TITLE: DEVELOPMENT OF A SMART DOOR LOCK AND INTERGRATED SECURITY ALARM SYSTEM FOR RELIABLE OPERATION DURING POWER FAILURE

Introduction:

Problem Statement

Smart door lock and integrated security alarm systems are widely used to improve security in homes and offices. However, many existing systems depend entirely on a continuous main power supply. When power failure occurs, these systems may stop functioning, leaving the premises unprotected or denying authorized users access. In addition, the absence of a fail-safe mechanism can cause security risks during emergencies. This limitation reduces the reliability and effectiveness of smart door lock systems. Therefore, there is a need to develop a smart door lock and integrated security alarm system that can operate reliably during power failure by incorporating backup power and a fail-safe mechanism.

General Objective

To develop a smart door lock and integrated security alarm system that operates reliably during power failure.

Specific Objectives

a) To design a smart door lock system with an integrated security alarm.
b) To incorporate a backup power supply to ensure system operation during power outages.
c) To implement a fail-safe mechanism for secure and controlled access in emergency situations.
d) To test the system performance under normal power and power failure conditions.
e) To improve the reliability and security of access control systems.