UNIVERSITI TEKNOLOGI MARA

IOT BASED VOTING SYSTEM FOR UITM'S STUDENT ELECTION

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ABSTRACT

A smart voting system is designed based on an Internet of Things (IoT) and offers users with a high level of security using an offline-online hybrid voting system. This system is developed using a two-way verification process based on student ID number and biometric fingerprint. This project is a combination of a smartphone and microcontrollers. After the voter completed the voting process, the results of the voters will be transferred via Appsript and linked to Google Drive for data management and displayed on a smartphone. The users are directed to the voting candidate page if they enter the incorrect number ID. Based on the simulation result, the smart voting system with the two-way verification can provide a reliable voting process that allows users to cast ballots with high level security, leading to an efficient management of the voting results. For the future work, further enhancement can be explored, and the functionality of the system can be enhanced.

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CHAPTER 1

INTRODUCTION

1.1   Research Background

In today's world, electronic components are advancing, with a particular focus on applications that benefit humanity. Many researchers aspire to introduce their new technologies to the modern world in light of this trend.

The IoT based fingerprint voting system aims to increase voting efficiency and securityThis system employs a two-way verification method, requiring both user ID and fingerprint authentication to access the next stage of the voting process. Using a network of sensors and Arduino UNO microcontrollers, this system caters to those who prioritize the convenience and accuracy of the voting process. Users can cast their votes remotely, with real-time monitoring and authentication facilitated through fingerprint recognition.

The primary goal of this project is to efficiently manage the collected voting data using the IoT system, employing either a dedicated app or Excel to organize and store the information. Establishing a robust security system is the initial step users must consider before commencing the voting process. This not only safeguards the integrity of the electoral process but also establishes trust among stakeholders.

Practically, this IoT-based fingerprint voting system has the potential to significantly reduce the need for manpower on election days. The system's autonomous nature allows it to manage and oversee the entire voting process with minimal human intervention. This represents a shift in the electoral landscape, where reliance on manpower decreases, and the system becomes self-sufficient in managing and securing electoral data.