

## ABSTRACT

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*Research on the automation system to the hydroponic NFT [1] has been carried out to determine the function and hydroponic crop needs. The present study will add features and functionality of previous research automation system.*

*In the present study has added features to the microcontroller that is USB ASP as Downloader system. The downloader put together with a microcontroller making it easier to upload program. The sensors used are the same as the previous automation system, namely Ultrasonic sensor, temperature sensor (LM35), light sensor (LDR), the pH sensor. Different from previous research is at the water reservoir pump control using ultrasonic sensors and controls the water temperature using a Peltier to temperature sensor. At a certain height will turn on the pump and peltier will cool the water temperature so that the water temperature is stable in conditions of 22C - 28C.*

*Added features is the communication of data to be displayed on the Raspberry Pi as an interface for the user.*

*Keywords: Hydroponics, Automation Systems, Microcontroller.*