

## **ABSTRACT**

This document addresses the issues faced by relatives or families of elderly individuals who have a heavy dependence on medication and must take their medicine regularly according to a schedule. However, they cannot monitor whether the elderly person has taken their medication at home. To address this issue, a product called the "Medication Box with Automatic Reminder System Based on Internet of Things" has been designed. Although similar products are available on the market, their availability is still limited. Therefore, this document includes an analysis of various aspects of the problem to find the right solution. In this Capstone Design, an analysis and design of several solution options are performed, one of which is the "Medication Box with Automatic Reminder System Based on Internet of Things". This product is designed to meet several needs, including reminding the elderly to take their medication on time and providing information to family members and healthcare professionals if the elderly person does not take their medication. The designed product is expected to address these issues through features such as a voice notification system, medication monitoring via an application accessible to healthcare professionals or family members, and adequate medication capacity for 6 medication schedules per day. Testing conducted six times shows that the stepper motor can rotate according to the degrees and time set through the application. The average delay calculation on data captured by Wireshark, using the formula (delay result / total packets), results in an average delay of 0.01 seconds or 10.38 milliseconds (ms). This data provides insight into how fast or slow the application operates in sending and receiving data from the Firebase database, and the sound can be clearly emitted through a loudspeaker with a decibel range of 60 to 70 dB at a distance of 100 cm. This decibel level still falls within the threshold (NAB) for elderly individuals with hearing impairments. The conclusion of creating this device is that it can increase the likelihood of elderly individuals taking their medication regularly and on time.

Keywords: Elderly, Medicine Box, system IoT, Health Worker