IMPLEMENTATION OF MESSAGE QUEUEING TELEMETRY TRANSPORT PROTOCOL ON INTERNET OF THINGS-BASED PLANT MONITORING SYSTEM

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ABSTRACT

The development of internet users in this modern era goes so fast and covers various aspects. An example of this Internet use concept that recently grows is the Internet of Things (IoT) concept. Data can be transferred directly using IoT through devices, but the duration tends to be slow. A support system that could be applied to IoT devices is required to speed up data transmission duration. The aim of this research titled Implementation of Message Queueing Telemetry Transport (MQTT) on Plant Monitoring System Based on Internet of Things is to support data transmission speed up on IoT devices. The implemented method in speeding up data transmission on IoT devices is by collaborating IoT and MQTT protocol to speed up data transmission on public throughout brokers. MQTT protocol use requires both two sides' implementation, sender and receiver. Based on the system testing, the MQTT protocol has successfully been implemented, marked by the IoT device that can transfer all data and the website to receive those transferred data. Based on the system's reliability check throughout the implementation of the MQTT protocol, the IoT device needs time to build a connection to the MQTT broker with an average of 0,1 seconds. Besides, the time required for IoT device to transfer data, there is a difference that impacted by the time interval of each data transfer process, ten milliseconds interval requires 0,0035 seconds of time average, 100 milliseconds interval require 0,09 second of time average, and a second interval requires 0,99 second of time average.

Keyword: Monitoring system, Plant, humidity, Internet of Things, MQTT