

CHAPTER 3

RESEARCH METHODOLOGY

Literature Study

In this study the authors use ESP 8266, RFID Access Control Panel X1 Keypad Card Password Door Lock, ESP 32 CAM, Relay, Solenoid, DC Adapter, Push Button Sensor. This research uses Decision Tree logic. so in this study using double security, namely we have to activate the system first using a Smartphone after the new key is alive, here the author uses Tasmota. Tasmota is an open source firmware alternative for products based on the ESP8266 chip that can be customized according to our wishes. By using this firmware we can change the address/pointing of the destination server so that it can be connected to our own application. As for RFID and Code, I use RFID Access Control Panel X1 Keypad Card Password Door Lock 125khz 13.56Mhz 12V.

Collecting Data

Data collection is taken based on the card and code that has been registered.

Implementation Programs

Sensors used: RFID Cards, Code Password, Tasmota

ESP 8266 (Nodemcu) must be flashed first, here I use a program called Tasmotizer after that nodemcu is ready to be flashed using the bin file that has been prepared. if we can check on our wifi and we can connect to tasmota wifi, then we will be directed to the ip address that has been prepared. in this step all we have to do is connect nodemcu with our internet connection, if that's all that's left, we set the Configuration to generic and we match the pins. in this study I used pin D3 GPIO0 as a relay. if you click save then tasmota will reset our device, here I get Ip 172.20.10.2 for Tasmota and for IpCam I get ip 192.168.4.1 For rfid and password settings we can use the settings as in Table 3.1

So to use it the first time we have to make sure nodemcu is connected to the wifi that has been registered first, after it is connected then we can connect our smartphone to the

Ipcam wifi. then we just open the IpCam that we got earlier then we are immediately directed to the Live Cam. if it is we can go directly to the Tasmota url earlier then click Toogle to turn on the system, if the system is live we just open it using the card we have registered.

No	Keterangan	Step 1	Step 2	Step 3	Step 4	Step 5
1	Pasword Program	#123456#				
2	Buat Pin Buka Pintu	#123456#	22	Pin	#	
3	Hapus Pin	#123456#	45	1111	#	
4	Daftar RFID	#123456#	1	Scan	#	
5	Hapus RFID	#123456#	41	Scan	#	
6	Hapus Semua RFID	#123456#	400000	#		

Table 3.1 : Table RFID and Password Setting

Flowchart

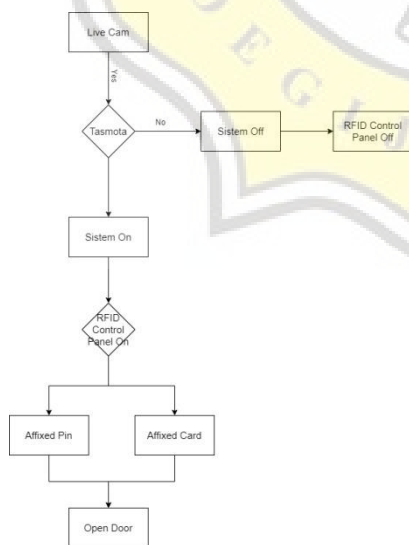


Figure 3.1 : Flowchart

This door uses double security, namely on the Smartphone and also on the Rfid Access Control Panel. On this Smartphone I use Tasmota, Tasmota is an open source firmware alternative for products based on the ESP8266 chip that can be customized according to our wishes. By using this firmware we can change the address/pointing of the destination server so that it can be connected to our own application.

Testing

To obtain data for this study, the following and sensors were tested :

1. Test the RFID Card.
2. Test the Password Pin.
3. Testing Solenoid.
4. Testing ESP 32 Cam.

Analysis

In a study entitled LOCK SYSTEM USING SMARTPHONE AND CARD, the researcher wanted a system that has a double security in the house or room.

