

# Power Saving, Safety, and Remote Controlling Smart Building Based on IoT

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**Abstract--** Currently, everything has become digitalized due to the rapid and remarkable advancements in technology in all aspects of life especially the Internet and smart technology. Automation system (AS) is a part of this rapid development due to its multiple and various utilization such as smart building control systems. This paper will study smart building control system, which monitors and manages power consumption and safety. It presents two different models named remote control appliances and safety. The first model is employed to reduce power consumption by controlling building appliances remotely and the second model consists of sensors, which increase the safety by monitoring temperature & humidity, gas and fire in buildings. The system's design is based on Internet of Things (IoT) through using NodeMCU microcontroller and Blynk platform via Internet connection. The building appliances such as A/C, water heater (W-H), TV and lights are connected to the control board (CB). The owner of the building can monitor and control the status of appliances via Blynk application through Internet connection. Moreover, safety is based on sensors such as DHT22, gas and flame sensors, which are placed to monitor the vulnerable areas in the building and sending alert message (notification and email) in real-time to the owner via Blynk Application if there are any critical values detected by the sensors. Such monitoring system increases the building safety. The implementation results of the presented system shows a major impact on power saving which reduce power consumption as well as increasing safety of the building.

**Keywords--** Smart building, NodeMCU, IoT, Blynk application, Control and Monitor, safety