Magnetic Door/Window Sensor Project Proposal

Project Overview

This project involves using a magnetic reed switch to detect whether a door or window is open or closed. It's a basic security system that can be upgraded by adding features like an alarm, LED indicators, or wireless notifications.

Group members

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Components Required

• Reed Switch: Magnetic sensor that detects the presence of a magnet when the door/window is closed.
• Magnet: Placed on the moving part of the door/window to trigger the reed switch.
• STM32F0: Microcontroller to process the sensor's input.
• Buzzer: Optional, for an audio alert when the door/window is opened.
• LED: Optional, to indicate the state of the door/window (open or closed).
• Power supply: Battery or external power source for the system.

Basic Working Principle

1. When the door or window is closed, the magnet aligns with the reed switch, creating a closed circuit (detecting that the door is closed).
2. When the door/window opens, the magnet moves away from the reed switch, breaking the circuit, and the STM32F0 microcontroller registers this change to trigger an action.