CHAPTER 3
RESEARCH METHODOLOGY

3.1 General Explanation

In completing this home automation project, used system architecture, as shown below:

The picture above illustrates how the system works. Arduino Uno microcontroller connected with access point as client, while the server used is a computer that has been installed MQTT server.

3.1.1 Publish or Subscribe from Client

In this project home automation, Arduino UNO is used as a client connected to the Access Point. Arduino UNO is connected to hardware, namely Ethernet shield, LED, DHT 11, LDR, dan Motor Servo. As client, Arduino UNO is used to send messages to the MQTT Server (publish) and is used to receive messages from the MQTT Server (subscribe).

3.1.2 Broker MQTT (Server MQTT)

The MQTT Broker used in this project is Mosquitto. Mosquitto is a server of MQTT. Server connected with Access Point to be able to perform its duties as server. The task of the Mosquito MQTT Server is responsible for receiving
messages from the client, and filter it out, then decide to send to the client where the message will be sent.

3.1.3 Node Red

Red Node plays an important role in this project, is as a system applied to this project. Node Red is used to control the hardware components connected to the Arduino UNO. Red Node as message sender to MQTT server (publish). In addition to sending messages to the server, Node Red is used to monitor the state of the condition of the hardware components connected to the Arduino UNO microcontroller. Whether messages sent from the Red Node to the MQTT server will be communicated to the client or not.