

```
#define arm1a 3
#define arm1b 2

#define arm2a 4
#define arm2b 5

#define arm3a A5
#define arm3b A4

#define arm4a A2
#define arm4b A3

#define arm5a A0
#define arm5b A1

#define arm1limit 8
#define arm2limit 9
#define arm3limit 10
#define arm4limit 11
#define arm5limit 12

#define startkey 13

int tm,retc;

void armlup(int a)
{
    digitalWrite(arm1a,HIGH);
    digitalWrite(arm1b,LOW);
    delay(a); //milli sec
    digitalWrite(arm1a,LOW);
    digitalWrite(arm1b,LOW);
}

int armldown(int b)
{
    while (b>0)
```

```

{
    b--;
    digitalWrite(arm1a, LOW);
    digitalWrite(arm1b, HIGH);
    delay(10);
    digitalWrite(arm1a, LOW);
    digitalWrite(arm1b, LOW);

    if(digitalRead(arm1limit) == 0) return 0;
}
}

```

```

void arm2up(int a)

```

```

{

    digitalWrite(arm2a, HIGH);
    digitalWrite(arm2b, LOW);
    delay(a);
    digitalWrite(arm2a, LOW);
    digitalWrite(arm2b, LOW);

}

```

```

int arm2down(int b)

```

```

{
    while(b > 0)
    {
        b--;
        digitalWrite(arm2a, LOW);
        digitalWrite(arm2b, HIGH);
        delay(10);
        digitalWrite(arm2a, LOW);
        digitalWrite(arm2b, LOW);

        if(digitalRead(arm2limit) == 0)
            return 0;
    }
}

```

```

void arm3up(int a)
{

digitalWrite (arm3a, HIGH);
digitalWrite (arm3b, LOW);
delay (a);
digitalWrite (arm3a, LOW);
digitalWrite (arm3b, LOW);

}
int arm3down(int b)
{
while (b>0)
{
b--;
digitalWrite (arm3a, LOW);
digitalWrite (arm3b, HIGH);
delay (10);
digitalWrite (arm3a, LOW);
digitalWrite (arm3b, LOW);

if (digitalRead (arm3limit) == 0)
return 0;
}
}

void arm4up(int a)
{

digitalWrite (arm4a, HIGH);
digitalWrite (arm4b, LOW);
delay (a);
digitalWrite (arm4a, LOW);
digitalWrite (arm4b, LOW);

}

```

```

int arm4down(int b)
{
    while (b>0)
    {
        b--;
        digitalWrite (arm4a, LOW);
        digitalWrite (arm4b, HIGH);
        delay (10);
        digitalWrite (arm4a, LOW);
        digitalWrite (arm4b, LOW);

        if (digitalRead (arm4limit) == 0)
            return 0;
    }
}

```

```

void arm5up(int a)
{

    digitalWrite (arm5a, HIGH);
    digitalWrite (arm5b, LOW);
    delay (a);
    digitalWrite (arm5a, LOW);
    digitalWrite (arm5b, LOW);

}

```

```

int arm5down(int b)
{
    while (b>0)
    {
        b--;
        digitalWrite (arm5a, LOW);
        digitalWrite (arm5b, HIGH);
        delay (10);
        digitalWrite (arm5a, LOW);
        digitalWrite (arm5b, LOW);

        if (digitalRead (arm5limit) == 0)

```

```

    return 0;
}
}

byte byteRead, iR, iG, iB;

#define BUF_SIZE 100
byte buf[BUF_SIZE];
byte buf_index = 0;

int color_sense()
{
    int ret;
    ret=0;
    if (Serial.available()) {
        /* read the most recent byte */
        byteRead = Serial.read();
        if(byteRead == 0x0A)
        {
            buf_index = 0;
            iR = ((buf[3]-'0')*100) + ((buf[4]-'0')*10) +
(buf[5]-'0');
            iG = ((buf[9]-'0')*100) + ((buf[10]-'0')*10) +
(buf[11]-'0');
            iB = ((buf[15]-'0')*100) + ((buf[16]-'0')*10) +
(buf[17]-'0');

            //if(iR > 100 && iG < 50 && iB < 50)

            Serial.print("R:");
            Serial.print(iR, DEC);
            Serial.print("      ");
            Serial.print("G:");
            Serial.print(iG, DEC);
            Serial.print("      ");
            Serial.print("B:");
            Serial.print(iB, DEC);
            Serial.println();

            if(iR > 80 && iG < 50 && iB < 50)
            {

```

```

        ret=1;
    }

}
else
{
    buf[buf_index] = byteRead;
    buf_index++;
}
}
//Serial.println("*****");
return ret;
}

void action()
{
    arm1up(14000);
    arm2up(8000);

while (digitalRead(startkey)==1);
    arm3up(3000);
    arm4up(3000);
    arm5up(10000);

    spray();
    arm4up(500);
    arm5down(100);
    arm3up(500);

    spray();
    for(int n=0;n<18;n++)
    {
        spray();
        arm4up(200);
        spray();
        arm5down(25);
        spray();
        arm3up(200);
    }

    for(int n=0;n<15;n++)

```

```

    {
        spray();
        arm4up(200);
        // arm5down(30);
        spray();
        arm3up(200);
    }
    for(int n=0;n<18;n++)
    {
        spray();
        arm4up(200);
        spray();
        arm5down(30);
        spray();
        arm3up(200);
    }

    arm3down(1500);
    arm4down(1500);
    arm5down(1500);

    arm2down(1500);
    arm1down(1500);

}

void spray()
{
    for(int i=0;i<20;i++)
    {

        retc=color_sense();
        if(retc==1)
        {
            retc=0;
            delay(2000);
            digitalWrite(6,HIGH);
            delay(150);
            digitalWrite(6,LOW);
            delay(3000);
        }
    }
}

```

```
    }

    }
}
void setup() {

    Serial.begin(9600);

    pinMode(arm1a, OUTPUT);
    pinMode(arm1b, OUTPUT);

    pinMode(arm2a, OUTPUT);
    pinMode(arm2b, OUTPUT);

    pinMode(arm3a, OUTPUT);
    pinMode(arm3b, OUTPUT);

    pinMode(arm4a, OUTPUT);
    pinMode(arm4b, OUTPUT);

    pinMode(arm5a, OUTPUT);
    pinMode(arm5b, OUTPUT);

    pinMode(6, OUTPUT);
    pinMode(7, OUTPUT);

    pinMode(arm1limit, INPUT);
    pinMode(arm2limit, INPUT);
    pinMode(arm3limit, INPUT);
    pinMode(arm4limit, INPUT);
    pinMode(arm5limit, INPUT);
    pinMode(startkey, INPUT);

    digitalWrite(arm1limit, HIGH);
    digitalWrite(arm2limit, HIGH);
    digitalWrite(arm3limit, HIGH);
    digitalWrite(arm4limit, HIGH);
```



```
digitalWrite (arm5limit, HIGH);  
digitalWrite (startkey, HIGH);
```

```
digitalWrite (arm1a, LOW);  
digitalWrite (arm1b, LOW);  
digitalWrite (arm2a, LOW);  
digitalWrite (arm2b, LOW);  
digitalWrite (arm3a, LOW);  
digitalWrite (arm3b, LOW);  
digitalWrite (arm4a, LOW);  
digitalWrite (arm4b, LOW);  
digitalWrite (arm5a, LOW);  
digitalWrite (arm5b, LOW);
```

```
digitalWrite (6, LOW);  
digitalWrite (7, HIGH);
```

```
arm3down (1500);  
arm4down (1500);  
arm5down (1500);
```

```
arm2down (1500);  
arm1down (1500);
```

```
tm=0;
```

```
while (digitalRead (startkey));  
  action();  
}
```

```
void loop()  
{
```

```
  while (digitalRead (startkey));  
    action();
```

```
//if(digitalRead(startkey)==0)
// {
//  action();
// }

// retc=color_sense();
// if(retc==1)
// {
//   delay(10);
//   spray();
//
//
// }
//

  delay(10);

}
```