

## ABSTRACT

The Internet of Things (IoT) are increasingly developing at the present to connect the things to each other through the internet connection. From which, data transmission protocols play a significant role for devices and machine in an internet of things. Recognizing the singularity of one another, communications become easier to exchange data without any human intervention. However, behind the IoT services, there are no specific protocols for communication and architecture as well. Thus both MQTT and CoAP protocols are chosen in term of the Quality of Service (QoS) because they are significantly playing for the internet of things (IoT) application development by ensuring the message transmission among the Machine-to-Machine (M2M) communications. In view of IoT implementation, the study focused on QoS by looking at MQTT and CoAP protocols and compared the result between the protocols such as average data throughput, the average round-trip delay time and packet loss of publishing and subscribing the data in the real environment that is smart environment monitoring system. Further, real devices were used such as raspberry pi 3, NodeMCU/Arduino UNO and temperature sensors. Thus, the flowchart of data transfer between client and server was proposed due to the evaluation performance of the communications system that can measure the QoS of the protocols.

**Keywords** - M2M Communications, Internet of Thing, Quality of services, MQTT, CoAP protocols.