

Intelligent Rainwater Reuse System for Irrigation

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Abstract : The technological advances in the area of Internet of Things have been creating more and more solutions in the area of agriculture. These solutions are quite important for life, as they lead to the saving of the most precious resource, water, being this need to save water a concern worldwide. The paper proposes the creation of an Internet of Things system based on a network of sensors and interconnected actuators that automatically monitors the quality of the rainwater that is stored inside a tank in order to be used for irrigation. The main objective is to promote sustainability by reusing rainwater for irrigation systems instead of water that is usually available for other functions, such as other productions or even domestic tasks. A mobile application was developed for Android so that the user can control and monitor his system in real time. In the application, it is possible to visualize the data that translate the quality of the water inserted in the tank, as well as perform some actions on the implemented actuators, such as start/stop the irrigation system and pour the water in case of poor water quality. The implemented system translates a simple solution with a high level of efficiency and tests and results obtained within the possible environment.

Keywords : internet of things, irrigation system, wireless sensor and actuator network, ESP32, sustainability, water reuse, water efficiency

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