INTERFACE RELAY MODULE WITH NODEMCU

Relay is an electromagnetic device which is used to isolate two circuits electrically and connect them magnetically. They are very useful devices and allow one circuit to switch another one while they are completely separate. They are often used to interface an electronic circuit (working at a low voltage) to an electrical circuit which works at very high voltage.

A **relay switch** can be divided into two parts: input and output. The input section has a coil which generates magnetic field when a small voltage from an electronic circuit is applied to it. The output section consists of contactors which connect or disconnect mechanically.

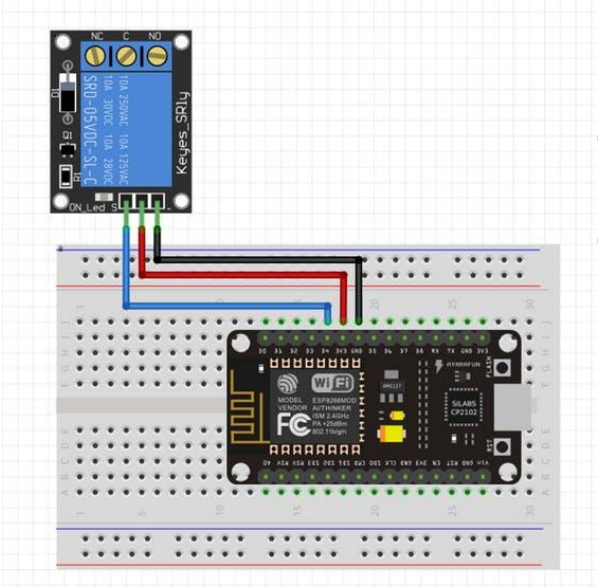
Hardware Required:

- NodeMCU
- Relay Module
- Breadboard
- Micro USB cable
- Connecting Wires

Software Required:

- Arduino IDE

Circuit Diagram:



NODEMCU	RELAY
GND	GND
3.3V or Vin	Vcc
D4	IN1

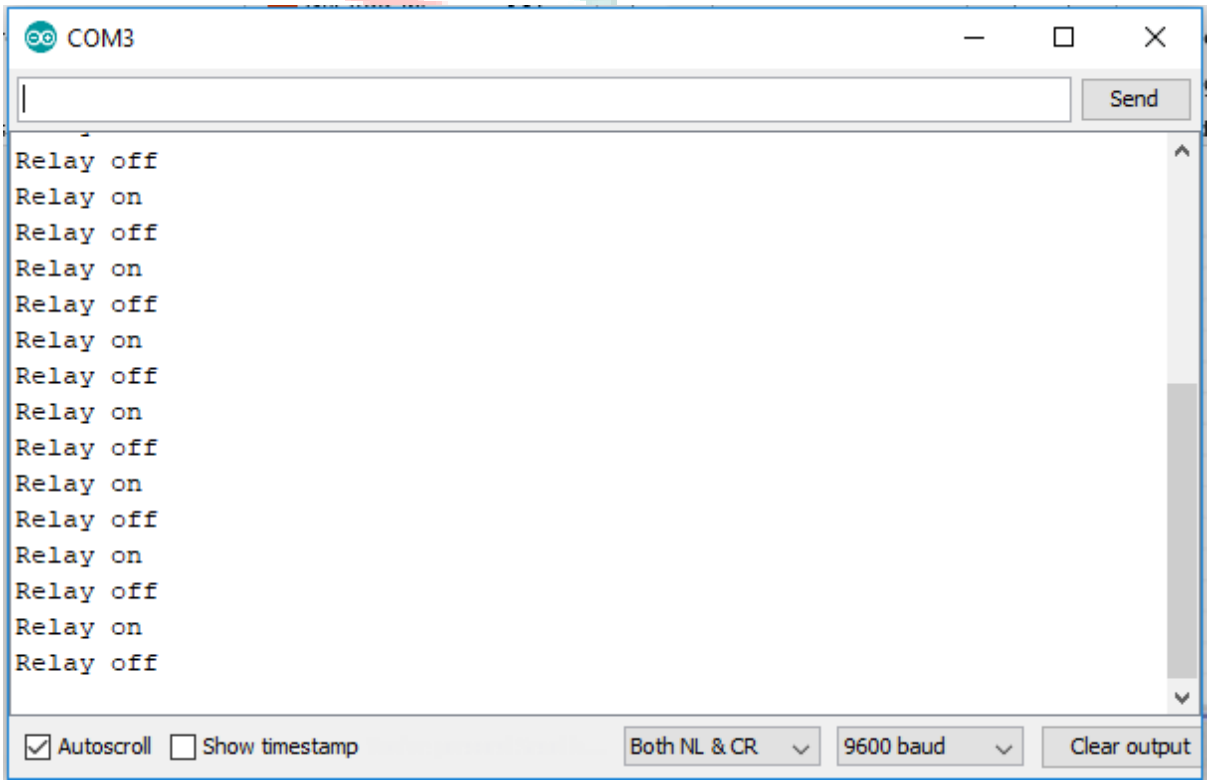
Code:

```
void setup()
{
  Serial.begin(9600);     //baud rate for serial monitor
  pinMode(D4, OUTPUT);    //declare the pinMode
}

void loop()
{

    digitalWrite(D4,HIGH);          //Relay Off
    Serial.println("Relay off");
    delay(4000);                    //Delay fo 4 sec
    digitalWrite(D4,LOW);           //Relay On
    Serial.println("Relay on");
    delay(4000);                    //Delay of 4 sec
}
```

Output:



RELAY WORKING ON USER INPUT THROUGH SERIAL MONITOR

The Relay works based on the user input. If the User Input is ‘0’ than “Relay On” If the User Input is ‘1’ than “Relay Off”. The User Input will be given through the serial monitor and based on the input the relay reacts.

Code:

```
int temp=0;
void setup()
{
  Serial.begin(115200);          //Serial baud rate
  pinMode(D4, OUTPUT);           // Declare the pinMode
}

void loop()
{
  if(Serial.available()>0)       //check for serial availability
  {
    temp=Serial.read();          //Read input from serial
    if(temp=='1')
    {
      digitalWrite(D4,HIGH);          //if input is 1 relay off
      Serial.println("Relay Off");
    }
    else if(temp=='0')
    {
      digitalWrite(D4,LOW);           //if input is 0 relay On
      Serial.println("Relay On");
    }
  }
}
```

Output: