ABSTRACT

At this time, transportation, ESPecially motorized vehicles or machines, is an important part of human daily life. The use of motorized vehicles is always accompanied by the use of fuel which can cause excessive heat (over heating effect). One of the causes of damage or decreased performance in vehicles is a lack of water in the radiator or radiator leaks, therefore the cooling system has an important role in maintaining engine performance in a stable condition. The most efficient and effective engine performance occurs at temperatures between 80 and 90 °C. The existence of IoT technology can make it easier for vehicle owners to always monitor the condition of their car engine. In this study, researchers wanted to design a tool to monitor radiator water temperature and water volume in radiator water reserves using an Android application. The Dallas DS18B20 sensor is used to detect the temperature of the radiator water, while the water level sensor is used to detect the minimum volume in the radiator water reserve tank so there is no shortage and the nodemcu ESP32 as the microcontroller then the wireshak application to see the quality of service (QoS) of the internet network used. This monitoring is expected to prevent engine overheating. The experimental results show that the difference in the reading value of the sensor and the calibrated measuring instrument is 0.18ºC, while the error is 0.23%. Tool testing was carried out by heating water in a span of 10 minutes, and the highest temperature was obtained at 95ºC and can be accessed with the Android application.

Keywords: Radiator, Car cooling system, Overheat, IoT, QoS.