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Home Appliance Control and Energy Management Using PIR Sensors and ARM Processor

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Abstract

In recent scenario saving energy has become one of the most important issues . The maximum wastage of energy is due the inefficient use of the consumer electronics. These days when there is a demand of comfortable home management but a considerable increase in the electricity bills. The protomodel aims a providing the owner the ability to automatically perform smart load operations providing automatic power cut off system when the home appliances are not in use and also an automatic monitoring of consumption of electricity which alarms the user about his consumption taking into account use of home appliances , customer's preference and customers presence. In the proto model the Pyroelectric infrared (PIR) sensors are used to detect the presence of people in the room and thus perform energy management as they are used as powerful people presence triggerers. The alarming system is provided by using the smoke and gas sensor and GSM is used in case of emergency. A separate remote control is provided for the flexible control and use of the electric appliances for the comfortable use. A light dependent resistor(LDR) provides th efficient anagement of energy based on residential and outdoor light intensity. The proposed lighting system reduces approximate total power consumption up to 25% And all this is achived by using an ARM processor.

Keyword: Home, Appliance, Control, Energy, Management, PIR, Sensors, ARM, Processor