A Major Project report on

ATM THEFT PROTECTION SYSTEM USING FINGERPRINT SENSOR

Submitted to

Jawaharlal Nehru Technological University, Hyderabad

In partial fulfillment of the requirement for

The award of degree of

BACHELOR OF TECHNOLOGY

In

ELECTRONICS & COMMUNICATION ENGINEERING

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2022-2023

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CERTIFICATE

This is to certify that the major project entitled "ATM THEFT PROTECTION SYSTEM USING FINGERPRINT SENSOR" submitted to JNTUH is carried out by the following students of IV B. Tech in the partial fulfillment for the award of the B. Tech degree in Electronics and Communication Engineering during the academic year **2022-2023**.

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ABSTRACT

The primary objective of this project is to enhance ATM security and safeguard against potential thefts. To achieve this, the project leverages the capabilities of the Arduino Mega 2560, a microcontroller board selected for its extensive pin count, enabling seamless integration of various components. The system design incorporates two crucial elements: a fingerprint sensor known as the R307 and a GSM module responsible for transmitting a One-Time Password (OTP) to the user's mobile device. The OTP serves as a means to verify the user's mobile number, adding an extra layer of authentication.

The operational flow of the project follows a well-defined sequence to ensure a secure transaction process. Initially, the user is prompted to place their finger on the fingerprint sensor for scanning. The fingerprint data is then compared to the stored records for authentication. Upon successful verification, an OTP is generated and sent to the registered mobile number associated with the user. This OTP delivery mechanism leverages the GSM module's communication capabilities, enabling a seamless transmission process.

Subsequently, the user is prompted to enter the received OTP using a keypad. The system compares the entered OTP with the one stored in its memory. If there is a match, indicating the user's identity has been verified, the transaction is initiated, allowing the user to access the ATM services. However, in the event of an incorrect OTP entry, the system immediately suspends the transaction and requests the user to rescan their finger, initiating the authentication process anew.

In summary, this project relies on the Arduino Mega 2560, fingerprint sensor (R307), and GSM module to create a robust and comprehensive ATM theft protection system. By combining the power of biometric authentication through fingerprint scanning with the security of OTP verification, the system effectively prevents unauthorized access to the ATM. Furthermore, this integrated approach ensures a reliable and efficient transaction process for legitimate users, providing peace of mind and instilling confidence in the ATM security measures.

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