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Sensing Arm Based on Home Automation

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Abstract: *This project presents a gesture-controlled home automation system using a wearable sensing glove. The proposed system enables users to control household appliances through simple hand and finger movements. Flex sensors embedded in the glove detect finger bending and convert it into electrical signals. These signals are processed by an Arduino microcontroller, which controls appliances such as lights and fans via a relay module.*

The system is specifically designed to assist elderly individuals, patients, and physically challenged persons who may find it difficult to operate conventional switches. Unlike complex IoT or camera-based systems, this solution is cost-effective, easy to operate, and does not require internet connectivity. The proposed design demonstrates how simple sensors and embedded systems can provide a reliable and user-friendly home automation solution that enhances comfort, safety, and independence..

Keywords*:* Sensing Glove, Home Automation, Arduino, Flex Sensor, Gesture Control

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