

## ABSTRACT

Hydroponics is the cultivation of planting by using water without soil with emphasize the nutrients of the crops. Hydroponic planting techniques have become a hobby for some people, especially in the urban that has little land to grow crops. In hydroponic cultivation techniques, water quality and nutritions content should be very observed. Inappropriate nutrition, will result in the growth and quality of the plant for a certain period of time.

In this final project has been realized android-based applications that serve to monitor and control hydroponic nutrients. This app is connected to the Arduino device on hydroponics via cloud service. In this application, user can know the real time condition of the nutrients concentration, temperature, and pH of water nutrients, as well as the volume of water at the tank. In addition there is a menu to display a list history of nutrients that have been issued and history of previous hydroponic conditions. With this application, user also can turn on or turn off the implemented automation system.

This applications have been build and tested with good results for each function. Evident by 0,0679 seconds average response-time test for Choose Plant function, 0,0437 seconds for tank size input function, 0,0493 seconds for add plant function, 3,0388 seconds for mode setting function and 2,7749 seconds for Drain Function.

***Keyword:*** *Hydroponic, mobile application, android, cloud service*