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ABSTRACT

The Internet of Things (IoT) has become a very important tool in the materialization of Smart homes to make one's life easier and convenient as well as secure for one's family. This report focuses on the use of IoT for smart home automation using appliances and program that allows remote controlling using web browser, which was found to be user-friendly as well as convenient, safe, and comfortable. This project focuses on various hardware used, their benefits and drawback, the software module used as well as the potential in each appliance for the future, as well as various appliances that are commanded and controlled via the integration of IoT. A fire prevention system using gas and smoke detector using MQ-2, a surveillance system using PIR motion sensor, a piezoelectric-buzzer for siren to alert motion, Appliance automation system by controlling lights as well as a fan, and providing real-time information regarding temperature and pressure of a room using BMP-180, and an alert system via email to the user was considered for this project. Cost reduction planning has been done in the choice of hardware used and compact coding to make the product affordable while being energy efficient. Feasibility study was conducted which found that the majority of 77.33% users were willing to install the proposed IoT system to their home which could be done under affordable price of NPR. 5,000.

Keywords – IoT (Internet of Things), Smart Homes, Home Automation, EP32, BMP-180, MQ-2, PIR, Piezoelectric-buzzer.