

CHAPTER 1

INTRODUCTION

1.1 Background

On the first topic, the issue of water scarcity in Indonesia has become a serious problem lately. With human behavior that wasteful use of clean water especially when the use of water in the well dikarena not in charge of water use at the well makes the user arbitrarily in using water, it becomes the main problem. In addition, in the absence of a water discharge gauge used, the user does not know how much water discharge has been used, so that the use becomes wasteful that is not controlled. On the next topic, in this modern era of technological developments like today, humans are increasingly required to be creative and use technology to alleviate life in the activity. House gate and home security that still use manual method become the problem. Where a human must lock the gate of the house and monitor to manually secure is inefficient for some people who want to live more simply.

With these two problems, on the first topic issue, making an information system that can see the water discharge that has been accommodated for use and automatic water filling in the water reservoir is the solution. This information system can be built with a microcontroller such as an arduino connected to the Waterflow YF-S201 sensor to monitor the discharge water that has been stored in the water reservoir, the Water Level Sensor to find the upper boundary height and the lower limit of water for automation to turn on and off the Water Pump engine and Rain sensor that serves to give a message whether the water is pumped by Water Pump is flowing. In the second problem, remote door locks and security systems on the gate are the solution. In this solution humans can be more efficient to undergo akfitasnya. Where a Servo SG90 device connected by an arduino serves to lock and unlock the gate. And there are also two Infrared Sensors that

are also connected by arduino which serves to increase the security of the gate, to be detected if the gate is opened by force.

In this project, from two problems that can be built with information system, automatic control and monitoring that connected with IoT Server. The manager used to connect with IoT Server in this project is Domoticz. With domoticz, a user is easier to monitor the water discharge that has been used, can fill the water reservoir automatically, can lock the gate through domoticz and can monitor security gateway from long distance.

1.2 Scope

The system used to solve the problem using an Arduino microcontroller connected to Domoticz-governed MQTT Server. This system has the following specifications :

1. A device and a sensor used, applied to an Arduino microcontroller machine.
2. An arduino can connect to IoT Server in the form of MQTT Server and connect with a manager named Domoticz. Where Domoticz is a tool to be able to monitor and manage the microcontroller used.

1.3 Objective

The purpose of this project is to solve and provide solutions to the problems that have been described. In the first problem, a Water Flow Sensor can monitor the water debit that is stored in the storage basin which will be used and find out whether the Water Pump works or not by using Rain Sensor, the Water Level Sensor can know the upper and lower limits to be able to automate turn on and off Water Pump. On the second issue, a servo SG90 serves to lock the home gate and infrared sensors to add security to the gateway. Where all the tools and sensors that can be controlled by a manager named Domoticz. At Domoticz users

can monitor, control devices and sensors that work remotely, without checking manually. The purpose of this project is made. First, it can save water usage, which can easily be used to monitor how many water discharges have been stored, and can automate the filling of a water reservoir. Second, it can lock the home gate from a distance, which has security that can be monitored from a Domoticz manager.

