

## ABSTRACT

Various kinds of ornamental plants lately much favored by the community. However, along with the increasingly limited and reduced land area for crop maintenance especially for people living in urban areas, So we need to find a solution to overcome it. Verticulture is a system of cultivation of plants that are done vertically or stratified. With the existence of verticulture method and more techniques of control system technology, Can be combined to make it easier for people to cultivate plants even indoors. Internet support can also make everything more practical, easy and efficient.

In this final project, the design of an embedded system that utilizes the concept of internet of things so that embedded system can connect directly with internet. Embedded system is designed to facilitate users in watering, and control the micro-plant environment automatically using fuzzy logic method. Embedded system is developed by using three sensors namely temperature sensor and humidity sensor, soil moisture sensor, proximity sensor. The design has four actuators: Exhaust fan, solenoid valve, humidifier, LED Growth light. The design of smart indoor verticultur is put in the room. Thus, users can maintain plants with better results than plants that grow outside of the built system.

Thus, Smart Indoor Verticulture system can do the watering automatically with the maximum error for rate of flow water of 22.13 %. As for the system can perform the function of controlling the micro environment with a maximum error of 4.54%

**Key Words :** verticultur, internet of things, watering and control the micro-plant environment. fuzzy logic