International Journal of Education, Information Technology and Others (IJEIT)
https://jurnal.peneliti.net/index.php/IJEIT
Vol. 4, No.2, July 2021

Designing Android-Based Online Sales Applications to Increase Sales and Marketing

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Article Info

Article History:
Received: May 26, 2021
Revised: June 8, 2021
Published: July 2021

e-ISSN: 2623-2324
p-ISSN: 2654-2528
DOI:10.5281/zenodo.5055197

Abstract

The Cireng Manis (CiMan) design aims to increase the profitability of Cireng Manis fruit flavour sales by expanding the marketing strategy using android-based online. Therefore, it can be accessed by many people. The method used in making this application is the Waterfall System Development Life Cycle (SDLC) method. This application is based on Android using Java programming language and combines it with node JS as a database intermediary. This application makes our sales higher than usual because people more easily know our sales through social media. Other than that, it also makes it easier for customers to make purchases because they already use online transactions. Also, Cireng is also liked by almost all ages. Seeing these advantages, we will develop our application further to make it easier for everyone to use it to gain more benefits.

Keywords: Design, SDLC, android, programming

INTRODUCTION

Smartphones and tablet computers continue to increase in ability and performance over time. Therefore, the use of smartphones is increasing significantly (Thompson et al,2013). It is estimated by Industry Analysis that there are more than 250,000 applications available that can be downloaded through various stores and markets, some of which are e-commerce applications (Wasserman, 2010). The development of e-commerce technology currently makes the operating system of mobile devices more diverse, one of which is an Android operating system that allows its users to easily and quickly find various information they need (Citra and Wajah, 2020). Mobile applications run on mobile devices that can be carried anywhere, easy to use, and accessed anywhere and anytime (Islam and Mazumder, 2010). Android is a mobile operating system that runs on the Linux Kernel and a unity of software for mobile devices that

contains the operating system, middleware, and main applications. Android-based Mobile Application Development is based on Java programming language code. Therefore, when developers make an application, they must use code in the Java programming language. Android-based Mobile Application Development is a very important platform for developing a mobile application because it provides stack of software from the Google Android SDK. Android SDK provides many tools and APIs needed by developers to develop applications on the Android platform (Goggin, 2012). Android-based online sales application is an application on mobile/smartphone devices that can facilitate sellers and buyers in making transactions without meeting in person so that it is not fixated by distance and time.

Research of Application Design Food and Beverage Online Delivery Based on Android Framework is to develop an Android-based online order application for online restaurant delivery that has features distribution outlets and product promotions. It has a user-friendly interface that makes users more comfortable in using this application (Manan, 2019). There is also research about an Android-Based Cellular Application for Prestashop e-Commerce Shopping Cart. This Android-based application has a website called Prestashop that was built as a Prestashop eCommerce Shopping Cart software using PHP PL and MySQL DB to store data. This application is an android application for online shopping that is integrated with Prestashop eCommerce Shopping Cart software that runs on the XAMPP Server and connects it to the MySQL database. Therefore, customers can easily use this online shopping application from their mobile / smartphone devices (Jagtap and Hanchate, 2017). The purpose of this research is to develop a model of a mobile-based e-commerce marketing system in a computer-based information system (CBIS) model, which will discuss the criteria formulated.

The development method used is a combination of CBIS, e-commerce website, and mobile application development with requirements stages, system analysis, design, development, testing, and implementation. The marketing system was developed using a CBIS system model that integrates mobile applications with e-commerce websites (Moertini, 2012). The purpose of the Research Implementation and design of Online Fashion Store Demi Outfits Based on Android is to help in business unit sales transactions called Demi Outfits by making it easier to use android-based online transactions. Using Android-based online transactions, product transactions can be done efficiently and quickly while still using the old / manual system. To speed up customers' transaction process to this online store, they create a system that offers customers access to online store services and buy the process to buy an online store using an Android-based application. Therefore, customers can more easily make the purchase process at this online store. This application also provides facilities to assist in searching collections to purchases made by customers (Hendriana et al, 2015). Likewise, research on Android-based culinary information system design uses a multimedia development life cycle. It enables culinary information to be accessed anywhere and anytime online in the hope for marketing and promotions to increase sales and income. This research implements the gamified mobile application for smartphones, which is designed for new students to overcome several specific problems related to campus orientation. This application uses game elements so that it is not boring when used, integrated with campus orientation mobile applications, to encourage students to explore the campus deeper and determine the university services (Fitz-Walter et al, 2012).

This research aims to increase Cireng sweet fruit sales' profitability by expanding marketing to become online so that many people can access it. The method used in making this application is the Waterfall System Development Life Cycle (SDLC) method with an Android-based application that uses the Java programming language and combines it with nodeJS as a database intermediary.

RESEARCH METHOD

The Waterfall SDLC model is a sequential software development process in which progress is stared as flowing increasingly downwards (similar to a waterfall) through a list of phrases that must be executed to build computer software successfully. The Waterfall model describes some consecutive phases that must be completed one after the other and moving to the next phase only when its preceding phase is wholly done. For this reason, the Waterfall model is recursive in that each phase can be endlessly repeated until it is perfected. Fig. 1 shows the SDLC Waterfall model different phases.

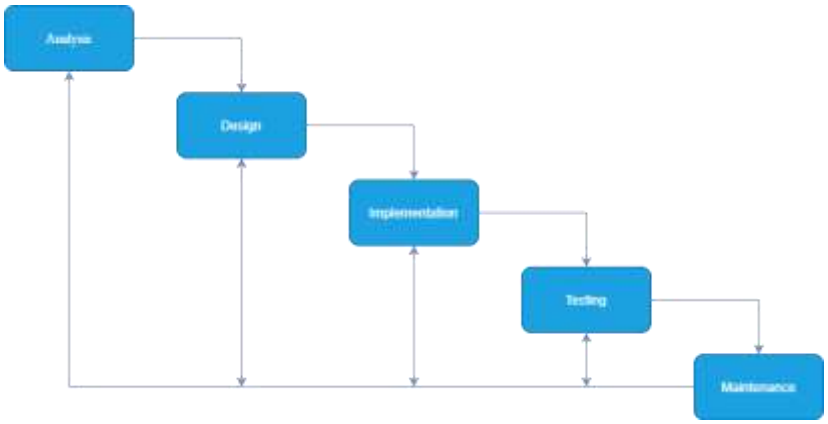

Figure 1. Waterfall Model

Essentially, the Waterfall model comprises five phases: Analysis, design, implementation, testing, and maintenance.

Analysis Phase

To build CIMan applications based on Android and Node JS, we conducted several stages in designing applications using the Waterfall methodology and compiling a list of web services. They were built using NodeJS and used by Android applications using the service caller function, which is part of the Android architecture design template. To build CiMan Applications, we design an application architecture to be used as a reference workflow of the application will be.

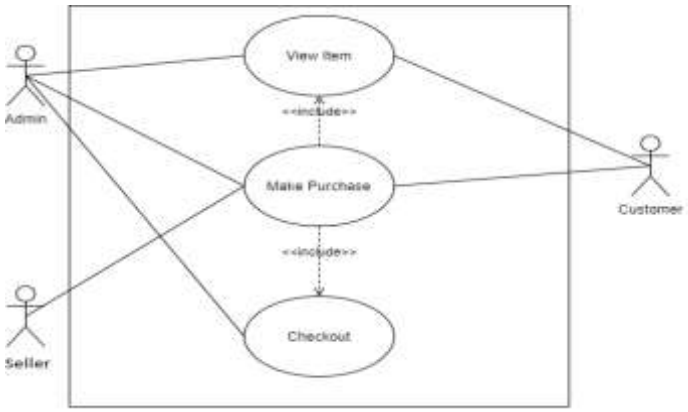

Figure 2. Use Case Diagram CiMan

After knowing the use case diagram from the application processing student achievement grades regularly, then the analysis is made to make Activity Diagram.

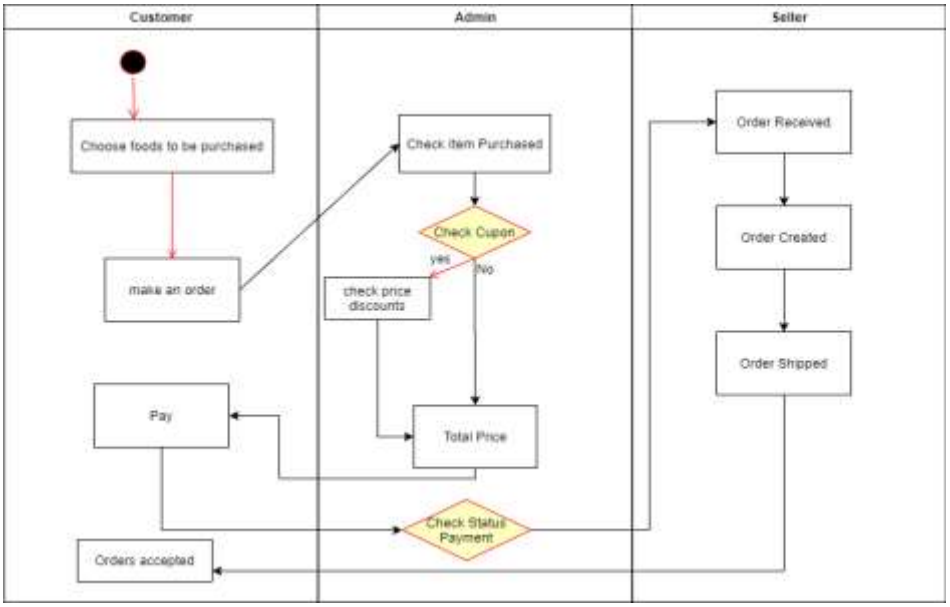

Figure 3. Activity Diagram CiMan

Design Phase

After knowing the application workflow, the required database design will be used to store all data.

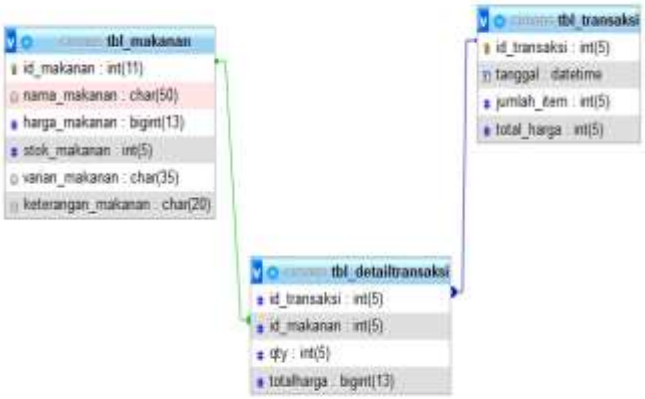

Figure 4. Database Relational of CiMan

Implementation Phase

At this stage, we begin to execute design specifications into programs, databases, and applications.

Testing Phase

We test the application directly to the user and do a purchase simulation. After that, we check and validate if there are errors and bugs.

Maintenance Phase

When doing the test, we did not find any bugs and errors. Therefore, for the moment we do not do any repairs.

RESEARCH RESULTS AND DISCUSSION

In the analysis and discussion, we will provide frontend application Interface design. This implementation is limited by several things, namely the application interface is only in the form of a prototype. However, applications that run on smartphones must be connected to the internet. The main page display is shown in Figure 5 by providing a display of recommended features, wish list, and popular products. Menu navigation in this application consists of 3 menus, Home, Products, and Cart.

Figure 5. Home

The product list display is shown in Figure 6 with the product list view that users can put in the shopping basket. Users can also choose the number of products as needed.

Figure 6. Food List

The transaction process display on the cart page begins with a list of products that have been entered into the purchase basket. The available feature gives the edit option quantity and

deletes the product if the user wants to make any changes (See Figure 7). This application's results are due to the wishes of the client or rather Cireng Manis sellers who want an android-based online sales application with a simple display and easy to use by the user / buyer. It is also designed as an application with features for online transactions for buyers and sellers to transact easier. The data storage area designs this application as a central database that deals with product and customer information. This application is based on Android because most people have smartphones with the Android operating system. Therefore, Cireng Manis's marketing becomes wider because most people can install this application to buy Cireng Manis online.

The mobility of people and the development of ICT are critical factors in today's economic growth. Therefore, the use of mobile applications is essential when companies market their services or products. Cell phones have produced tremendous opportunities for gain access to the Internet. Meanwhile, cell phones has been increased by e-commerce for the business. However, commerce applications are adequately developed and cover all aspects. The ideal application does not distract the user from his intentions and provides the appropriate speed, security, and accessibility level (Alqahtani and Goodwin, 2012). The problem with using a smartphone web browser to do online shopping is the screen size level. In designing mobile phone applications, screen size, urgency, interfaces, input device task-based, and design are essential aspects that developers consider. The device screen size proved to be of great importance (Alqahtani and Goodwin, 2012). Android is a operating system that goes on the Linux Kernel and a unity of software for devices that covers the middleware, main applications, and operating system. The critical factors in selecting Android are embedded database file system, total cost, and its capacitive touch screen. They were designed based on the client-server model, with network connectivity to obtain time data from the backend server. To stay competitive and be more open in market, it is essential to simplify business in mobile devices (Oupraxay et al, 2010).

In a previous study, there was research in which Prestashop sales application development contents were integrated with the Prestashop e-commerce Shopping Cart website. To make transactions via mobile applications, the features here are related to CiMan applications, namely sales or product transaction features that allow buyers to make transactions through applications (Jagtap and Hanchate, 2017).

Figure 7. Cart

CONCLUSION

This Android-based mobile food sales system can make it easier for consumers to order goods via mobile phone at CiMans Store. With m-commerce, consumers do not need to come directly to the store to make transactions. Therefore, it makes it easier both for the sellers as well as the customers.

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