CHAPTER 5
IMPLEMENTATION AND TESTING

5.1 Implementation

There are four listings below. Listing-1 contains the arduino "libraries" in use in this project, listing-2 contains the dc motor settings, listing-3 contains the ESP8266 setting so that it becomes wifi module and listing-4 contains reading data on thingspeak.

1. Libraries
1. #include <SoftwareSerial.h>
2. #include <espduino.h>
3. #include <rest.h>
4. #include <AFMotor.h>

2. Setting Motor DC
5. AF_DCMotor front_motor(1,MOTOR12_8KHZ);
6. AF_DCMotor aft_motor(2,MOTOR12_8KHZ);

3. Setting ESP8266 as WiFi module
7. SoftwareSerial espPort(10,11);
8. ESP esp(&espPort,&Serial,9);
9. REST rest(&esp);
10. boolean wifiConnected = false;

4. Get data dari Thingspeak
11. sprintf(buff, "/channels/288644/fields/1/last");
12. Serial.println(buff);
13. rest.get((const char*)buff);
14. if(rest.getResponse(response, 266) == HTTP_STATUS_OK){
15.   strId = "";
16.   strData = "";
17.   strCode = "";
18.   getData();

5.2 Testing

The following is the monitor's serial display for debugging. The first image is a serial display monitor for wifi connection, and the second image is a serial display monitor to read data from thingspeak.
1. Connect to Wifi:

Here is a picture of serial monitor to connect with internet

```
ARDUINO: Setup client
ARDUINO: Mengehubungkan dengan Wifi
ARDUINO: System sudah siap!
scandone
reconnect
scandone
add 0
aid 2
pm open phy2,type:2 0 0
cnt
connected with Rtp:192.168.43.110,mask:255.255.255.0,gw:192.168.43.1
TERHUBUNG KE WIFI
```
Illustration 5.1: The process of connecting to wifi

2. Read data from Thingspeak

The following is an image of the serial monitor to read data from thingspeak

```
ID : 2
Data :
Code :
/channels/288644/fields/1/last
```
Illustration 5.2: Data collection from thingspeak