Implementation of the Hybrid Mobile Application in The Street Artist Painting Auction Application "Strauction"

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Abstract. The works of street artists' paintings tend to have minimal interest in Indonesia. This is caused by many factors, one of which is the limited scope of painting marketing. Therefore, the author seeks to provide a means of marketing in the form of an online painting auction application. The purpose of this research is to create an application as a means of connecting painting artists with painting enthusiasts. The research method used is descriptive analysis method with a quantitative approach. While in the development process, this application adopts the Hybrid Mobile Application method which has many advantages over the Native Android and IOS methods. The advantages of this hybrid method are in terms of coding effectiveness and efficiency of time and resources used. By applying this method, the application can be accessed from various circulating smartphone operating systems such as Android and IOS so that it can make it easier for the application to be accessed by potential users. The main concept of this application is to implement an auction system in the sale of paintings. This application also has several core features such as painting auctions, homepage, explore, bidding, payments and other supporting features that are expected to facilitate the painting auction transaction process. In the end, this application is intended for painting artists and painting lovers so that it can be easier to make transactions for buying and selling paintings online.

Keywords: Artist painting, Auction Application, Mobile Application.

1. Introduction

Mobile application development with native methods is something that is commonly done by mobile application developers. However, over time, the hybrid method is more effectively applied considering the efficiency of time and resources used. Hybrid Mobile Application is a combination of native and web applications which makes this method more flexible and time-saving in its development. With these advantages, the author tries to apply the Hybrid Mobile Application concept to the "Strauction" application, which is a mobile-based street artist painting auction application.

Native mobile applications have advantages in performance and functionality [1], while the advantages of applications with the hybrid method, application development only requires one time coding that will run on various platforms so that it will have an impact on reducing costs and time during application development [2]. Therefore, the hybrid method is very suitable to be applied to application development that runs on many platforms [3]. With the effectiveness of coding and efficiency of time and resources, it will certainly increase profits [4]. Another advantage of applications that apply the hybrid method is the fairly low power consumption of 88% [5].

The purpose of the research that the author did was to create an application as a means of connecting painting artists with painting enthusiasts. The research method used is descriptive analysis method with a quantitative approach.

2. Method

The research method used in this case is descriptive analysis method using a quantitative approach to convey the research design. As for the software development method used the waterfall method. The Waterfall method is highly recommended for small-scale projects with easy-to-understand requirements and the waterfall method is the simplest method compared to other software development life cycle methods [6]. The waterfall method can be seen in Figure 1.
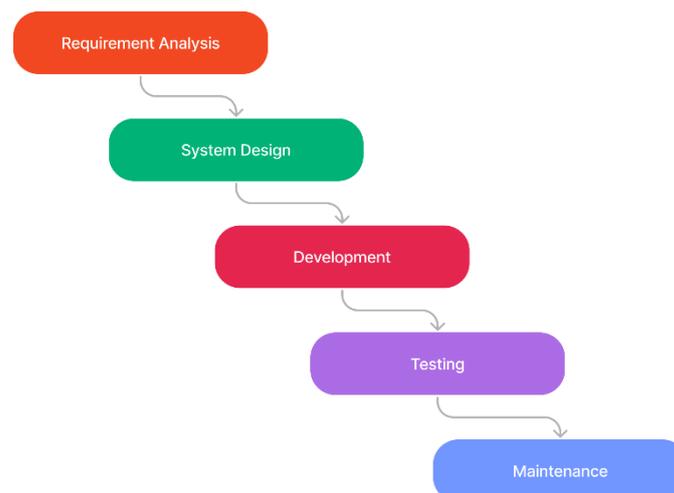

Figure 1. System Development Life Cycle Prototype

The stages in the waterfall method begin with making documentation of the specification requirements of the application to be made starting from the features that will be provided to the data that will be used. After completion, the identified specifications are represented in the

form of a prototype or mock-up display before entering the development stage. The application that the author uses to create layout designs and prototypes is Figma. After the prototype in the form of a mock-up is made, the application creation process is carried out where the application that the author creates will run on the mobile platform. Before starting the application development, several supporting tools are needed such as: Visual Studio Code, Android Debug Bridge (ADB), Android/IOS Smartphone, Android Software Developer's Kit (SDK) and Dart Plugin. The development of making hybrid-based applications is carried out on the Windows 10 operating system. After the development stage is complete, the next stage is to test the functions of the applications that have been made thoroughly, to ensure that there are no bugs or errors so that the application can function as expected. The last stage carried out is maintenance of the Strauction application which aims to ensure the application runs for the long term. The application can be updated for additional features.

3. Results and Discussion
3.1. Identifying Requirements
The Strauction application is based on statistical results showing that street artist painting sales are still low. The author has done some research to find the features needed to sell / auction paintings in mobile applications. The Strauction application has several core features such as painting auctions, creating bids, and paying to facilitate the sale of paintings. The following figure shows the menu structure of the Strauction application. Figure 2 gives an overview of the menu structure and the features of the Strauction application.
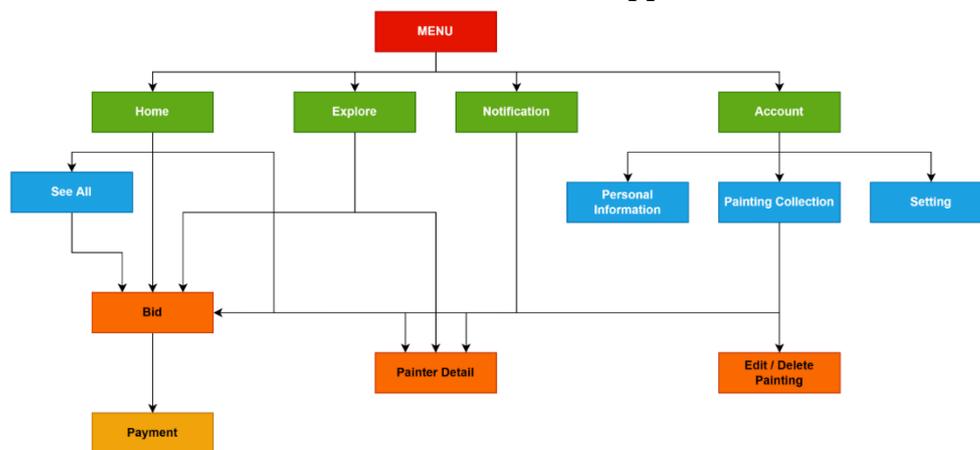

Figure 2. Strauction Application Menu Structure

Figure 2 gives an overview of the menu structure and the features of the Strauction application. The advantage of making an e-commerce mobile application is having a simple and easy menu structure [7]. A search function that allows you to explore different types of paintings, a bid function to participate in auctions, a payment function to pay for   selected paintings, a detailed painter function to display details, and so on. painter.

3.2. Developing the initial Prototype
This application is made with a simple and easy to understand interface so that users feel comfortable when using the application. User experience covers the whole product or service acceptance. It touches all aspects inclusive of pragmatic and hedonic of a product. The pragmatic or instrumental refers to the utilitarian aspects, such as usefulness and ease of use,

and hedonic or non-instrumental to the emotional and experiential aspects of product use [8]. The user's satisfaction and the software acceptance may be related to the positive experiences [9]. Figure 3 shows the initial display in the form of a splash screen when the application is opened. If the user is not logged in, the user will be directed to the login / register page. If the user is logged in, the user will be directed to the home page. Figure 4 is the main page after the user enters the application.

Through this homepage the user can access various available features, such as participating in auctions, exploring and others.

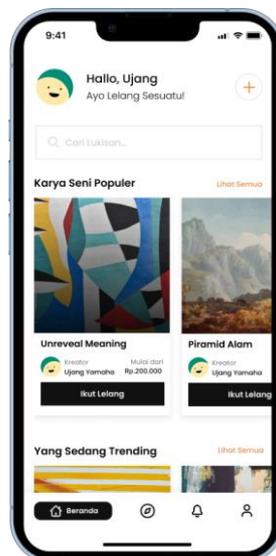**Figure 3.** Splash Screen Strauction Application

Figure 4. Home page Strauction Application

3.3. Developing the initial Prototype

In this section the author will test other features after building the initial feature (home page image), these other features are divided into two types, namely main features and side features, both of which are important for the Strauction application. The author realizes that application users come from various age levels from young people to the elderly. Therefore, the author uses a grid layout because grid layout was the most efficient layout for elderly [10-12]. Display if the painting shown in Figure 5.

Figure 5 is a display of the painting browse page, where the user is shown a number of paintings that can be purchased through the auction system. Figure 6 is an illustration of the auction submission feature show in Figure 6.

Figure 6 is an illustration of the auction submission feature which has several components in it such as a timer, initial bid, last bid and bids that will be submitted by the user. Display of the user's profile show in Figure 7.
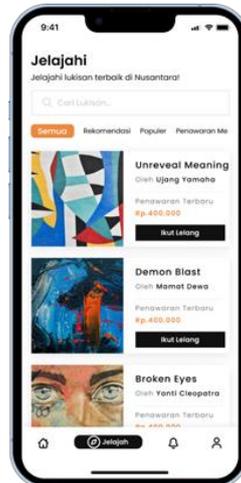

Figure 5. Explore Page

Figure 6. Bid Page

Figure 7 is a display of the user's profile in which there is information on the number of works, paintings sold, and the average price. There is also a collection of paintings by the painter. Illustration of the painting upload feature show in Figure 8.

Figure 8 is an illustration of the painting upload feature used by the painter / painting auctioneer when they want to auction a painting. In it there are several detailed data inputs regarding the following paintings with painting images. Illustration of the payment feature show in Figure 9.
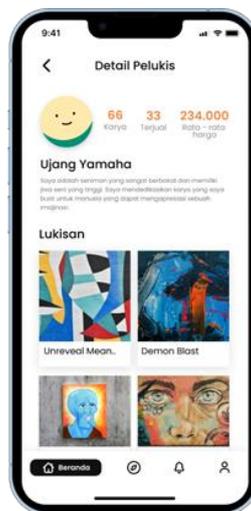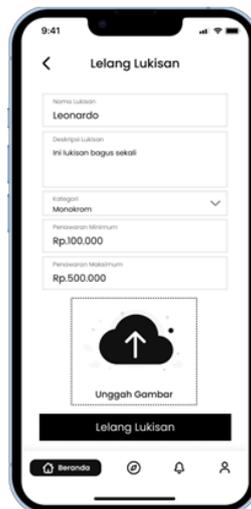

Figure 7. Profile Page

Figure 8. Upload Painting Page

Figure 9 is an illustration of the payment feature in which there are several payment methods that can be used by the user (the buyer of the painting) after submitting an offer for the painting. Illustration of the account menu show in Figure 10.

Figure 10 is an illustration of the account menu features in which there are several menus such as personal info, painting collections, settings, and exit/logout features. A configuration feature show in Figure 11.

Figure 9. Payment Page

Figure 10. Account Menu Page

Figure 11 shows a configuration feature that allows the user to darken the appearance of the application and disable notifications. If you have problems using the application, there is also a problem reporting menu and a help center menu for contacting customer service. Slider view that gives an overview of the application show in figure 12. Below is information that has a menu to help you with questions such as applying data protection regulations. In addition to the main features, there are also other additional features that are supporting features of the main features that have been created, including:
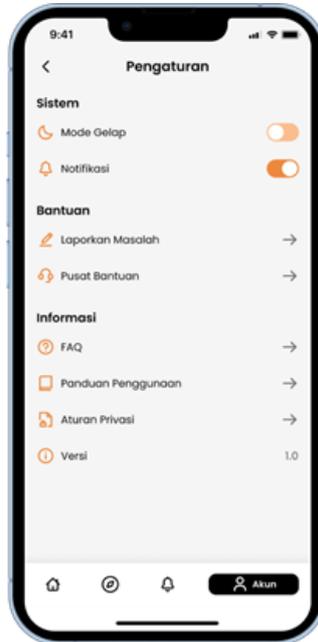
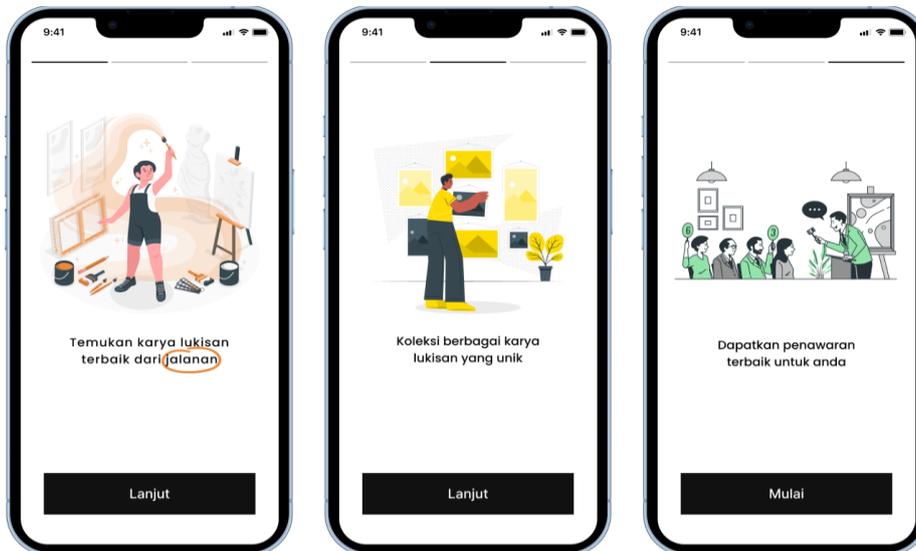**Figure 11.** Settings Page

Figure 12. Page Slider

Figure 12 is a slider view that gives an overview of the application. Users can register or log in show in figure 13. In Figure 13 users can register or log in if they already have an account. Users are also given the option of being able to use third party login such as Facebook, Google, and Apple. The login feature show in Figure 14. Figure 14 shows the login feature that can be used if the user is already registered as a user. Users can enter the email address and password that was created when registering. The serves to modify auction posts show in Figure 15. The feature shown in Figure 15. The prototype of this application is the result of the author's thoughts on what the author needs to apply. In addition to promoting street painting sales, the author hopes that street painters will become more and more popular and recognized.
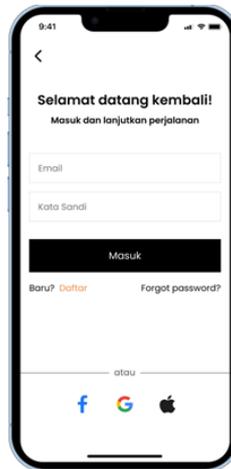
Figure 13. Login & Register Page
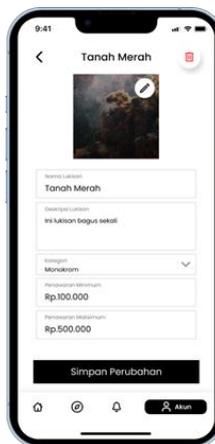

Figure 14. Login Page

Figure 15. Edit Painting Page

4. Conclusion

Straction's application is aimed at painters, especially street painters. With all the features provided by the Strauction application, it is hoped that street painters will be able to reach more enthusiasts and sell more paintings in less time.

Acknowledgement

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