

## **ABSTRACT**

Smart building is a technology that is developing rapidly at this time. Smart building is one example of the implementation of IoT, where the concept is to integrate information and communication technology with physical objects such as buildings, vehicles and many other things, and all of that is connected with internet access. One of the big problems when building smart buildings is security and uncontrolled use of energy, which results in wasted energy wastage. For this reason, in this study, a monitoring and automation system prototype was created in smart building using MQTT encrypted communication protocol as data security between microcontrollers connected to Raspberry Pi as a server connected to sensors that always send data in real time. and the monitoring website will display temperature and humidity data. For the automation system using another Raspberry Pi that works as a client and will be connected to the Raspberry Pi server via the BACnet protocol using the ip address of each device then the relay will connect to the client and will turn on the lights as the output. Then the temperature and humidity data will be sent to the monitoring website using MQTT, so that users can monitor more easily.

Keywords — IoT, Smart Building, MQTT, BACnet, Raspberry Pi.