

Responder Experiment

Overview



This is a three responder experiment.

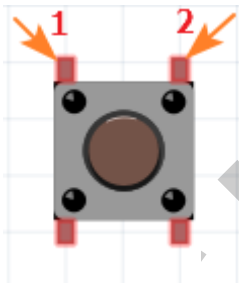
Specification

Button : Size: 6 x 6 x 5mm

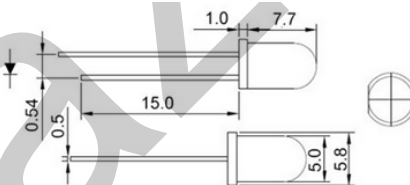
Temperature: -30 ~ +70 Centigrade

Pin definition





Is the definition of Button pin :







LED:



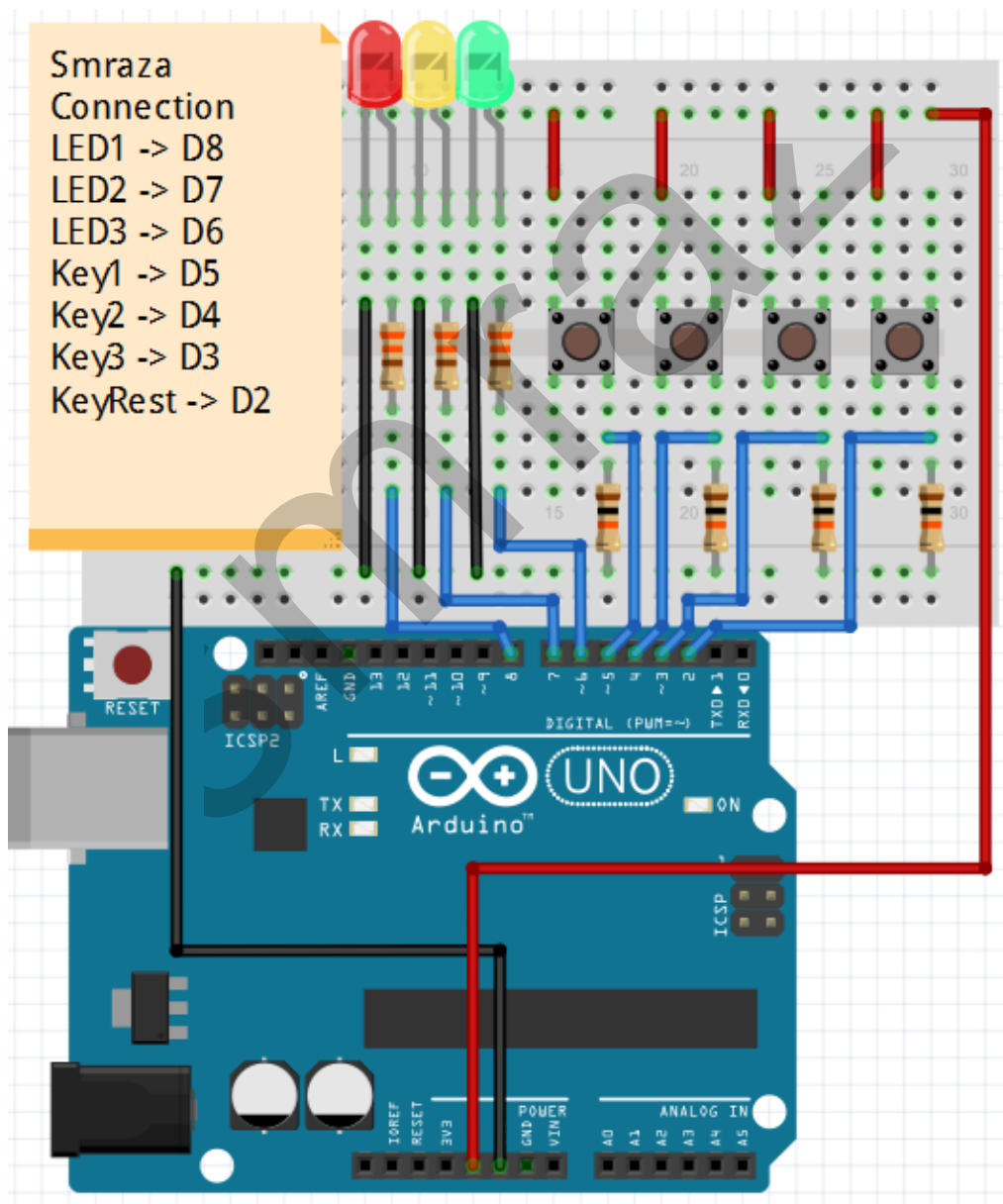
Hardware required

Material diagram	Material name	Number
	Button	4
	LED	3
	220/330Ω resistor	3
	10KΩ resistor	4

V1.2

	USB Cable	1
	UNO R3	1
	Breadboard	1
	Jumper wires	Several

Connection diagram



Note: Button using 10K Ω resistor, LED use 220/330 Ω resistor.

---Designed by Smraza Keen

Sample code

Note: sample code under the **Sample code** folder

```

int Redled=8;      // set Red LED as "output"
int Yellowled=7;   // set Yellow LED as "output"
int Greenled=6;    // set Green LED as "output"
int Key1=5;        // initialize pin for Red button
int Key2=4;        // initialize pin for Yellow button
int Key3=3;        // initialize pin for Green button
int KeyRest=2;     // initialize pin for reset button
int Red;
int Yellow;
int Green;
void setup()
{
    pinMode(Redled,OUTPUT);
    pinMode(Yellowled,OUTPUT);
    pinMode(Greenled,OUTPUT);
    pinMode(Key1,INPUT);
    pinMode(Key2,INPUT);
    pinMode(Key3,INPUT);
    pinMode(KeyRest,INPUT);
}
void loop()        // repeatedly read pins for buttons
{
    Red=digitalRead(Key1);
    Yellow=digitalRead(Key2);
    Green=digitalRead(Key3);
    if(Red==HIGH)Red_YES();
    if(Yellow==HIGH)Yellow_YES();
    if(Green==HIGH)Green_YES();
}

void Red_YES() // execute the code until Red light is on; end cycle when reset button is
pressed
{
    while(digitalRead(KeyRest)==0)
    {
        digitalWrite(Redled,HIGH);
        digitalWrite(Greenled,LOW);
        digitalWrite(Yellowled,LOW);
    }
    clear_led();
}

```

```
}  
void Yellow_YES() // execute the code until Yellow light is on; end cycle when reset button  
is pressed  
{  
    while(digitalRead(KeyRest)==0)  
    {  
        digitalWrite(Redled,LOW);  
        digitalWrite(Greenled,LOW);  
        digitalWrite(Yellowled,HIGH);  
    }  
    clear_led();  
}  
void Green_YES() // execute the code until Green light is on; end cycle when reset button  
is pressed  
{  
    while(digitalRead(KeyRest)==0)  
    {  
        digitalWrite(Redled,LOW);  
        digitalWrite(Greenled,HIGH);  
        digitalWrite(Yellowled,LOW);  
    }  
    clear_led();  
}  
void clear_led() // all LED off  
{  
    digitalWrite(Redled,LOW);  
    digitalWrite(Greenled,LOW);  
    digitalWrite(Yellowled,LOW);  
}
```

Language reference

Tips : click on the following name to jump to the web page.

If you fail to open, use the Adobe reader to open this document.

[digitalRead\(\)](#)

[== \(equality\)](#)

Application effect

Whichever button is pressed first, then the corresponding LED will be on!

If you want to reset, hit the Reset button.