ABSTRACT

Urban agriculture is slowly becoming a trend and becomes one of the solutions to the problems gained in urban areas. With urban agriculture, urban society can cultivate vegetable crops easily without taking up much time. It is undeniable that land limitations are factor in the urban community which can not cultivate vegetable crops widely. The cultivation of vegetable crops using pots is alternative answer for the urban community, because of its ease which can be placed anywhere and does not require a large space area. However, the pot is not enough to answer the problems that exist in the real world, that requires the owner to perform routine plant maintenance that takes time and disrupt their routines.

In this final project, built a smart pot system that can monitor and maintain vegetable plants automatically for urban community. The built system has a sensor node, which is embedded hardware that serves to get the data of plants. The sensor node consists of a microcontroller and sensors that performs the data acquisition process of soil moisture, air temperature, humidity, and pH levels. Data acquisition results are then sent to the gateway for data processing which is then used by the user.

From the test conducted for 21 days obtained that the data acquisition process by the sensor node runs in accordance with a predetermined time range. It was found, however, that during the system testing there were error readings of the sensor by 0.17% for air temperature, 2.74% for air humidity, and 5.25% for soil moisture.

Keywords : *Urban Society, Urban Agriculture, Sensor Node, Data Acquisition.*