

ABSTRACT

IoT (Internet of Things) based Home Automation system signifies the application of computer technology and internet for controlling the home appliances easily and remotely from any place in the world. As technology is evolving day by day and almost every equipment is getting automated, so there is seen a gradual increase amounts of automation in homes around the world because it reduces human labor and provides ease and comfort in people's busy lives. Our project represents a semiconductor based Home Automation system which can control the switching of the power outlets in terms of controlling various electrical appliances, such as lights and fans or any inductive load that can be voltage regulated and switching various devices on and off. This system contains a Zero Crossing Detector (ZCD), a Thyristor based switching circuit to control the power output to the loads and also a Web Server along with a database and API functionality since the whole unit needs to be controlled through the web. Although, the Home Automation is becoming popular worldwide, it is not vastly being used in Bangladesh because establishing a Home Automation system seems very costly to the majority of people in here and besides, many people here are still not technologically literate where they cannot directly interact with computers. Thus, our proposed system brings a solution to this problem which is affordable, convenient and simple and requires minimal knowledge for users to operate it. This system can not only be implemented in residential buildings but also can be used in office buildings, hospitals etc to manage certain room conditions.