

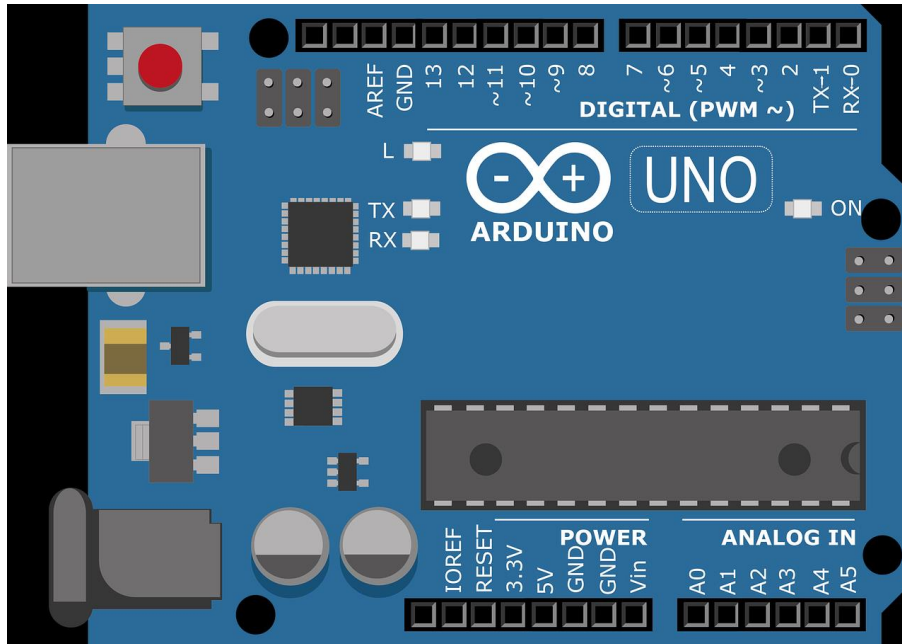
Home Automation using SMS

iHM IoT Lab

Things you need

- ▶ Arduino UNO Board
- ▶ GSM Module(Sim900A)
- ▶ Relay +5V
- ▶ DC Power Supply
- ▶ AC Bulb, bulb holder and wire
- ▶ Jumper Wires(Connecting Wires)
- ▶ Sim Card

Arduino UNO



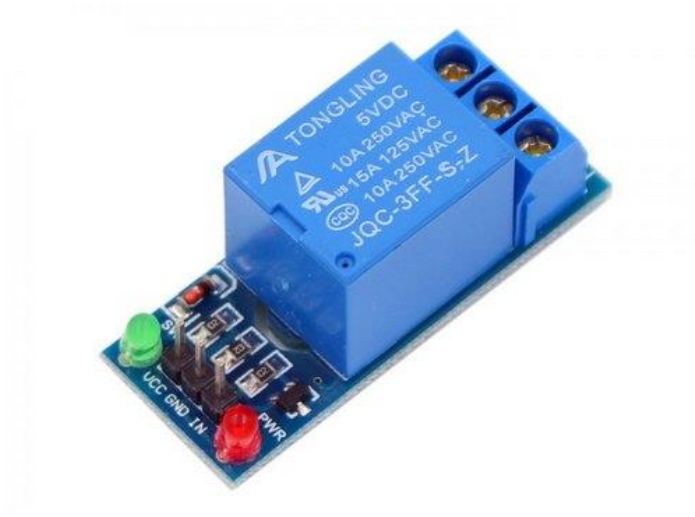
- Arduino Uno is a microcontroller board based on the ATmega328P
- It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz ceramic resonator (CSTCE16M0V53-R0), a USB connection, a power jack, an ICSP header and a reset button

SIM900A

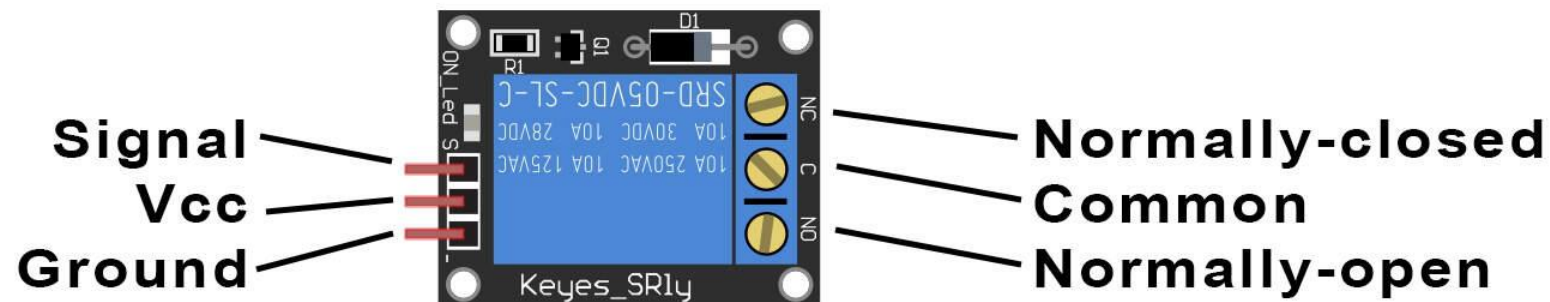


- The SIM900A is a readily available GSM/GPRS module.
- SIM900A is a dual-band GSM/GPRS engine.
- Supports upto 2G.
- Commonly used for SMS and calling projects.

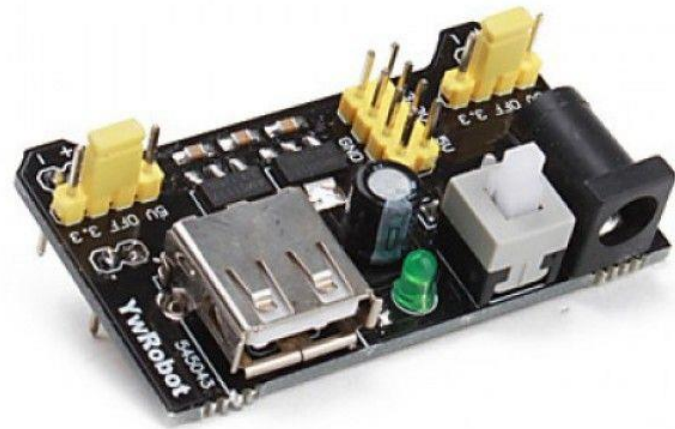
Relay +5V



- Relay is an electromechanical device that uses an electric current to open or close the contacts of a switch
- The single-channel relay module is much more than just a plain relay, it comprises of components that make switching and connection easier and act as indicators to show if the module is powered and if the relay is active or not.



DC Power Supply



- The MB102 is a breadboard power supply module.
- It provides dual 5 V and 3.3 V power rails.

Bulb, Holder and Wire



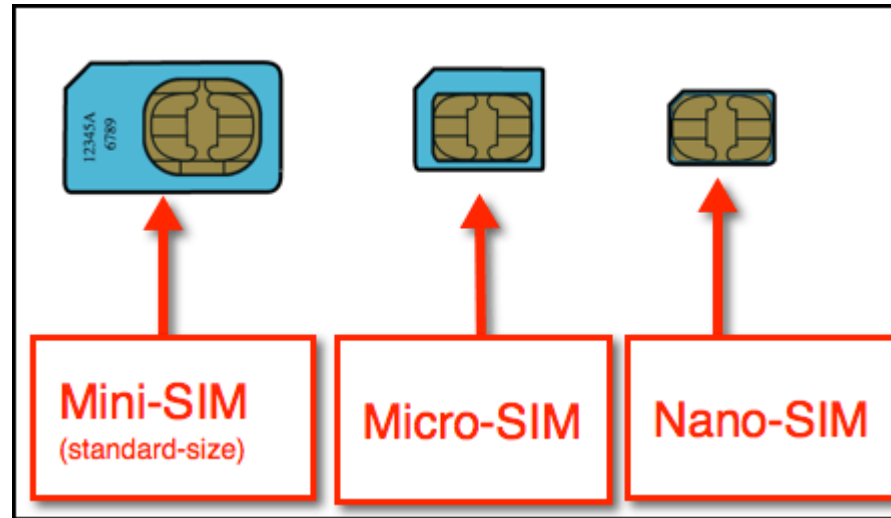
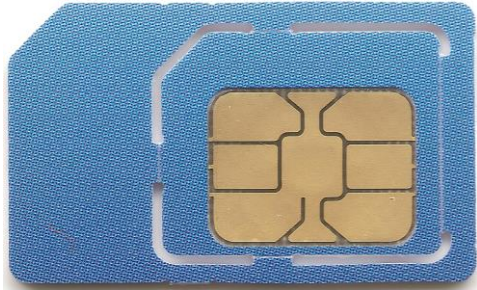
Jumper Wires



There are three types of jumper wires:

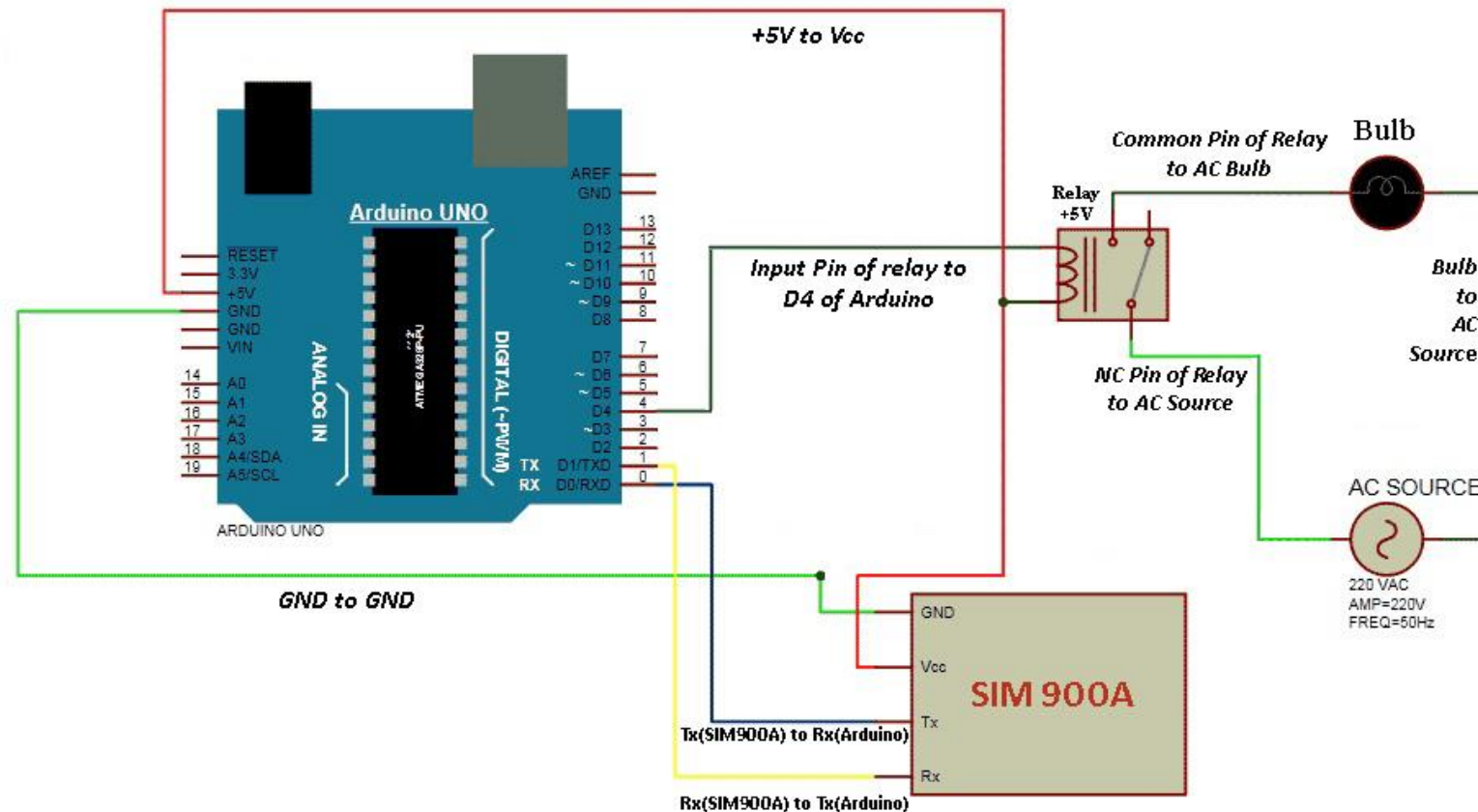
1. Male to Male
2. Female to female
3. Male to female

SIM Card



Circuit Diagram

Innovation Hub Manipur(IOT Lab) Home Automation using SMS



Program Code

```
#define Light 4
int temp=0,i=0;
int led=13;

char str[15];
void setup()
{
    Serial.begin(9600);
    pinMode(led, OUTPUT);
    pinMode(Light, OUTPUT);
    Serial.println("AT+CNMI=2,2,0,0,0");
    delay(500);
    Serial.println("AT+CMGF=1");
    delay(500);
}

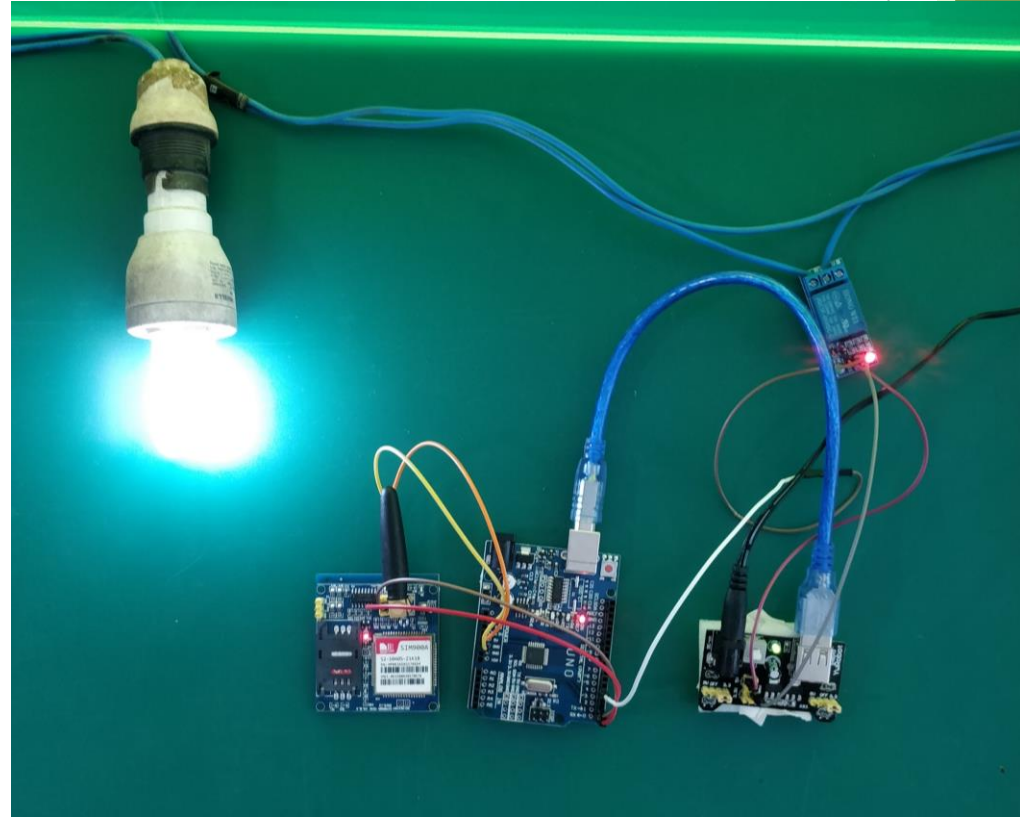
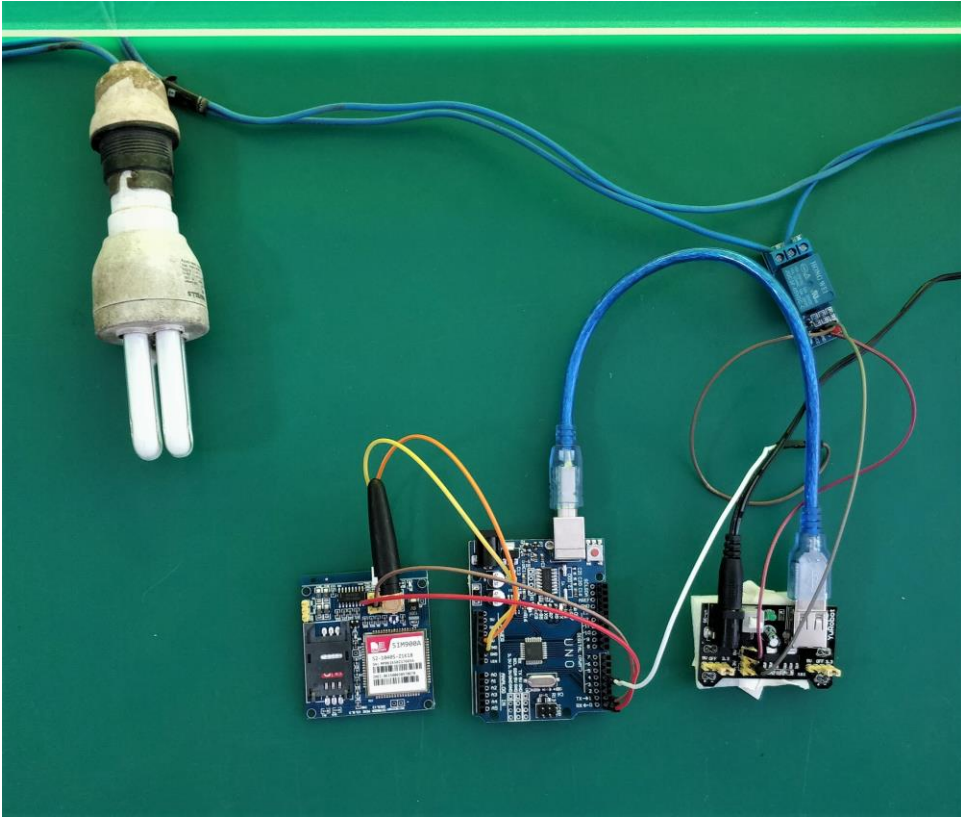
void loop()
{
    if(temp==1)
    {
        check();
        temp=0;
        i=0;
        delay(1000);
    }
}
```

```
void serialEvent()
{
    while(Serial.available())
    {
        if(Serial.find("#A."))
        {
            digitalWrite(led, HIGH);
            delay(1000);
            digitalWrite(led, LOW);
            while (Serial.available())
            {
                char inChar=Serial.read();
                str[i++]=inChar;
                if(inChar=='\n')
                {
                    temp=1;
                    return;
                }
            }
        }
    }
}

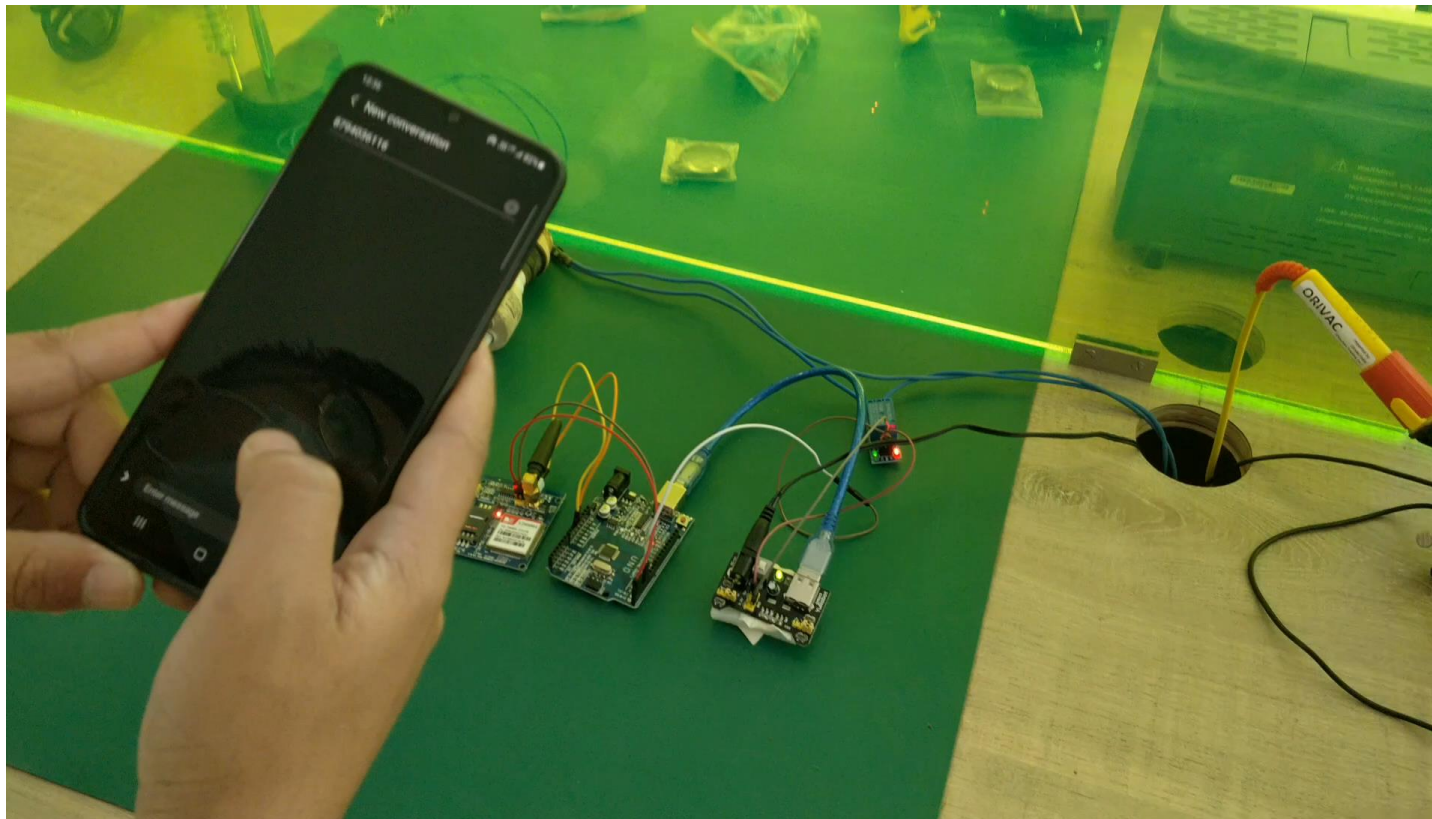
void check()
{
    if(! (strcmp(str,"all on",6)))
    {
        digitalWrite(Light, HIGH);
        delay(200);
    }
}
```

```
else if(! (strcmp(str,"all off",7)))
{
    digitalWrite(Light, LOW);
    delay(200);
}
```

Result



Video Result



END