

An Improved GSM Technology-Based Microcontroller Multi-Sensor Home Security and Monitoring System

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Abstract: Meteorological conditions like temperature, wind, clouds and precipitation (rainfall) influence the condition of comfort inside a house especially through entrances such as windows; hence the need for proper control (either to close or open) of windows in a building. This work, an improved automatic window with rain activator is aimed at having window control made convenient to home owners by the use of a switch to open or close the window. The design was conceived after observing the stress mechanical windows give us in our control of it to let air and light come into the house; therefore, advancement in electronics technology was used to design this automatic window. However, unlike existing automatic windows, a rain sensor has been included in this work to help shut the window automatically when rain is falling. To achieve this, a moisture sensor is incorporated in the design to sense rainfall, a forward and reversing DC Motor to move the window pane back and forth, a bistable circuit to control the movement of the DC Motor and a power supply to power the system. The design was tested and was found to work effectively in convenient control of window for comfort of the homes and in protecting the homes from rainfall.