations
2.	Empty all Login data contents, then press the Login button.	The system refuses login access and displays a message: please fill in this column	According to expectations
3.	Fill in the correct username and password then press the Login button	You can log in and continue to the dashboard menu	According to expectations
4.	Input data in the Payment Gateway in the Mobile-Based Pawon Mboke Eating House Ordering System	Can submit and data is saved	According to expectations
5.	Edit data in the in the Mobile-Based Pawon Mboke Eating House Ordering System	Can be edited and can be saved again	According to expectations
6.	Delete data on the in the Mobile-Based Pawon Mboke Eating House Ordering System	Deleted data is lost	According to expectations

2. UAT

Testing steps This try to justify it feature soft already made of suitable with details of expected wishes . Regarding I also tried this presumption in research This . Procedures used is a User Acceptance Test (UAT) [13] . Author recommend so testing This done in the same amount of time to look skill created application . There are also results UAT calculations can observed in chart 2 :

Table 2. UAT Results

Question	Mark					Amount	Analysis (Amount / 15)	Percentage (Analysis /5*100)
	Ax5	Bx4	Cx3	Dx2	Ex1			
What? display the Payment Gateway In The Mobile-Based Kitchen Mboke Eating House Ordering System this interesting ?	40	28	0	0	0	68	4.53	91%
is presentation information on the Payment Gateway In The Mobile-Based Pawon Mboke Eating House Ordering System easy understood ?	35	28	3	0	0	66	4.4	88%
What? the Payment Gateway In The Mobile-Based Kitchen Mboke Eating House Ordering System can accessible where ?	25	32	6	0	0	63	4.2	84%
What? the Payment Gateway In The Mobile-Based Kitchen Mboke Eating House Ordering System can accessible with easy ?	30	28	6	0	0	64	4.26	85%
Apakah kemutahiran data the Payment Gateway In The Mobile-Based Pawon Mboke Eating House Ordering System update?	20	40	3	0	0	63	4,2	84%
What? the Payment Gateway In The Mobile-Based Kitchen Mboke Eating House Ordering System can monitoring go crime animals?	30	28	6	0	0	64	4.26	85%
is search and filter data on the Payment Gateway In The Mobile-Based Pawon Mboke Eating House Ordering System Enough Good ?	10	48	3	0	0	61	4.06	81%
What? the Payment Gateway In The Mobile-Based Kitchen Mboke Eating House Ordering System walking with good ?	25	36	3	0	0	64	4.26	85%

From the calculations in table 4.23 with the average value is $34.2 / 8 = 4.275$ so percentage value is $4.275 / 5 \times 100 = 85.5\%$. This matter test hypothesis accepted from application with test reception user is Good.

4. CONCLUSION

Based on use of Payment Gateway in the system order House Eat Pawon Mbok`e mobile -based, there is a number of possible conclusion can taked, Convenience Transactions: Payment Gateway integration is possible customer for do payment online with easy and fast through mobile application. This increase comfort for customers and speed up the payment process. Security Transactions: Using a Payment Gateway helps increase security transaction with provide layer security addition like data encryption and protection payment . This matter give a sense of trust self for customer For do payment by online. Tracking Payment: With using Payment Gateway, owner House Eat can with easy track payment has been made carried out by customers. This help in management finance and reporting transaction. Enhancement Income: With possible online payment, home Eat can reach more customers extensive, incl those who might no can pay with cash or card credit. This can help increase income House Eat in a way whole. Obtained testing reliability with amount respondents there are 65 as well percentage prove 100%, subject This show if 65 respondents That breast milk as well as No there is incoming respondents to type Excluded.

Future recommendations related with analysis more carry on for development architecture more security Good used on the Payment Gateway in the System Order House Eat Pawon Mbok`e Mobile based, also does analysis advanced with method combined other.

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