CHAPTER 3
RESEARCH METHODOLOGY

There are few steps for this project: preparing software, testing sensors, preparing program, making mockups, try to send data to server, collecting and analyzing data.

3.1 Preparing Software

Before we test the sensors, we need to prepare the software. The software using Arduino IDE for compiling code for sensors and build the project.

3.2 Testing Sensors

The sensors tested for this project: ESP8266 Wi-Fi Module, Arduino UNO, Flame Sensor, and Infrared Sensor. All the sensors is tested by using Arduino UNO.

3.3 Preparing Programs

After testing all sensors, combine ESP8266, Flame sensor and infrared sensor programs to be a 1 program.

3.4 Making Mockups

After the program has been set, now for the mockups. Using an empty box for the example of room from boarding house, then make a 2 hole for the flame sensor and infrared sensor. Place flame sensor over the electric socket, and infrared sensor at the wall in front of the entrance door. The others like Arduino UNO and ESP8266 can place it anywhere as long as close to internet modem, so ESP8266 can sending data to server.

3.5 Sending Data to Server, Collecting and Analyzing Data

To send data from flame sensor and infrared sensor, using ESP8266 Wi-Fi Module for sending data to server. The server uses for this project is thingspeak (www.thingspeak.com). after the data send to thingspeak, there a graphic from the data send by ESP8266. The data can be read by seeing the graphic. After the sensors is applied to the mockups, and the sensors is already send the data to server, the data is ready to be used for analyze.