

## Online Tax Payment System Based On Android Application

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### ABSTRACT

**Received:** 14 February 2026

**Revised:** 25 February 2026

**Accepted:** 17 March 2026

**Available online:** 29 March 2026

#### **Keywords:**

*Payment Gateway, Online Tax Payment, Android*

The technological era has greatly assisted society in various fields. One of these is the online payment system. Online payment systems greatly facilitate the public in accelerating payment transactions. Online payment systems, commonly referred to as payment gateways, can be implemented for the development of any payment system. In Indonesia itself, there are several payment gateways that are developing, one of which is Midtrans. In this study, the Midtrans payment gateway is used as a system for online PBB tax payments via Android-based smartphones. The programming language used in developing the Android application is Java, and Firebase Firestore is used to store PBB tax data. The Midtrans payment gateway has the advantage of being able to make payments anywhere, such as through bank transfers, credit cards, GoPay, Indomaret, Alfamart, etc. This system is expected to facilitate tax officials and the public in resolving payment process issues.

## 1. Introduction

Urban and rural land and building taxes are currently managed independently by local governments. However, most land and building tax payments to the government are still made in cash and directly at designated tax payment locations. Online payment systems have been developed by banks and non-banks as payment system providers in Indonesia. Midtrans is one such online payment system provider from Indonesia.

The number of smartphone users in Indonesia is increasing. Busy lifestyles make people reluctant to leave their homes and rely on smartphones for their daily needs. For example, in the technological era, payment gateways or online payment systems have made transactions easier. The implementation of payment gateways significantly speeds up transactions because they support various payment methods, such as bank transfers, credit cards, GoPay, Indomaret, Alfamart, and others.

Long queues and limited payment locations are obstacles to land and building tax payments. These issues must be addressed quickly to ensure timely

tax payments. An online tax payment system based on an Android application is the perfect solution to address this issue. In addition to its usefulness for the public, the online tax payment system makes it easier for the public to summarize their tax payments.

### 2. Problem Formulation

- Based on the background outlined above, the following problem formulations can be formulated:
- How should an online tax payment system application based on an Android application be designed?

### 3. Problem Limitations

Based on the problem formulation mentioned above, the problem limitations to be analyzed are as follows:

- The tax payment that can be made is the Land and Building Tax (PBB) tax in Ponorogo Regency.
- The tool used to design this application is Android Studio.

- Given the large amount of tax data in Ponorogo Regency, the author only entered a few tax data into the database.
- The application being designed is still in test mode.

#### 4. Objectives

The author's objective in conducting this research, entitled "An Online Tax Payment System Based on an Android Application," is to design an online tax payment application based on an Android application.

#### 5. Benefits

The benefits of this research are as follows:

- Making it easier for the public to check tax bill data.
- Make it easier for the public to pay taxes.
- Make it easier for tax officials to summarize tax payment data.

## 2. Literature Review

#### 1. Tax

Tax is a mandatory contribution from individuals or corporations to the state, enforced by law, without receiving any direct compensation and used for the common good as general expenditure within a country.

Land and building tax is a levy on land and buildings arising from the profit and/or socioeconomic status of an individual or corporation that holds a right or benefits from it. [1]

#### 2. Application

An application is software developed using a specific programming language and functions to process various types of data to facilitate human activities in accordance with the purpose of the application. [2]

#### 3. Android

Android is a Linux-based operating system developed by Google that can be developed, modified, and distributed by others. The Android operating system is designed for touchscreen devices such as smartphones and tablet computers. [3]

#### 4. Firebase

Firebase is a solution offered by Google to simplify the work of developers in developing applications. With the many features offered by Firebase, back-

end developers can easily develop their applications.

Firebase has several features that can be used by back-end developers, namely:

- Firebase Authentication
- Realtime Database
- Firebase Firestore
- Firebase Remote Config
- Firebase Cloud Messaging
- Firebase Storage
- Firebase Hosting
- (<https://firebase.google.com/docs/firestore/?hl=id>)

#### 5. Java

Java is a multi-platform, object-oriented programming language that can run on various operating systems. Java was created by Sun Microsystems in 1995. Using the Java programming language, developers can build desktop-based applications, web applications, and more. Developers simply create a single program using the Java programming language and, after compiling it, it can be run on different platforms with minimal or no changes to the Java code. [4]

#### 6. Android Studio

Android Studio is an Integrated Development Environment that can be used to create Android application software with the APK extension. Android Studio is developed on top of IntelliJ Idea by JetBrains. Android Studio is a development IDE for Eclipse. As a development of Eclipse, Android Studio differs in its build environment. Android Studio uses Gradle as its build environment, while Eclipse uses Ant [5].

#### 7. Midtrans Payment Gateway

Midtrans is an online payment service provider in Indonesia. Midtrans offers a wide range of payment methods, including ATM transfers, credit cards, Indomaret, GoPay, and more. Established in 2012, Midtrans aims to provide the best solutions for Indonesian e-commerce by facilitating online payments for both merchants and users [6].

## 3. Method

#### 1. Data Collection

The data collected was tax data from the tax office in Ponorogo Regency. The collected tax data was land and building tax (PBB) data, which was randomly selected, with only a few pieces of data being entered into the database.

## 2. Designing a Level 0 DFD

A Level 0 DFD, also known as a context diagram, is a diagram that depicts an entire system. A Level 0 DFD can be seen in Figure 1.

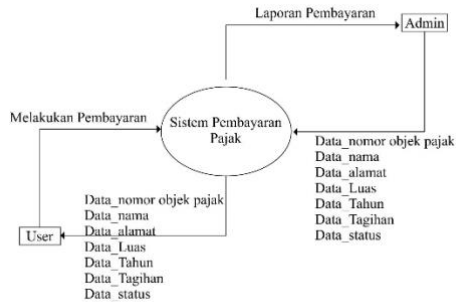


Figure 1. DFD Level 0

## 3. Designing Level 1 DFD

Level 1 DFD is a data flow diagram resulting from the breakdown of Level 0 DFD, as seen in Figure 2.

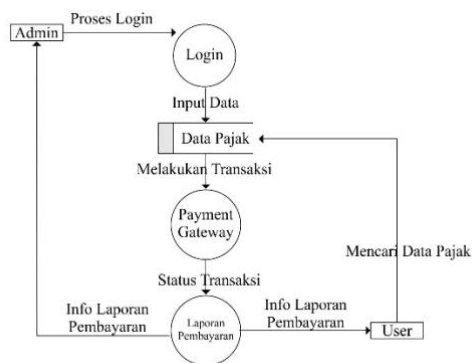


Figure 2. DFD Level 1

## 4. Flowchart Design

A flowchart illustrates the flow of an application. The flowchart for this application can be seen in Figure 3.

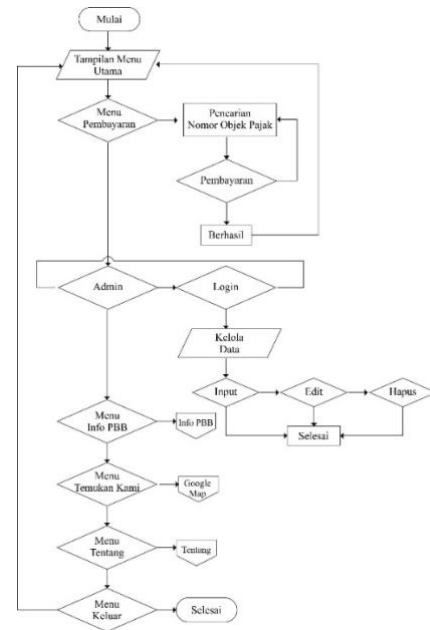


Figure 5. Midtrans

## 3.1 Data, Materials, or System Components

To start using this application, users must search for data in the payment menu according to the tax object number.

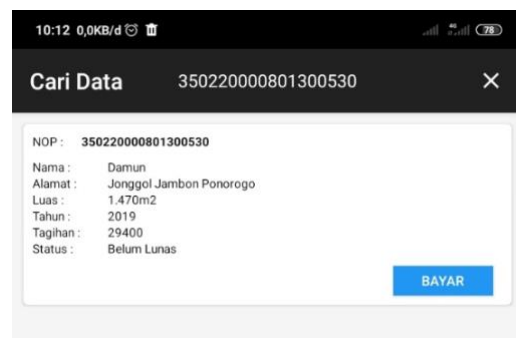


Figure 6. Searching Data

## 4. Results and Discussion

By pressing the pay button, you will be directed to the payment details in the Midtrans payment gateway, as shown in the image below.

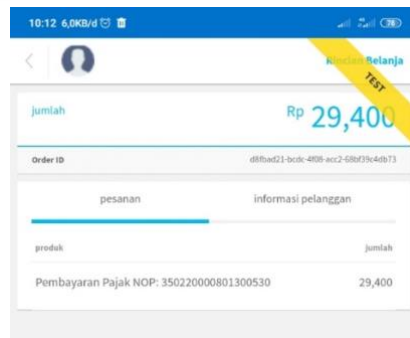


Figure 7. Payment Details

The Midtrans payment gateway offers multiple payment methods, allowing the public to choose the tax payment method they prefer.

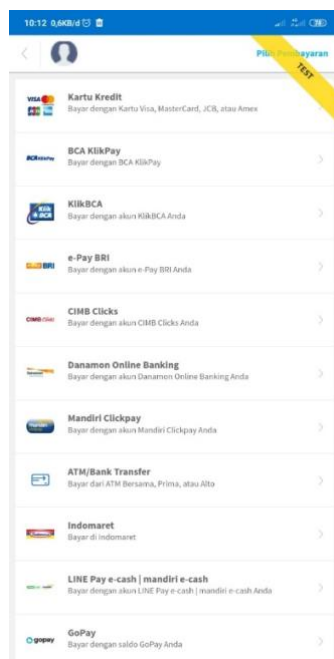


Figure 8. Midtrans Payment Gateway Payment Method

## 5. Conclusion

The conclusion of the system discussed above is that with this application, the public can easily check tax data and by implementing the Midtrans payment gateway as an online payment system, users can make PBB tax payments according to their wishes.

## Acknowledgment

This work was supported by the Universitas Muhammadiyah Ponorogo. The authors would like to thank the faculty members and colleagues who provided valuable feedback and suggestions for the improvement of this online tax payment system.

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