Research Article

Building a Website-Based '*Mulia*' Hotel Room Booking System

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Abstract:

Hotels are one of the contemporary business modes that have actually existed since ancient times, conventional hotels have been built since ancient times in the Dutch colonial era, but at this time hotels have developed a lot with all their dynamics, some are in the form of small hotels or inns such as OYO, REDDOORS, and so on with various applications that are up to date and the latest, easy and more flexible. Informatics management study program students are expected to be able to participate in becoming reliable developers, for example, the creation of a hotel room booking system named 'Mulia' which is able to compete with existing hotel booking systems. This booking system uses the Kotlin programming language and is developed in such a way as to use a reliable graphic design system in color settings, connection systems between tables and database systems, so that booking rooms is more flexible and easy to operate by ordinary people.

Keywords: Android, online hotel, room booking system, web based, programming, user interface

check for updates

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1. INTRODUCTION

The increasing popularity of online applications and some have skyrocketed with very high levels of sales such as Shopee and APPpedia, as well as other online applications that provide extraordinary offers, advertisements so that they attract consumers extraordinarily, the level of public trust and enthusiasm is getting bigger, making these online applications is growing very rapidly, including the increasing number of outlets or applications joining the two largest platforms, if in China there is Alibaba, and in America, Japan there is Amazon, then in Indonesia it is no less than the APPpedia, but keep in mind that Android-based applications are also continuing to be developed with the specifications of the goods being sold. This paper will specifically discuss a new application, namely the Mulia Hotel room booking application. The Mulia Hotel room booking application online application was developed using the Android platform. Of course, it has advantages over several other online applications, including price, quality, specifications and other advantages.

Online applications [1,2,3] must continue to provide innovation, especially in terms of innovation, especially price. The advantages of the Mulia Hotel room booking application include competitive or cheaper prices without reducing the quality of the goods sold. Specifically, it will be discussed in the discussion and results chapter. There is also a need to develop new marketing methods. If appliedpedia and Shopee introduce

the COD (Cash on Delivery) sales type or pattern, this means it will make it easier for buyers to be able to pay on the spot, but COD has disadvantages if the goods that have been purchased do not match the buyer's expectations, the goods may be returned or returned. , this will definitely have a bad impact on the seller, including losses in terms of shipping money. So sellers can sell their goods through the largest application or platform without activating the COD menu on their application platform. In the online application, Hotel Mulia Room Booking Application, it immediately provides convenience with room selection menus that can be selected in detail at relatively cheaper prices, from survey results collected by the developer of the online application, Hotel Mulia Room Booking Application.

Android is an operating system developed by Google for the purpose of building devices such as smartwatches, tablets and other devices, built using the Linux kernel and adapted to all needs such as email, navigation and email management, including in this article, specifically showing images in the form of room reservations that can be selected quickly and instantly by the customer, the price system is supplemented with tax and shipping cost calculations, so it is transparent. Android is built using Java, Kotlin, and C++.

Java is a programming language commonly used to develop Android applications, including for creating e-commerce programs. Java's performance in creating Android e-commerce programs can be considered very good for several reasons: Java has Fast performance: Java is known to have fast and efficient performance, especially because of the JVM (Java Virtual Machine) that is used to run Java code on Android devices. This is important in creating e-commerce applications [4,5,6,7,8,9], because the application must be able to handle many requests and transactions quickly and without lag. Java is a Multiplatform programming language: Java is also a multiplatform programming language , meaning that code written in Java can be run on various platforms, including Android. It allows developers to create e-commerce applications that can be accessed by users from a variety of devices and operating systems. Java Easy to learn: Java is a programming language that is relatively easy to learn, especially for beginners who want to start developing Android applications. There are many online resources and tutorials available for learning Java, and many Java libraries and frameworks that can be used to speed up e-commerce application development. And Java has good Security: Java has good security because of the security features integrated in the language. These security features are especially important in e-commerce applications, where users will conduct online transactions and transmit sensitive information such as credit card information and other personal data.

Kotlin is a relatively new programming language and is increasingly popular for developing Android applications, including for creating e-commerce programs. Kotlin has several advantages that can affect the performance and quality of Android e-commerce applications, including: More concise code: Kotlin allows developers to write code that is more concise and easier to read compared to Java. This can speed up development time and reduce the number of errors that occur during development. Null safety: Kotlin has a null safety feature, which allows developers to avoid bugs related to null values. This can increase the stability and security of e-commerce applications. Interoperability with Java: Kotlin is designed for interoperability with Java, allowing developers to use existing Java libraries, and vice versa. This allows developers to take advantage of the vast Java ecosystem in e-commerce application development. and Support from Google: Kotlin has been officially supported by Google as a programming

language for Android application development, which means that developers can expect good support from Google in application development e-commerce that uses Kotlin.

The ease of online hotel room booking includes several beneficial aspects, including:

1. Ease of Access and Time: Can be done anytime and anywhere, so users can book hotel rooms in advance and from any location using a smartphone
2. More Detailed Choices: Users can compare facilities per hotel and select hotels in detail, as well as make special requests such as favorite food menus for breakfast, lunch and dinner
3. Small chance of running out of rooms: With online bookings, the risk of running out of rooms is smaller, in contrast to walk-in bookings which do not provide direct room availability information
4. Easy Verification Process: The online hotel check-in process can also be simplified, where guests can verify their identity digitally via the application, so they no longer need to submit physical IDs directly

2. METHOD

The first step is to create a user interface (UI) that will be used in your online application. For example, you can create a main page with a product list, product detail page, shopping cart, and checkout page. After that, create a Java class that will be used to organize your application logic, such as retrieving product data from the database, adding products to the shopping cart, and processing payments. Next, we can connect your online application application with the product database that you have. You can use web services or APIs to retrieve product data from the server. Then, create a function that allows users to add products to their shopping cart and checkout to complete payment. After that, we can add additional features such as order and payment notifications, online payments using payment gateways such as PayPal or Stripe, as well as integration with shipping services. And finally we can publish your online application to the Google Play Store so that users can download and use it.

Layout in Android refers to the way user interface (UI) elements are laid out or arranged on the device screen. In Android application development, layouts are usually created using XML (Extensible Markup Language). XML is a markup language used to create a document structure consisting of tags and attributes. In terms of layout, XML tags and attributes are used to determine the position, size, appearance, and interactions between UI elements. Several types of layouts that are often used on Android are Linear Layout, Relative Layout, Constraint Layout, Table Layout, Frame Layout, and Grid Layout.

3. RESULT AND DISCUSSION

In this discussion, we will go directly to the design of this Bunda food shop, step by step

Fig 1. Mulia Hotel logo for website needs

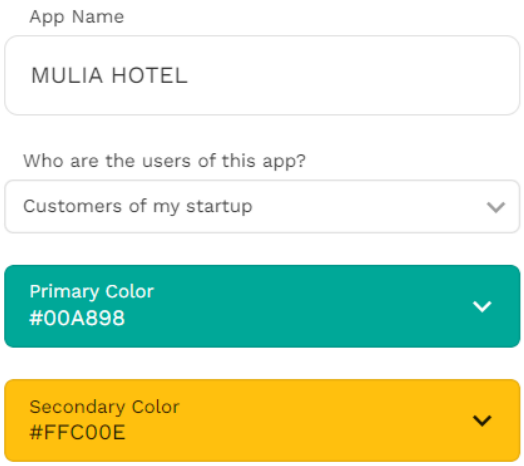

Fig 2. Mulia Hotel for initial configuration

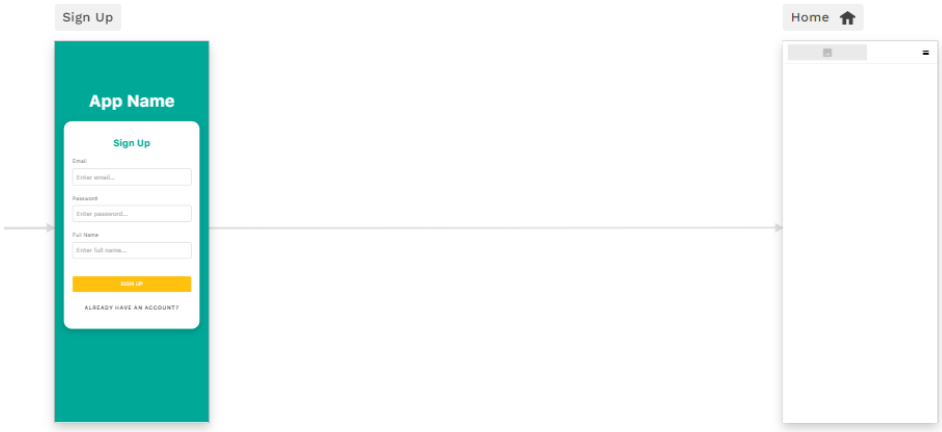

Fig 3. Mulia Hotel Connection between Mobile Apps Dashboard

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textViewAvailableRooms"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Available Rooms:"
        android:textSize="18sp"
        android:textStyle="bold"
        android:layout_marginBottom="8dp"/>

    <ListView
        android:id="@+id/listViewRooms"
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:divider="@android:color/darker_gray"
        android:dividerHeight="1dp"
        android:layout_marginBottom="16dp"/>

    <Button
        android:id="@+id/buttonBookRoom"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Book a Room"
        android:layout_gravity="center"/>
</LinearLayout>

-- Program with XML for hotel room booking template ----
```

```
    import java.util.*

    data class Room(val number: Int, val type: String, var isBooked: Boolean =
false)

    class Hotel(val rooms: List<Room>) {
        fun displayAvailableRooms() {
            println("Available Rooms:")
            rooms.filter { !it.isBooked }
                .forEach { println("Room ${it.number} - Type: ${it.type}") }
        }

        fun bookRoom(roomNumber: Int) {
            val room = rooms.find { it.number == roomNumber }

            if (room != null && !room.isBooked) {
                room.isBooked = true
                println("Room ${room.number} booked successfully.")
            } else {
                println("Room $roomNumber is not available.")
            }
        }
    }

    fun main() {
        val room1 = Room(101, "Standard")
        val room2 = Room(102, "Deluxe")
        val room3 = Room(103, "Suite")

        val hotel = Hotel(listOf(room1, room2, room3))

        while (true) {
            println("\nWelcome to the Hotel Booking System")
            println("1. Display Available Rooms")
            println("2. Book a Room")
            println("3. Exit")
            print("Enter your choice: ")

            when (readLine()?.toIntOrNull()) {
                1 -> hotel.displayAvailableRooms()
                2 -> {
```

```
                    print("Enter the room number you want to book: ")
                    val roomNumber = readLine()?.toIntOrNull()
                    if (roomNumber != null) {
                        hotel.bookRoom(roomNumber)
                    } else {
                        println("Invalid input. Please enter a valid room number.")
                    }
                }
                3 -> {
                    println("Thank you for using the Hotel Booking System.
Goodbye!")
                    break
                }
                else -> println("Invalid choice. Please enter a valid option.")
            }
        }
}

               ------  Coding use Kotlin for hotel room booking ----
```

4. CONCLUSION

The Mulia hotel room booking application has shown an increase in the number of guests or visitors. This has a very positive impact on the continuity and development of Mulia hotel management. The convenience of online-based hotel room bookings includes several beneficial aspects, including Ease of Access and Time: Can be done anytime and anywhere, so users can book hotel rooms in advance and from any location using a smartphone.More Detailed Options: Users can compare facilities per hotel and select hotels in detail, as well as make special requests such as favorite food menus for breakfast, lunch, and dinner. Less Chance of Running Out of Room: With online booking, there is less risk of running out of rooms, unlike walk-in bookings that do not provide immediate room availability information. And Easy Verification Process: The online hotel check-in process can also be simplified, where guests can verify their identity digitally through the app, eliminating the need to submit a physical ID in person. However, for sustainability, a fast maintenance, update is needed to be able to answer all customer needs quickly.

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AUTHOR CONTRIBUTIONS

All Author is responsible for building Conceptualization, Methodology, analysis, investigation, data curation, writing—original draft preparation, writing—review and editing, visualization, supervision of project administration, funding acquisition, and have read and agreed to the published version of the manuscript.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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