IOT BASED SECURITY SYSTEM USING RFID

AIM:

Design and development of IOT based security system using RFID using Arduino.

PURPOSE:

Now a days security is main concern in everywhere. It very important for industries, schools, colleges and offices. Security system should allow only authorized people. Adding IOT to it additional advantages. Here we proposed system like IOT based security system using RFID.

DESCRIPTION:

This project includes WIFI (Esp8266/IOT module), which is connected to Arduino through UART interface. RFID reader (EM-18) also connected to Arduino through UART interface. L293d connected to Arduino digital IO to control gate motor.

WORKING:

Authorized persons must carry while crossing from gate. Need to swipe RFID card in front of RFID reader. When Authorized access then Door will Open. For unauthorized access door will not open and buzzer will be ON. The entire information displayed on LCD. As well data upload to IOT server through WIFI (Esp8266/IOT module). User can see data in IOT server from anywhere.

TECHNICAL SPECIFICATIONS:

HARDWARE:

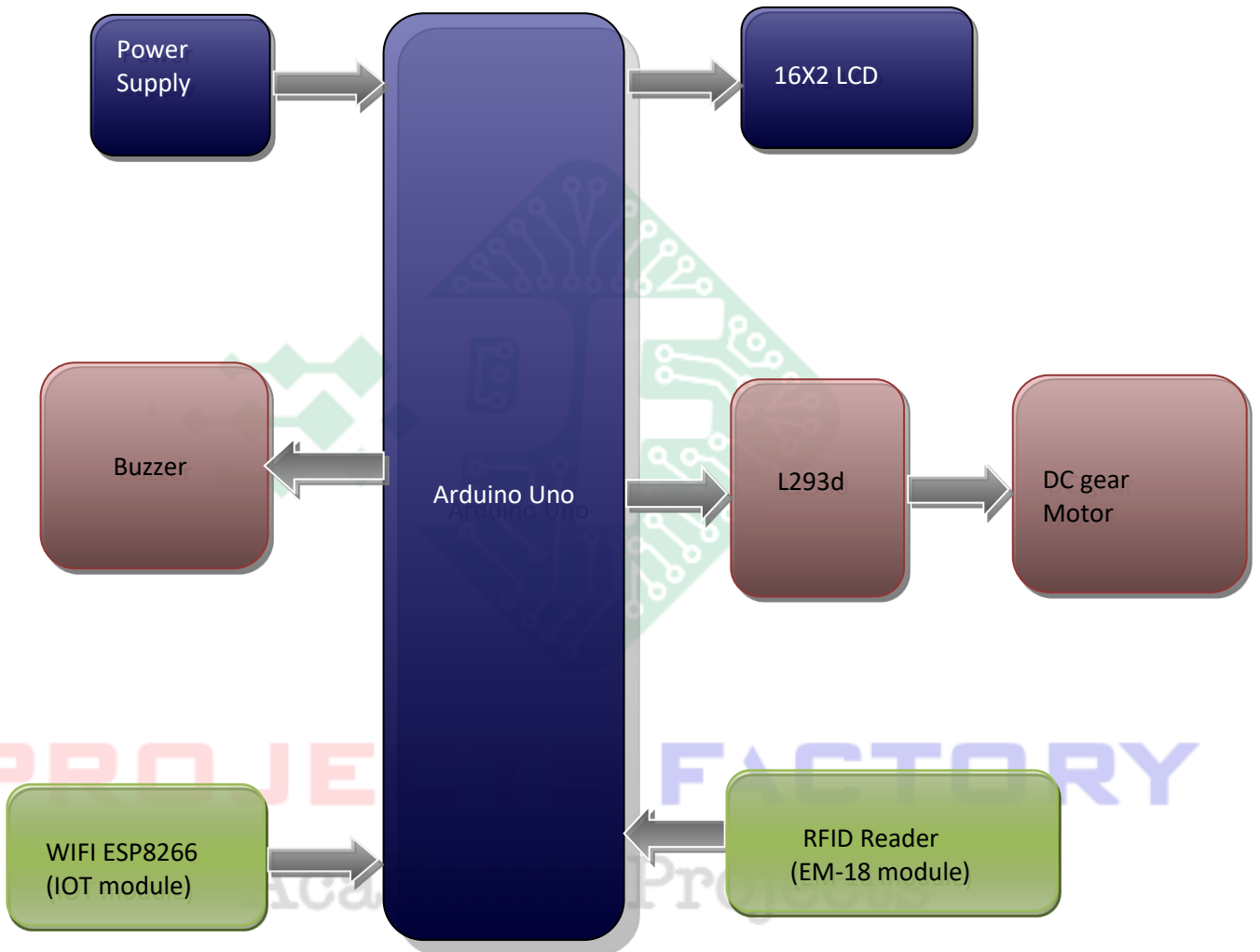|		
Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
WIFI	:	Esp8266 (IOT module)
H-bridge	:	L293d
RFID reader	:	EM-18
Gate	:	Dc gear motor
Power Source	:	12v 2 amp Adaptor

SOFTWARE:

Arduino IDE

Proteus based circuit diagram

APPLICATIONS:

- ➢ Security Access
- ➢ Offices
- ➢ Colleges
- ➢ Schools

BLOCK DIAGRAM:

Power Supply	→	Arduino Uno	→	16X2 LCD
Buzzer	←		→	L293d → DC gear Motor
WIFI ESP8266 (IOT module)	→		←	RFID Reader (EM-18 module)

POWER SUPPLY BLOCKDIAGRAM:

Step down Transformer → Bridge Rectifier → Filter → Regulator → Output

INTERFACES COVERD:

- We have covered WIFI (ESP8266/IOT) module interfacing
- RFID reader interface
- L293d to control DC motor