ABSTRACT

Research has shown that 1 in 4 college students were dehydrated, with an additional 37,5% shows signs of it. Prolonged dehydration can prove a serious threat to human health, it affects physical and cognitive performance, therefore could be a problem since attending classes requires concentration. The need of hydration is important but is not supported enough as shown by the lack of public facilities regarding drinking water in public area, especially in the halls of the School of Industrial Engineering in Telkom University. Regular bottled water can solve the needs of hydration, but it brings another problem that Indonesia faces right now, the plastic waste problem. In 2015, Indonesia is titled the world second highest plastic waste producing country with about 1,29 million metric tons of plastic debris entering the world oceans. Regarding the plastic bottle, in 2018 Indonesia had used about 8,6 billion of plastic bottle, ranked fourth as the world leading countries in bottled water consumption. As a measure against this problem, the Indonesian government launched the "1 Million Tumbler Movement" in 2019, aimed to decrease the use of plastic straw and bottles by using reusable water container such as tumbler. The movement however faced some obstacles, such as the lack of public facilities that provides drinking water refilling services. Therefore, to help sustain the movement to reduce plastic bottle usage while embracing the development of IoT and electronic payment, comes the idea of developing an automated dispenser based on IoT with integrated electronic payment and user control in form of an android application. The development will be carried using the waterfall approach as one of the most recognizable software development method. The study gives an output of an automated dispenser system that successfully fulfilled the system requirements, but however, still have a low performance as it shown delay time in fulfilling user request, with the mean of 14,431 seconds.

Keywords: Internet of Things, Android Application, Hydration