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Multi-sensor home security systems

Okechukwu Tobechukwu Jideofor
Cardiff University, UK

Home security has always been a major consideration when living in a house, various home security systems have been developed to try and reduce the crime rates that occur in our homes yet most of these systems despite their high cost of purchase, lack in certain respects to the different form of securities needed in the home. This has led to the reluctance of many people in adopting its use especially in developing countries such as Nigeria where home security is still a major issue. The use of a prototype Multi-sensor home security system which features a security alert system that incorporates smoke sensors, motion detector sensor and door status sensor alert system increases the effectiveness of a home security system as well as its acceptance by the public. A central monitor (microcontroller) is provided for monitoring the status of each sensor. To provide a communication between sensors and the central monitoring system (microcontroller), the sensors are connected to the microcontroller such that when one of the sensors are disturbed, the microcontroller establishes an alarm, displays the sensor being triggered on a seven segment display and as well send information to the home owner's GSM phone in the form of text messages (SMS) alerting the home owner which of the sensors has been disturbed. This is useful in cases where the home owner is not available in the house. This project was designed using prototyping as its methodology and Assembly language to code it by incorporating in it microcontroller, smoke detector sensor, motion detector sensor, door status sensor, seven segment display, GSM set, and passive components as resistors and capacitors, etc. as well as questionnaires to gather useful information of the public (specifically home owners). The questionnaires were used on two accounts, i.e., before the prototype was developed and after it was developed and shown to the home owners. This proved to be helpful in understanding that a multi-sensor home security system is much more appreciated than the singularly manufactured one purpose security system. This project is motivated by the need to have a more efficient security system in our homes against burglary and fire disasters which are the major cause of loss of lives and property in our homes. With these systems, if widely accepted and installed in various homes, this would undoubtedly reduce the dangers of a home security and increase the sense of safety amongst the public.

ofor_321@yahoo.com

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