ABSTRACT

The nutrition problem in Indonesia is very complex, with the community facing two major burdens, namely stunting and obesity. Stunting is still a serious problem, especially in young children. On the other hand, the obesity rate is also increasing, especially among adults and children. The high rates of stunting and obesity demand serious attention from the government and society to adopt healthy eating patterns and lifestyles as well as provide education on nutrition to address this problem. Comprehensive prevention and management efforts are needed to achieve optimal nutrition for all Indonesians. In order to address this nutrition problem, an Internet of Things-based food nutrition measurement tool was developed in this Final Project. This tool is an Android application that provides daily calorie limit recommendations based on age, height, weight, and gender. In addition, the application also provides information on the nutritional content of food, such as carbohydrates, energy, protein, and fat, based on a database connected to the application. This system can also weigh food in real-time and send data to the database. It is hoped that this system can help users control their calorie intake. The results of the system testing and analysis showed that the ESP32 weighing tool has good battery life and can weigh food with an accuracy of 73.3% and a precision of loadcell-1 of 99.91%, loadcell-2 of 99.97%, loadcell-3 of 99.70%, and loadcell-4 of 99.90%. The application can also call the weight value and calculate the nutritional value of the weighing tool with Firebase automatically. This system are expected to be a solution to addressing the nutrition problem in Indonesia.

Keywords: Nutrition, Android Application, ESP32