Package Placement Application Based on Location Tracking on Android Platform

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Abstract-JNE has a pickup service program to pick up a package of loyal online shop customers. This system still has limitations in terms of interaction with customers and JNE customer service. This causes less than the maximum number of customers or partners to get better service. Based on these problems starting with the manufacture of input-output design with the tracking location method will facilitate customers in the package pick-up process. This research will produce a package pickup application on the Android platform that is created using the Java programming language and uses the MySQL database so that JNE can do its business activities in a shorter and timely manner. With the use of this application can cause process time savings reaching package pick-up more efficiently, this application can be a better substitute for the previous system.

1. Introduction
In this increasingly sophisticated era, many people buy various needs online through the various website or Android platforms, besides that, shipping services increasingly require human resources more than just picking up customer packages, because the sellers themselves are increasingly busy to take care of their online customers. Online shopping is very popular nowadays, allowing consumers to buy products they like from all over the world, they see products vary greatly [1]. The busyness of online sellers makes them want more facilities than shipping services to speed up the delivery of customer goods. Currently, databases are widely used in business applications, their implementation, and development in database management systems with queries resulting in transaction processing [2]. In 2014 Subhasee Samal designed a mobile application on the Android platform in a large retail store case study, in this Android application, data was stored in SQL Server in one file on disk [2]. Research other Md. The Palash Uddin system is developed for location tracking of a group with proximity alert systems using various latest demanding tools and technology like Jason, Java, Adv, lamp [3].

Java is an object that is reliable and portable object-orientated programming has also been used in the world of industry and education [4]. Java is currently the main language in building Android applications. However, the development of Android applications will continue to grow as the number of applications created using Java, in the world of health can also build a system such as a hospital. For example in the hospital there is ECG monitoring, the patient's heart rate is continuously monitored, but not if returning home, then a patient monitoring system can be made back home [5].

In the application that we built, the admin system uses the PHP framework Code igniter programming language. Codeigniter is a web application framework that is used to build dynamic web applications [6].
To speed up the creation of the admin system and write system code shorter and structured using MVC (Model View Controller).

In a previous study conducted by Md. Palash Uddin, Md. Zahidul Islam, and Md. Nadim, in 2013 entitled "GPS-Based Location Tracking System via Android Device", which chose Android as a GPS device and Tracking Location [3]. So that in this study, researchers conducted research using GPS and Tracking Location. This study was able to surpass previous research by utilizing the History feature that can store detailed information and also use the Notification feature as a media notification to customers.

Here we will explain how the previous system works, namely the customer calls customer service, customer service calls the agent courier (JNE Partner / Branch) to pick up the customer package, if Customer Service has called the courier, the courier will respond, if the courier has confirmed pick up, then the customer service will call the customer who has requested the pickup order. If we look at these conditions, of course, this system is felt to take a long time. Things like this that gave rise to the idea of the author to create a customer-based map pickup package application with Android view and backend using the PHP programming language, Java and using an MYSQL database. Where the application is available on the Android platform.

2. Methodology

In this package pick-up application, Android-based pickup services with the web service tracking location method, in this case, is an activity to monitor the presence of positions obtained from Google Maps API tracking equipment. The location will be linked to the user by providing details to the user and also hiding and providing secure information using the android application [7].

Furthermore, a Web service is a distributed system that has components that can be deployed and accessed using the HTTP (Hyper Text Transport Protocol) and HTTPS (HTTP Secure) protocols. Web services can be programmed in a variety of programming languages. In web services, there is at least a web server and a client. Clients request services offered by web servers through desktop/PC or mobile. Android is a Linux-based operating system for mobile devices from Google. Android is praised as “the first complete mobile platform, of course, Android is widely used as an operating system on cell phones. This device is made for touch screen mobile devices such as Smartphone and tablets [8].

Location-based services (LBS) are services that can be accessed through a mobile device equipped with the ability to utilize the location of the mobile device. Location-based services can be described as a service that is at the meeting of three technologies, namely: Geographic Information System, Internet Service, and Mobile Devices [3]. The steps in making this Android-based application are carried out in 4 stages, namely, the first is data collection, the second is an identification of system requirements, third is the design of system implementation, and the fourth is system implementation.

Furthermore, the implementation step of the research will analyze the system prototype and features in this application. The prototype for this application is the need for hardware and software. The hardware requirements in this system consist of Smartphone Android Version 4.3 Kitkat, Flashdisk, Computer / Laptop.

The software requirements in this system are Windows 7, Android studio version 2.1.2, Sublime Text Editor, PHP, Javascript, Java, Chrome, MySQL Server. The features in this system can pick up documents or shipments using the package pickup application by implementing GPS to determine the package pickup application that will be picked up by the courier. Based on observations of the Pickup Service system at the Medan branch of JNE, it is known that it is still very difficult to build a system that is quite optimal. Making this package pickup application is a business support from JNE, so the system can run optimally. Aims to make it easier for customers the JNE in the Pickup Service system. As a whole, the system for the Pickup application for this package optimizes JNE Customer Service by picking up via Smartphone. That way can provide benefits to the JNE and the Customer in the Pickup Service system. The following is a picture of the Goods Pickup System Flow in Figure 1.
System depiction of the Pickup application. This package will illustrate the process flow through the Use Case Diagram. Use Case Diagrams are used to describe the system from the viewpoint of the system user (user). So that making Use Case Diagram is more focused on the functionality that exists in the system, not based on the flow or sequence of events. A Use Case Diagram presents an interaction between actors with the system. Based on the flow and system requirements obtained data after making observations on the system in pickup service. Descriptions of designing the package pickup Application Case will be displayed in Figure 2.
 Meanwhile, the depiction in Figure 3. Below shows the Activity Diagram of the customer while carrying out an application registration activity where the User requests to do a Pickup Service, the system of picking up the package is done by a courier. The following is the Pickup Service System Diagram system in the Package Pickup application.

**Figure 2. Use Case Package Pick Up Chart**
3. Results and Discussion

The system implementation phase is a process that is carried out after the system design phase has been completed. When the application is launched, in the login page the main menu is the initial menu used by user in figure 5. Application will ask to create a new account to continue the application in figure 6. Then on the page Pickup Service application, to make orders can choose Pickup Order menu in figure 7. When ordering, Pickup Service User expected to fill item description, choose Branch Office Pickup Service, Items Weight and Additional Information in figure 8. After pressing the Order button, Admin Master will receive New Order notification. Then it will be processed immediately to contact the courier to pickup the orders from user. Notification will show to the user application and gives status “On Process”. After courier comes to pickup user items. Courier will be sent directly to Branch Office Pickup Service chosen by the user. The item that have been received by Branch Office will be processed immediately item/Air waybill number description. Notification will show to the user application and gives status “Complete”, and give more information about item/Air waybill number description on History in figure 10. In this application there are also support menus such as trace and tracking page in figure 11. Is used to display the location distance of your pick up service trip and check rates page in figure 12. Is used to shown rates for pick up service.

Figure 3. Activity Pickup Diagram
Figure 4. Splash Screen Page
Figure 5. Login Page
Figure 6. Registration Page

Figure 7. Menu
Figure 8. Order Pickup Page
Figure 9. Track Location Page

Figure 10. History Page
Figure 11. Tracking Page
Figure 12. Check Rate Page
4. Conclusion

After completing the research on package pickup application based on tracking location on the Android platform, a number of things that can be concluded are as follows. Pickup Application This package makes it easy for Customers to interact with Customer Service in doing Pickup Service; This package pick-up application makes it easy for Customer Service to specify Customer information; With the establishment of the package pick-up application, it is expected that JNE's performance can be more optimal and Customers can more often do Service Pickups to simplify Customer work.

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