

Designing E-Commerce Applications for Mobile-Based Audio Technics Stores

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ABSTRACT

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It seems that existing technological advances have not been utilized equally by business actors, one of which is the Audi Technics Store. Audio Technics Shop is an electronics shop that sells various audio-based tools. In its marketing activities, this shop still uses a conventional marketing system which is carried out directly through the shop. The obstacle faced is the difficulty of reaching a wider range of customers. This research aims to design a mobile-based AudioTech e-commerce application that can be accessed online by customers at the Audio Technics Store. This research produces a conclusion that the mobile-based e-commerce application designed for the Audio Technics Store can help product marketing and product sales activities online and more widely.

INTRODUCTION

The technology and information that modern society currently enjoys seem to have various positive impacts on aspects of people's lives. Since technology and information are currently developing rapidly, most forms of activity in society have implemented renewable technology. Technology is a tool or a field of knowledge that makes it easier for humans to carry out daily activities both in the world of work and education (Maritsa et al., 2021). With current technology, it has become a trend for all business people and the world of education to apply it. In the field of education, technology has an important influence in providing science and knowledge that can be easily accessed by anyone who needs it. The increasingly rapid progress of technology and information is both a challenge and a solution for most business actors to be able to keep up with the progress being offered. In practice, large companies that have implemented advances in technology and information in all their operational activities make human resources in these companies work more effectively and efficiently. The application of information technology in the business sector, such as office applications to help company office activities, and online attendance, in the world of education implementing online learning and teaching activities, has become a current trend, namely online shopping activities which can now be done and enjoyed by the majority of Indonesian people easily. There are various applications used for online shopping, including website and mobile-based applications. The progress of applications in shopping activities on online sites is often referred to by technology experts as e-commerce platforms. According to Sihotang (Handayani, 2018), E-Commerce is a dynamic or customizable technological device in which there is an application and business processes, consumers, and their communities in carrying out shopping activities.

Audio Technics Shop is an electronics shop that sells various audio-based equipment, this shop is located at Jalan KH Ahmad Dahlan No. 72 Gampong Baro, Banda Aceh City. In audio system equipment sales activities, the Audio Technics Store still carries out conventional sales activities through physical stores, the promotions carried out have indeed implemented existing information technology such as social media which is widely used by the public, namely Facebook and Instagram. The problem faced in this shop is related to sales that have not been carried out online, thus affecting buyers' interest in seeing the products in the Audio Technics Shop. Conventional sales are considered unable to reach a wider range of customers, so an e-commerce application is needed that can be used to make sales online.

In this research, researchers designed mobile-based e-commerce at the Audio Technics Store which can be easily accessed by customers via personal smartphones. Mobile applications are applications designed specifically for a mobile platform such as iOS, Android, and so on. These applications are often called mobile apps which describe an internet application that runs on a smartphone (Novianti, 2022). This research will produce a design for a mobile-based e-commerce application called AudioTech with the hope that this design can provide an overview of the Audio Technics Store to follow technological advances and implement it in the business world.



LITERATURE REVIEW

This research uses the library study method as a method for collecting research data in the form of journals, articles, and so on. Literature studies are used as a reference for conducting research with several relevant sources. The following is an overview of the literature used in this research:

1. Research conducted by Rita Irviani, et al with the title "Designing Android-Based E-Commerce Applications in the Community Self-Help Group of Margakaya Pringsewu Village" in 2018 produced system test results that the resulting application could help marketing small and medium enterprise products (Irviani et al., 2018).
2. Research conducted by Chintia Dwi Utami, et al with the title "Analysis and Design of Mobile-Based E-Commerce YoPlant" in 2023 provides attractive design results that can provide comfort to customers in shopping activities (Utami et al., 2023).
3. Research conducted by Santoso and Jeferson Hutahaen with the title "Mobile E-Commerce Based Online Bookstore Application" in 2018 resulted in a mobile application that had been system tested and produced satisfaction for its users (Santoso & Hutahaen, 2018).
4. Research conducted by Wayan Windane and Lathifah with the title "Android Based E-Commerce Toko Fisago.co" in 2021 resulted in good criteria for the system testing carried out (Windane & Lathifah, 2021).
5. Research conducted by Lukman Sunardi, et al with the title "E-Commerce Design for Pesona Sriwijaya Lubuk Linggau Based on Mobile Web" in 2022 resulted in a mobile web-based e-commerce system (Sunardi et al., 2022).

METHOD

The research method used in this research is SDLC waterfall, this method is a method used to design and develop software using waterfall flow diagrams. The waterfall method is a method that describes the system development process sequentially, systematically, and sequentially (Wahid, 2020). The stages or flow in the waterfall method are as follows:

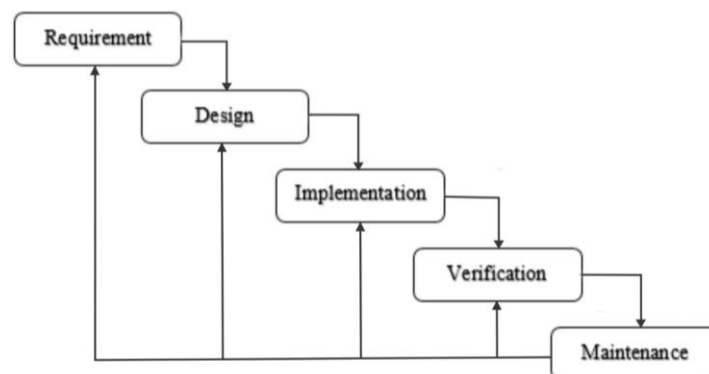


Figure 1. The flow of the Waterfall Method

The description of the flow of the waterfall method used in this research is as follows:

1. Requirements
At this stage, a system requirements analysis is carried out which aims to determine the criteria for the system you want to design. At this stage, several research needs data were collected through literature studies, observations, and interviews with the owner of the Audio Technics Shop.
2. Design
At this stage, a design or planning process is carried out which aims to help provide an overview of the architecture of the system to be built.
3. Mplementation
This stage is the implementation stage or implementation of the design that has been created. At this stage, to develop an information system, coding or coding is usually carried out.
4. Verification
At this stage, unit testing and integration of several features that have been created are carried out. Testing is carried out to ensure the system is running correctly.
5. Maintenance
The final stage of the waterfall method is maintenance which aims to carry out maintenance on the system that has been successfully developed. Correct errors if bugs are found in the system that has been developed.

RESULTS AND DISCUSSION

Special Theory

E-Commerce

E-commerce is the distribution, sale, and marketing of goods or services that rely on an electronic system such as the Internet or other technological networks (Jain et al., 2021).

UML (Unified Modeling Language)

UML (Unified Modeling Language) is a visual modeling model that is used as a means of designing object-oriented systems (Arianti et al., 2022).

System Design

This research uses the UML (Unified Modeling Language) model to model the system design, the following is the system design used in this research:

Use case diagrams

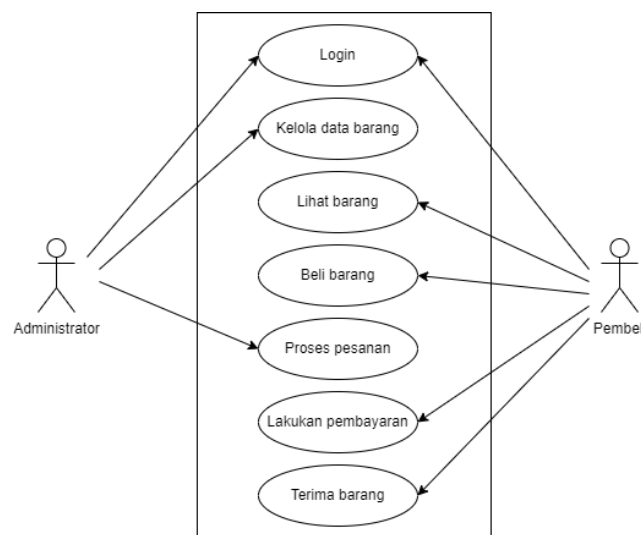


Figure 2. Use Case System Diagram

Activity diagrams

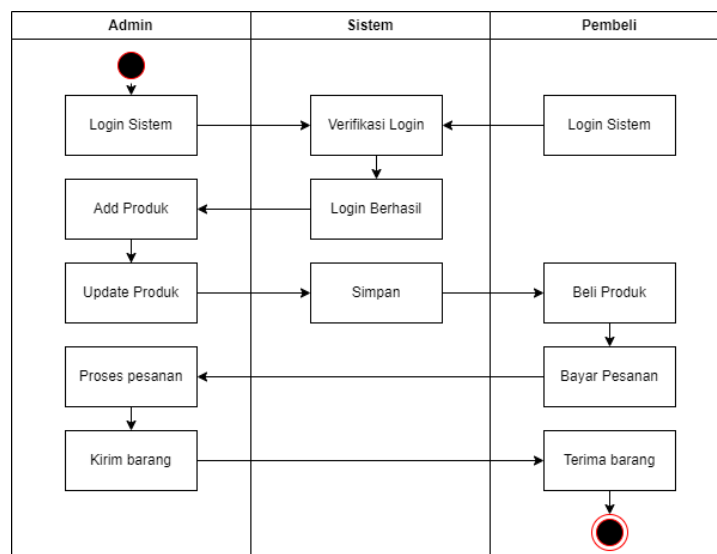


Figure 3. System Activity Diagram

Implementation

The following are the results of the implementation of the system created:

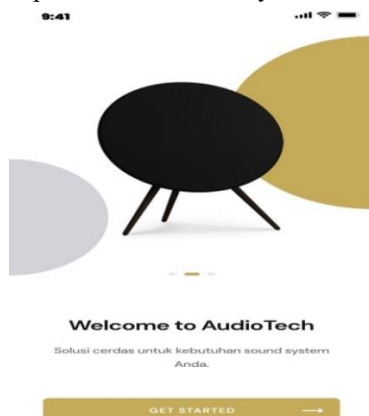


Figure 4. AudioTech Application Home Page

This page is a page that displays the start page for the AudioTech application. This page will appear when the user first installs this application.

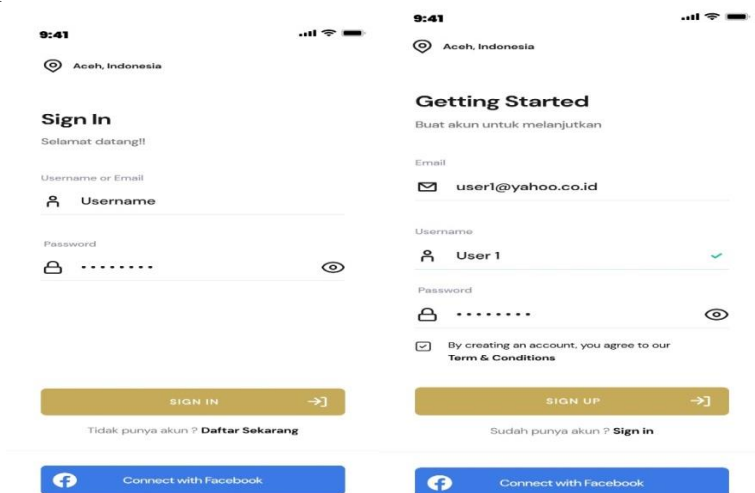


Figure 5. Application Login and User List page

This page is a page that displays the user login page in the AudioTech application, there is also a registration page for users who do not have an account to log in to the system.

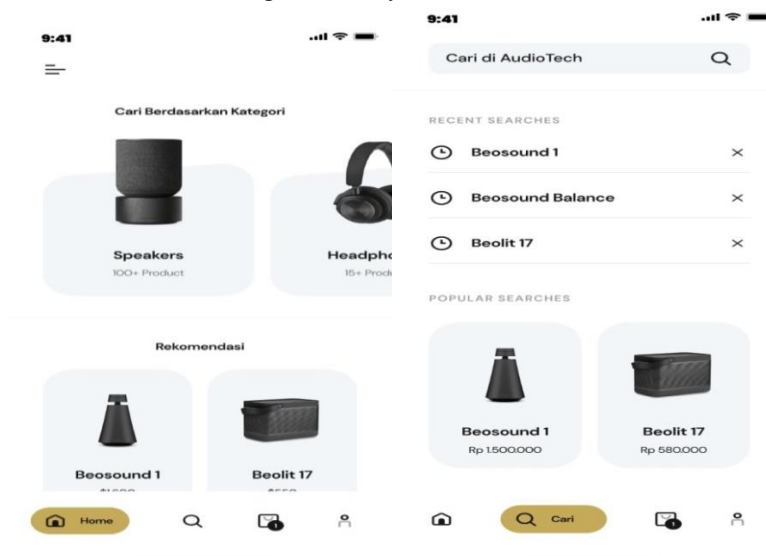


Figure 6. Search Product Page

This page is a page that displays the AudioTech product search page, searches can be done based on product categories.

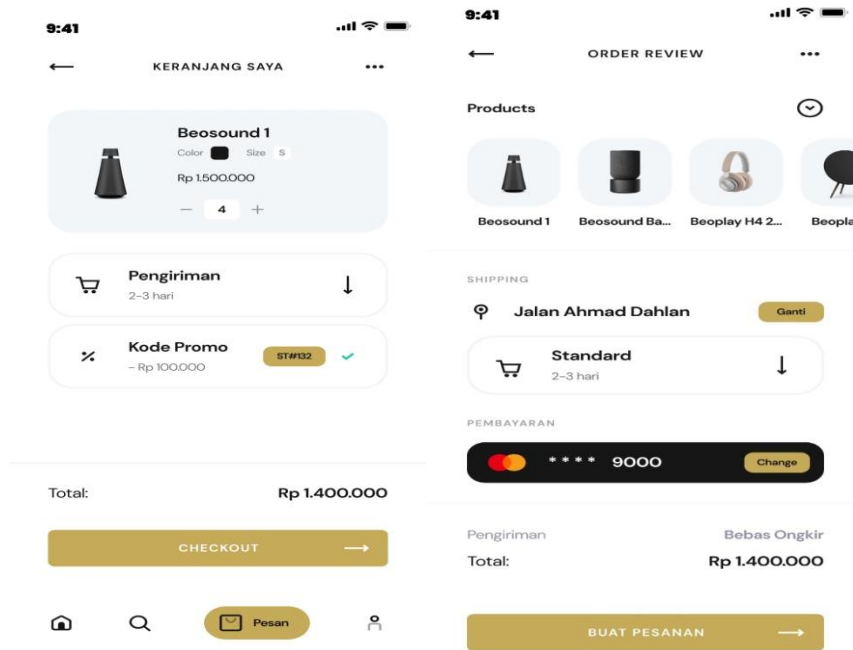


Figure 7. Checkout and Place Order page

This page is a page that displays the product checkout page and places a product order when a user makes a purchase or orders for an AudioTech product.

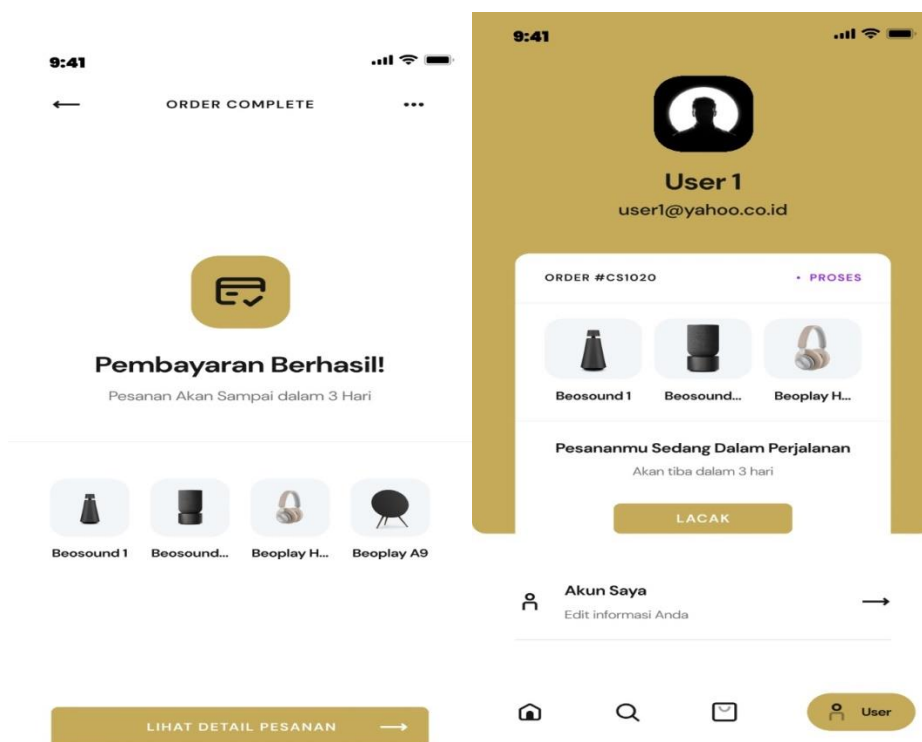


Figure 8. Successful Payment and Track Product page

This page is a page that displays the successful payment status when the buyer makes payment for the product and on this page, you can also track orders that have been made by the buyer.

CONCLUSION

The conclusion obtained from the research that has been carried out is that a mobile-based e-commerce design for the Audio Technics Store can help the Audio Technics Store in marketing more widely through a mobile-based e-commerce platform that can be accessed online via smartphone. The marketing carried out becomes broader and can reach buyers from anywhere. Constructive suggestions are certainly needed in research for further research material, one of which is more diverse payment features and building a system such as a marketplace platform so that other shops can sell online.

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