

ABSTRACT

Indonesia is the country with the most population number 4 (four) in the world. According to the Pew Research Center in 2019, Indonesia ranks 4th with the largest population in the world with a total population of 274 million people. With the large population of Indonesia, it is possible that people will be vulnerable to various kinds of diseases due to an unhealthy and unhealthy lifestyle, especially the behavior to always wash their hands. Based on Riskesdas data in 2018, the habit of good and correct hand washing behavior in Indonesian society shows 49.8% of the total population in Indonesia. These data show that the majority of the population in Indonesia still lacks knowledge regarding how to wash hands properly and correctly according to the recommendations of the World Health Organization (WHO). In the current era in 2020 requires people around the world to start getting used to always washing their hands when going to do activities or after doing activities. So that a thorough education is needed with more interesting and modern media in this era of digitalization, one example is the use of microcontroller technology for a control system that can run an automatic hand washing pump.

Several previous studies have been conducted and are currently being used as references in the Final Project research. One reference uses an infrared sensor as a sensor to detect an object or hand when running the tool. In previous studies still using a powerbank as a voltage source, then in this final project using a battery (accumulator) with a voltage source of 12V which will supply every device so that it can work properly.

The results of the detection distance test, the infrared sensor can be set low and high when it detects an object. In the test results, the water sensor only works at a distance of 7cm. then on the soap sensor the distance from an object is only 5cm. on the dryer sensor the distance needed for the tool to function is 5cm. Subsequent results on height and volume measurements on esp32 will be sent with the help of wifi which will be received by firebase. The website section will display a bar chart and display data sent via firebase.

Keywords: Microcontroller, Sensor, Firebase