



Gadgetku.id application as a Solution to Facilitate the Fulfillment of All Gadget Needs today (case study: area Tangerang Banten)

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Abstract

The gadget is a sophisticated item that can present a variety of news media, social networking, hobbies, and even entertainment. The presence of gadgets today makes some people become dependent. If the gadget is damaged, they will repair the gadget itself or bring it to the service place. The problem in this study is the difficulty of finding information about the place of seller of gadget components and looking for a trusted service place, the nearest location and affordable prices. To overcome this problem, the author designed an application called Gadgetku.Id used a qualitative research method consisting of data collection, data analysis and system design. In this application have 2 main services, namely service and shop. The purpose of designing this application is to be able to assist users in finding a trusted service place, the nearest location, safe, scheduled and without the need to go to the service place and help to find gadget needs through the shop feature.

Keywords : Gadget, Service Place, Shop

1. Introduction

The development of information technology is getting faster. Evidence of the development of information technology is characterized by the existence of one of the increasingly sophisticated information technology equipment and increasingly in demand among many, namely Gadgets. According to Wikipedia (2017), "A gadget is a device or instrument that has practical goals and functions that are specifically designed to be more sophisticated than previously created technology. The difference between other gadgets and technology is the smaller size".

While other meanings of Gadgets are, "sophisticated items that can present a variety of news media, social networks, hobbies, and even entertainment" (Manumpil, B., 2015). The sophistication offered by gadgets such as smartphones, laptops, smartwatches and tablets can change people's mindsets and lifestyles which initially only to meet secondary and even tertiary needs has now become a primary need that is very valuable for their lives, especially for the majority of people in Indonesia. The presence of this gadget tends to make some people become dependent and can't get away from the gadget. Therefore if their gadgets are damaged, some people will feel anxious and even uncomfortable and as soon as possible will find a solution that is by buying a new gadget even if they have more money but if the budget is insufficient, another way is to repair it themselves or be taken to the service to be fixed. The problem faced by the majority of people today is an insufficient

budget to buy a new gadget so they choose an alternative way to try to repair it themselves or take it to a service place. Then some other problems are how to find components for repairing gadgets by themselves or how to find a trusted and safe service place, which is closest to where it is and of course at the right price. In addition, sometimes some people don't have much time to go to a service place. From the problems mentioned above, the author gets a solution to solve this problem, namely by designing a mobile application called "My Gadgets.Id". The purpose of designing this application can help users in finding trusted, safe, scheduled gadget service locations and of course with the location closest to where the user is and helping users to search for gadget needs through the online shop feature provided.

2. Research Method

2.1 Literature Review

This paper uses the literature review method, to look for the theoretical basis of previous studies which can be used for problem management. This method is used to gather information and data from multiple sources (literature), books, and journals for literature relevant to the needs of the writing of this paper. There are 5 (five) literature reviews that are used, there are:

1. Research entitled "Application Design for Ordering Computers, Laptops, and Smartphone Repair Services Based on Android" in IT Journal, Vol. 6 No. April 1, 2018 explained that, In accordance with the current technological developments such as computer devices, laptops and smartphones do not always function properly. There are times when the device is damaged, and the user of the device will try to fix it by visiting a service center or repair shop for computers, laptops and smartphones. Of course in this case, the user will lose time and energy to go to the device repair shop. Therefore, it is necessary to have an online booking service like grab and gojek. However, ordering these online services specifically handles computer repairs, laptops and smartphones directly in place so that users of the device save time, save energy, and do not bother to find and visit computer repair shops, laptops and smartphones. And also in order to make it easier for users of these devices to order computer repair services, laptops and smartphones online according to our needs and can be accessed wherever there is no place and time limit. In this case it is also very useful for some people because for technicians who can just register and work right away, like an online motorcycle driver like Go-Jek and Grab (Andramawan et al., 2018)
2. The study entitled "Information system for electronic equipment repair services CV. Sumber Teknik Cool engineering" In Journal Faktor Exacta 7(4): 305-316, 2014, explained that, CV. Sumber Teknik Cool is one of the companies engaged in two fields those are products and services. The products offered include home electronics (Electronic consumer) and its spare parts and services offered are repair serviceselectronics. Management of the system for repair services CV. Sumber Teknik Cool which is still not organized enough because it still uses a manual system. So that the author wants to make an information system to overcome these problems, namely problems in the repair service information system using language PHP and MySQL programming (Prastomo, 2014).
3. The study entitled "Design Of Web-Based Sales Information System On Hi Gadget Store" In Jursima Volume 6 No. 1, explained that, Hi Gadget Store is an electronics store that provides gadgets which requires an expansion on sales and promotion of its products for customer inside and outside Batam. Hi Gadget Store is still using Banner for its promotion and the recording transaction are still manual so it is likely to make a mistake and a data loss. At the time, the way of purchase at Hi Gadget Store are the customer directly came into the store to see and ordering products that are provided by the store. By developing a web-based sales information system on the Hi Gadget Store, it would help the store and the customer on making transactions and helps the store to promote the store's products over the internet. The system is using DFD (Data Flow Diagram) for the method development and CMS (Content Management

Software) called Opencart for the web-based system. The results of web-based sales information system research could be implemented and be a good use for the store on promoting its product and easily making transactions to the customers (Cristianto and Riki, 2018).

4. The research entitled "Designing a booking service system on Toyota Nasmoco Muda Semarang web-based" contains the idea that the design of the online booking service system model was triggered because of the fact that it was obtained in the field and the results of interviews with Toyota Nasmoco, if consumers wanted to service their vehicles register and get the serial number. This may be quite troublesome because if the customer wants to get the initial sequence number, the customer must arrive early / morning. On the basis of these problems the right solution to overcome this problem is to make a Web-based Service Place Ordering System to make it easier for customers to determine their own hours and what type of service they want according to the actual condition of the workshop. So after arriving at the workshop, customers don't have to wait long for their turn to be serviced. Because the process is in accordance with customer orders ordered online. (Hidayat, Muhammad R., 2014).
5. The research entitled "Development of Information Systems Ordering Services Cleaning Services Based on Web and Mobile at Liochita Cleaning Semarang" in the Journal of Computer Technology and Systems, Vol. 4, No.1, explain that, Liochita cleaning is a company engaged in the field of cleaning services which are located in the city of Semarang. Until now, the existing of information systems on Liochita Cleaning were not sufficiently able to manage the company and thus to make this company as a company that developed and developing its field and can compete with other companies is not possible. Start from recording customer data and order data, which is the became one as income data, so this companies are less aware in detail of the customer data. On the other hand, customers must make a call in advance to order the services that it requires no small cost. Lack of marketing facilities makes this company unable to include all of costumers in the city of Semarang. Data recording is still using paper, so this company were at risk of paper lost which is containing data that has been recorded. Development of an information system in this study using the method of the waterfall. Waterfall model consists of: requirements, design, implementation, testing and maintenance. For the start of the design, developer need to observations or interviews to determine the needs of the system that being developed. Applications developed using the framework CodeIgniter. The results of this final project is an information system that can meet the needs of Liochita Cleaning in the management of these services, customers and orders in accordance with the business processes that Liochita Cleaning have and allow customers to book services (Agung et. al, 2016).

From the literature review above, it can be concluded that there is no application that provides gadget repair services and online stores for gadget needs in one web-based application. Therefore the author designed a web-based gadget -.id.id application to make it easier for consumers to search for gadget needs in only one application that can be accessed anywhere and in various devices

2.2 Method

According to Wijaya (2018), "Qualitative research is a research method based on postpositivism philosophy that emphasizes inductive thinking that produces descriptive data, not in the form of statistical procedures which result in the conclusion of deep meaning from a set of generalizations".

While according to Susila (2015), "qualitative methods offer an approach that is more oriented to the depth of analysis in marketing research and measurement of business performance".

From the statement above, it can be concluded that qualitative research is a research method that is carried out by conducting research in advance to find out which system is

running and what system needs are needed, then put into descriptive data that is used as a reference for system design to be made. This qualitative research method begins with the collection of data obtained in the field, data analysis and design of the system.

For the scope of research Gadgetku.id applications this is temporarily only applied to the Tangerang-Banten region which includes 3 research points including Tangerang Selatan, Tangerang City and Tangerang Regency but it is possible that it will be used throughout Indonesia if this research is developed in the future. Besides that this research only focuses on how to bring together gadget equipment sellers and gadget repair service providers with consumers

Data collection was carried out by survey to find out the number of places for gadget equipment component stores and locations scattered in Tangerang, in this case the authors conducted a survey of 30 points in Tangerang which included South Tangerang, City and Tangerang Regency. After that, interviewing the shop owner and service place to find out the obstacles faced when promoting their store or service place, in addition to knowing what damage is usually complained by consumers when they are in the service area and what needs are usually purchased by consumers when to the gadget equipment component shop. The author also interviews consumers to find out what they need.

Before carrying out an analysis of the data that the author gets in the field, the author first concludes the current system in the majority of stores that the author visits by creating a system scheme that runs at this time. According to Wijaya (2018), "Qualitative research is a research method based on postpositivism philosophy that emphasizes inductive thinking that produces descriptive data, not in the form of statistical procedures which result in the conclusion of deep meaning from a set of generalizations".

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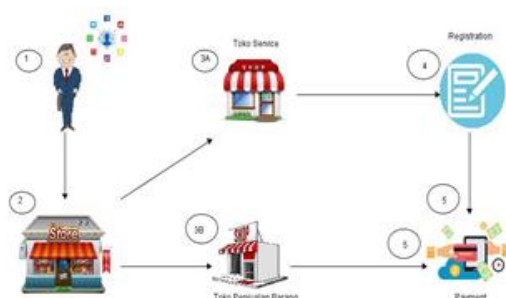


Figure 1. The system scheme is running

Information :

1. Customers see information about service places and gadget stores on social media
2. Customers come to the service place and gadget shop
3. There are two types of services in the store, namely:
 - a. Gadget service
 - b. Sales of gadgets, gadget components etc.
4. If the customer comes for service, the customer must register first
5. Customers make payments.

Data analysis, after the collected data the author analyzes the data and identifies what problems are often complained by the customer when they want to visit a gadget service or gadget shop and get the following results:

Table 1. Types of gadget damage.

Types of gadget damage that are often experienced by customers based on observation

NO	Handphone	Laptop
1	Crack / Broken Screen	LCD Screen
2	Error	Keyboard
3	LCD	laptop can't light up
4	Touchscreen	DVD
5	Camera	Error
6	Speaker	Hinge
7	Handsfree Port	USB Port
8	Can't Charger	Can't Charger
9	Battery	Wifi
10	Keypad	Blue Screen/Black Screen
11	-	Kamera/Webcam

System design is the final result after data analysis, which is used as a solution to existing problems. for the system design stage there are two steps taken by the author. First, designing a business model and business process using BMC (Business Model Canvas) so that this application can be used right on target according to user needs

besides BMC (Business Model Canvas) also makes the author focus on the scope of research that has been determined.

According to Dewobroto cited by Solihah (2014), "Business Model Canvas (BMC) is a business model concept developed by Osterwalder and Pigneur who succeeded in transforming the concept of a complex business model into a simple and can be used as an alternative strategy for the company which led to business feasibility".

Key Partners:	Key Activities:	Value Propositions:	Customer Relationships:	Customer segments:
Google Maps Courier: -JNE -Tiki Gojek	1. The user registers 2. User logs in account 3. Users can search for gadget equipment sales shops and gadget repair services closest to the location 4. Users can buy gadget equipment online 5. Users can choose gadget repair services anywhere without needing to go to stores one by one just by specifying the date when your broken gadget will be picked up by the service provider to repair it and the date when your gadget will be repaired	1. Save time for consumers 2. Expand the reach of promotion of gadget equipment business owners and gadget repair services. 3. Makes it easy for consumers to shop for gadget needs 4. This application can help all people who have business or expertise in the field of selling gadget equipment and gadget repair services to make money	1. Friendly service. 2. Promotion 3. Providing consumer gadget pick-up	• Consumer • Owner of gadget repair services • Gadget Vendor
	Key Resources: Programmer, Web Developer, Android Developer, IT security, Owner of gadget repair services, Gadget Vendor, Courier, Gojek		Channels: 1. Media Sosial 2. Google Ads	

Figure 2. Business Model Canvas

Figure 2. In Business Model Canvas there are 4 white columns including Value Propositions, Customer Relationships, Customer Segment and Channels. Value Propositions contains a design or description in the form of what benefits will be obtained by customers if using this application, Customer Relationships contains about how to build good communication with consumers and with business partners in an application, Customer Segment contains target users who will use or play an important role in this application later, While Channels contains an overview of how this application can be known and known by many people (the media used). In the BMC there are also 3 blue columns consisting of Key Partners, Key Activities, and Key Resources. Key Partners includes about working with who this application is made, because in building a business-related applications it is necessary partners to be able to run smoothly. Here the author works with couriers in terms of shipping goods, working with GOJEK in terms of picking up consumer gadgets that have not or have been repaired and working with google maps in terms of helping customers find a place to sell gadget equipment and gadget repair services. Key Activities contains the main activities what can be done by the user in the application made while the Key Resources contains the resources needed to create the Gadgetku.Id application.

Second, the author designs the application system Gadgetku.Id by using UML diagrams to describe what processes / activities are carried out by the application that will be designed later. According to Padeli in the CSRID Journal cited by Maimunah (2016), "UML (Unified Modeling Language) is one of the most reliable tools in the field of object-oriented system development. This is because UML provides a visual modeling language that allows system developers to make new prints of their vision in a standard form. As a sketch, UML serves as a bridge in communicating several aspects of the system". After describing the design or process of the proposed application process using uml, the next step in system design is to create an application display using the throw-away prototype method. This method was chosen because the system requirements needed by stakeholders were known by the author at the beginning through interviews and

observations, so that during the prototyping process later it can reduce the risk of unmet needs.

3. Findings

A. Problem Identification Results

After conducting a survey and analysis of data, the authors found several problems faced in the form of:

1. Information about the location of safe gadget services is still limited, consumers only rely on social media or information from people around to find out where the service is located.
2. The price of service gadgets in each store is different and the services of shop employees are sometimes less convincing, tend to make consumers have to go in and out of service places just to find the right price (cheap) and also convincing.
3. The lack of time consumers have to come to the store to buy gadget needs.

B. Solution to Problem

Problem solving begins with making a proposed application system design that is described using the UML (Unified Modeling Language) diagram. UML used is usecase diagram and activity diagram.

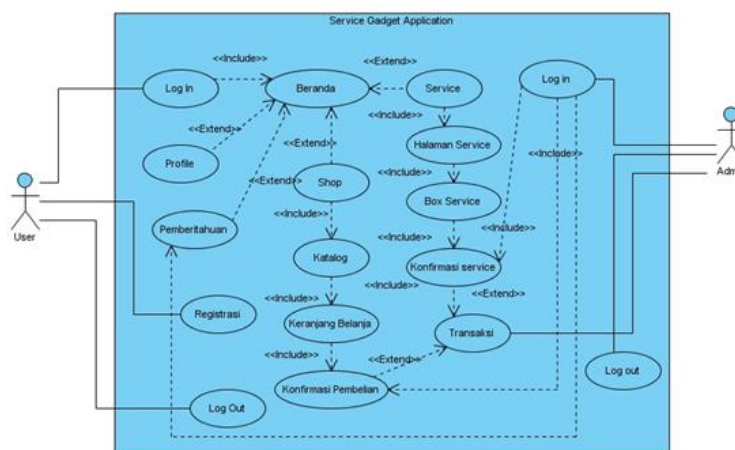


Figure 3. Usecase Diagram

The usecase image diagram above consists of 2 actors namely user (customer) and admin, consisting of 17 usecase. The first thing a user does is register first if you don't have an account. If you already have an account, you can directly log in. When you have successfully logged in, the user will enter the homepage which will display two service options, namely "Service" and "Shop". If you choose "Service" then it will go to the "Service" Page view. In this view, users can choose the type of gadget, type of damage and also the type of gadget that will be serviced. Then the user will be directed to the "Box Service" view. In this "Box Service", users are asked to fill in data about gadget owner information, gadget data, selection of service schedules, and estimated prices and service times. After that the data is submitted and then enter the "Service Confirmation" view, for this display the "Search" feature will be provided to find the location of the service that matches the data we uploaded earlier. This search feature is selected from the location closest to the user's presence and in accordance with the data information submitted by the user. After selecting a service location (confirm service), all information about the shop complete with chat features and approval information

will be displayed in detail, then the user confirms the service and then goes into the transaction view to see the status service. For the “Shop” service, users will be directed to the product catalog to select products, when they have chosen the desired product then they will enter the shopping basket, in this view the user must fill in information about the purchase data after it is submitted and the user will get a process notification purchase either via email or Gadgetku.Id application. While the actor admin is only responsible for updating the confirmation of purchase and confirmation of services and transactions.

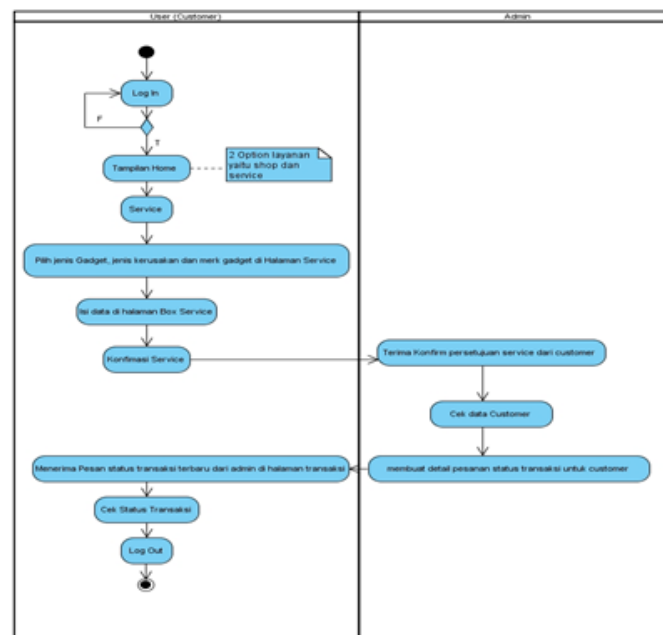


Figure 4. Activity Diagram “Service”

Figure 4 consists of 2 interacting actors including users and admin, first the user logs in the application first if it is successful then the user will be directed to the main page (dashboard) in this view the application provides 2 service categories that can be selected by the user. In this picture the user chooses the "Service" category, then goes to the "service" page. Here the user is directed to choose the type of gadget, the type of damage and also the brand of gadget to be repaired, after that the user will be directed to the "Box Service" page to fill personal data, schedule for repairing gadgets and also the payment method to be selected and then confirm order service. After completion the admin will get a service order confirmation from the user (consumer) and then check the user data (consumer). If it is correct, the order will be processed by the admin by changing the user's transaction status. The user receives a notification that the order has been confirmed and then waits for the gadget repair service provider to come to the user's home (consumer) to pick up the damaged user's gadget

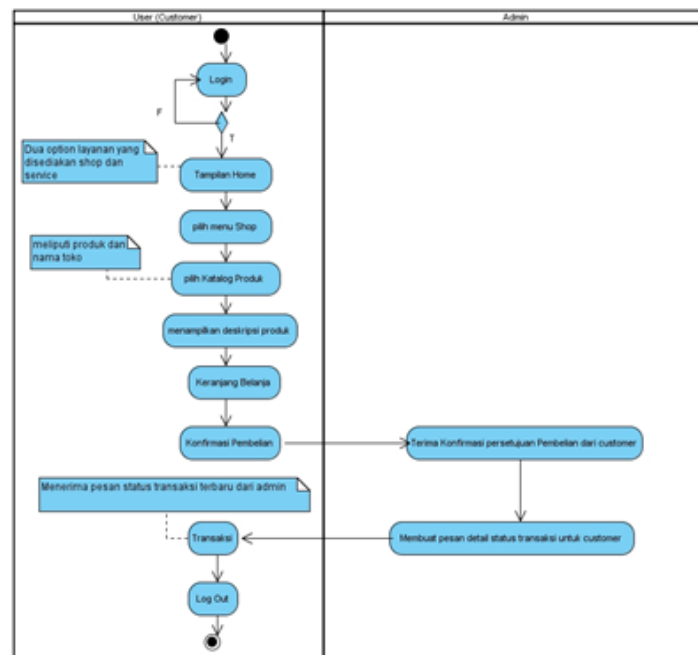


Figure 5. Activity Diagram “Shop”

Figure 6. Activity The diagram above consists of :1 Initial Node as the beginning of the object, 1 Decision Node, 3 Note, 11 actions (the state of the system that reflects the execution of an action), 1 final state as an end object.

After describing the flow of the system using the uml diagram, then drawing the design of the user interface, along with the user interface :



Figure 7. Display Home and Login

On this display there is a home and login display, where when you access this application, the user must first log in using his google account to be able to enter this application

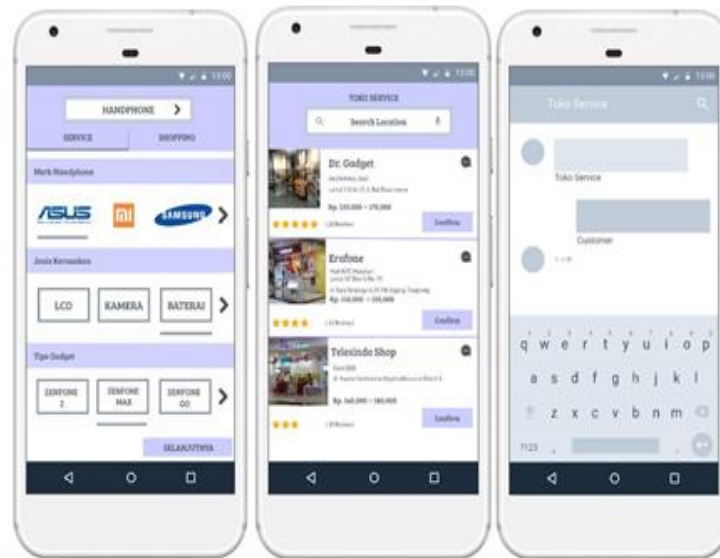


Figure 8. Display Service, Shop and Chat Feature

On this display, the user is required to choose what gadget to service as the example above, the user chooses a mobile service, chooses a mobile brand with the type of damage and cellphone type, after that the user must choose which store to choose to repair the gadget, there is a rating feature also and price range so that no more costs will increase. Users can also ask questions about store services via the available chat feature.



Figure 9. Display the Service Box and Service Confirmation

In this view, the user must fill in the personal data completely so that the service process is faster and timely, in the "box service" display there is a gadget data that has been filled as at the beginning the user has chosen the gadget to be served, there is a feature "Pick up Service", which is useful so that the user just waits at home until the shop owner comes and picks up the gadget that will be serviced, after the data has been filled, a confirmation service will appear where the user just waits until the shop owner comes to the house.

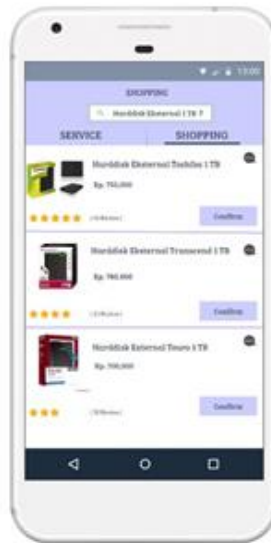


Figure 10. Display Shopping

In this view, users can buy computer equipment and cellphones with several product catalogs that have been provided.



Figure 11. Display Shopping Box dan Confirmation

In this view the user must fill in the complete data and choose the payment method, after the data is filled in and submitted, then there will be a confirmation display and the user will be contacted for the next process.

Application Features:

- Service features
- Shopping feature, which is to provide several components of Laptop and Mobile
- Search location location service features recommended application according to the customer's location and according to the data in the box service.
- Transaction feature, to see service status and purchase status.

- e. The feature sets the service schedule and the estimated price and time found in the box service display.
- f. Chat and Phone Store Features

4. Conclusion

After the author made observations to 30 points where the gadget sale and gadget service in the South Tangerang area, Tangerang City and Tangerang Regency were found, there was still a lack of promotional media used by business owners of buying and selling gadget services in terms of offering services or goods to consumers, and consumers have difficulty finding a place to buy and repair their gadgets. From these problems the authors draw the conclusion that it is necessary to make an application to facilitate both parties between service providers and buying and selling gadgets with consumers in order to interact with each other comfortably and safely. The purpose of this research is to design applications that can connect consumers with gadget repair service providers and gadget equipment sellers. Applications Gadgetku.Id can make it easier for consumers to find the place to sell a variety of gadget equipment and service gadgets closest to their existence, of course, can save consumers time. besides being able to shop gadget needs online, consumers can also use gadget services to repair damaged gadgets without having to go to a service place simply by determining the location of the service location and ordering the date of service through the application after waiting for the service provider which is damaged in the consumer's house to be repaired and waits for the service provider to deliver the gadget that has been repaired to the consumer's house. The advantages of this application include consumers can simultaneously become a provider of gadget repair services and open stores that sell a variety of gadget equipment of course under the supervision of admin Gadgetku.Id so that the processes that exist in the application, especially the transaction process become safer, besides this application can expand the business area of repair service providers and gadget sellers without time and location and for consumers to save time and money because they don't need to visit stores one by one with one.

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