# ABSTRACT

Food is a primary need for all humanity. Indonesia is a country with a very large population, reaching 265 million people. But the harvest from farmers is still not sufficient for the needs of all the people of Indonesia, due to crop failures due to poor pest or rice field irrigation. Therefore a controlled and monitored irrigation system is an important matter, so that lack of water can be minimized and farmers do not need to check their land regularly.

In this final project, a rice irrigation system is created which is able to monitor the plants found in the rice fields and be able to control the floodgates. This paddy irrigation system uses a NodeMCU microcontroller that is based on Internet of Things (IoT), where an object can send information in the form of data through a network without the need for human intervention. As a system that already uses IoT sluice can be opened remotely, and this system uses sensors that can check the soil water content needed by plants. This system can only be used by users who are already registered in the database so that the security level is sufficiently guaranteed. Through the Android application provided, farmers can see all the data needed and can control the floodgates.

The test in this study obtained the smallest end-to-end delay data is 0.214s with the largest throughput of 3018.86 Bytes / s. And also the system availability average of 98.305% and system reliability of 98.3003%.

Keywords: Internet of Things, Monitoring, control, Android Application, Microcontroller