UNIVERSITI TEKNOLOGI MARA

ANTI-THEFT BICYCLE LOCK SYSTEM

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ABSTRACT

This project introduces an Arduino-based anti-theft bicycle lock system, utilizing an Arduino Uno microcontroller in conjunction with a keypad, LED indicators, a buzzer, and an LCD display. The system enhances bicycle security by requiring user authentication through a keypad, with the LCD display providing real-time feedback on system status. To deter theft, the system features a bright LED indicator and a loud buzzer, serving as visual and audible deterrents. The Arduino Uno controls the locking mechanism, engaging a physical lock only upon successful authentication. Anti-tamper features trigger the alarm and notify the owner in case of unauthorized manipulation. The user-friendly design, combining visual and audible deterrents, offers an effective and customizable solution to enhance bicycle security, while the Arduino platform allows for scalability and future enhancements.

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INTRODUCTION

1.1 Research Background

In an era where bicycles serve as a popular and eco-friendly mode of transportation, the unfortunate reality is that bicycle theft has become a prevalent concern. To address this challenge, innovative solutions are imperative. This introduces the Anti-Theft Bicycle Lock System a cutting-edge approach to safeguarding your valuable two-wheeled companion.

Our Anti-Theft Bicycle Lock System goes beyond traditional locking mechanisms, incorporating state-of-the-art technology to provide an unparalleled level of security. This intelligent system is designed to thwart even the most determined thieves, offering peace of mind for cyclists who rely on their bicycles for daily commuting, recreation, or exercise.

Key features of the Anti-Theft Bicycle Lock System include advanced materials resistant to tampering, a robust and tamper-evident locking mechanism, and integration with smart technology. The system utilizes modern connectivity options, such as Bluetooth or GPS, allowing users to track their bicycles in real-time using a dedicated mobile app. In the unfortunate event of a theft, the system's alert notifications ensure swift response and increased chances of recovery.