

ABSTRACT

Based on Riskesdas 2018, nutrition problems in Indonesia are still quite worrying, especially in the eastern part of Indonesia. The need for balanced nutrition is the solution to these problems. However, the majority of people do not understand the nutritional content of food, so we need a tool that can measure the nutritional content of a food.

This final project is designing a nutrient counting tool in the form of scales that can measure the weight of food. Measuring the weight of food will produce the nutritional value of a food. Two load cells will be installed in this tool which will be connected to the HX711 module to measure the weight of food. Arduino processes the signal generated by the HX711 module to produce a weight value. The weight value will be displayed on the LCD and sent to the Android application using Bluetooth connectivity. Calculation of food nutrition is done on the Android application based on the weight value that has been obtained.

The design of this tool produces an average accuracy rate of 98.441% for load cell-1 and 96.974% for load cell-2. This tool has a tolerance value of 1.61% for load cell-1 and 2.69% for load cell-2. The precision level of load cell-1 is 97.93% and the precision level of load cell-2 is 97.83%. For nutritional calculations carried out by the Android application, it has an average accuracy rate of 98.7% on calories, 95.9% on fat, 98.5% on protein, and 97.91% on carbohydrates. The tolerance level that is owned by the nutritional calculation by the application is 1.31% for calories, 1.34% for fat, 1.17% for protein, and 1.92% for carbohydrates. The level of precision possessed by the nutritional calculation based on the application is 99.24% in calories, 97.93% in fat, 98.57% in protein, and 98.01% in carbohydrates.

Keywords: Nutrition, Arduino Uno, Load Cell, Bluetooth HC-05