Home Automation System using Arduino And Sensors

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Abstract: *The design and construction of a home automation system employing an Arduino microcontroller, PIR (passive infrared), LDR (light-dependent resistor), and LM35 temperature sensors are presented in this research article. On the basis of motion detection, light monitoring, and temperature monitoring, the system promises to give effective control over a variety of home equipment. Real-time data collection and processing are made possible by the integration of these sensors with Arduino, enabling automated control and energy optimisation in a home setting. The paper describes the hardware configuration, sensor interface design, and software programme development for the home automation system. According to experimental results, the system is effective at detecting motion, adjusting lighting settings, and controlling temperature, which eventually improves convenience, energy efficiency, and security inside the home.*

Keywords: *Home Automation System, Arduino UNO, PIR Sensor, LDR Sensor, LM35 Sensor, Breadboard*

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