# Department of Computer Science and Engineering

# IOT PROJECT

## GSM BASED DOOR AUTOMATION SYSTEM

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# ABSTRACT

Security and accessibility are crucial concerns in modern infrastructure, making automated access control systems essential. Traditional door locking mechanisms are prone to security risks and inconvenience. A GSM–Based Door Automation System provides a secure, cost-effective, and remote-controlled solution by utilizing GSM modules and relay mechanisms. The system allows authorized users to unlock doors via SMS authentication, reducing the need for physical keys and enhancing security. This project minimizes human intervention, ensures reliable access control, and enhances safety by preventing unauthorized entry. The integration of IoT (optional) can further improve real-time monitoring and remote access capabilities.

# PROBLEM STATEMENT

Traditional door security systems do not provide real-time alerts, making it difficult to monitor unauthorized access, especially in homes with small children. Children under the age of 5 may unknowingly open doors, leading to safety risks such as wandering outside unsupervised. Additionally, security threats arise when intruders gain access without immediate detection. A GSM-Based Door Automation System addresses these concerns by sending an SMS alert to the user's mobile phone whenever the door is opened, ensuring real-time monitoring, enhanced security, and improved child safety.

# SOLUTION

The GSM-Based Door Alert System provides a real-time security notification by sending an instant SMS alert to the user's mobile phone whenever the door is opened. The system consists of an Arduino Uno, a magnetic door sensor, and a GSM module (SIM900/800L) for communication.

When the door opens, the magnetic sensor detects the change and signals the Arduino, which then triggers the GSM module to send a predefined alert message to a registered mobile number. This ensures that the user is immediately informed about any unauthorized access.This automated security system helps enhance home safety by enabling remote monitoring, reducing security risks, and providing timely alerts without requiring internet connectivity.

# COMPONENTS

1. **Arduino Uno** – A microcontroller board that processes sensor data and controls the GSM module to send alerts.
2. **GSM Module (SIM800L/SIM900A)** – A communication module that sends SMS alerts to the user's mobile phone when the door is opened.
3. **Magnetic Door Sensor (Reed Switch)** – Detects door opening and triggers the Arduino to send an alert.
4. **Power Supply (Adapter/Battery)** – Provides necessary power to the system components.
5. **Connecting Wires** – Used to establish electrical connections between the components.

# BENEFITS

1. Real-time Security Alerts
2. Remote Monitoring
3. Cost-Effective
4. Easy Installation & Maintenance
5. No Internet Dependency

# THANK YOU !