ABSTRACT

Hot water usage for bathing is one of technology utilization that has developed. By using a Water Heater, someone can get water with the desired temperature, but it takes a long lag time to get water to reach the temperature target. Therefore, in this system has been designed an automatic faucet which can be active taps in accordance with the high water in the bathtub or shower with the help of ultrasonic sensors and water pump. Both systems use sensors utilizing machine-to-machine with MQTT Broker controlled by an Arduino Mega 2560 microcontroller and Android-based applications. According to the system test, accuracy level of temperature is 97,60% with average time to finish the system is 18 minutes 30 seconds. Testing was done using the main bath with a volume of water that will be filled are ± 12.320 cm^3, the volume of hot water provided is ± 9.240 cm^3. In addition, some factors that affect the time to reach the targeted temperature include the type of pump used, much power is used by the water heater, and the size of the main tub container used as a container for mixing a hot water temperature and the normal water temperature.

Keywords :   automatic faucet, prototype, machine-to-machine, water heater, distance