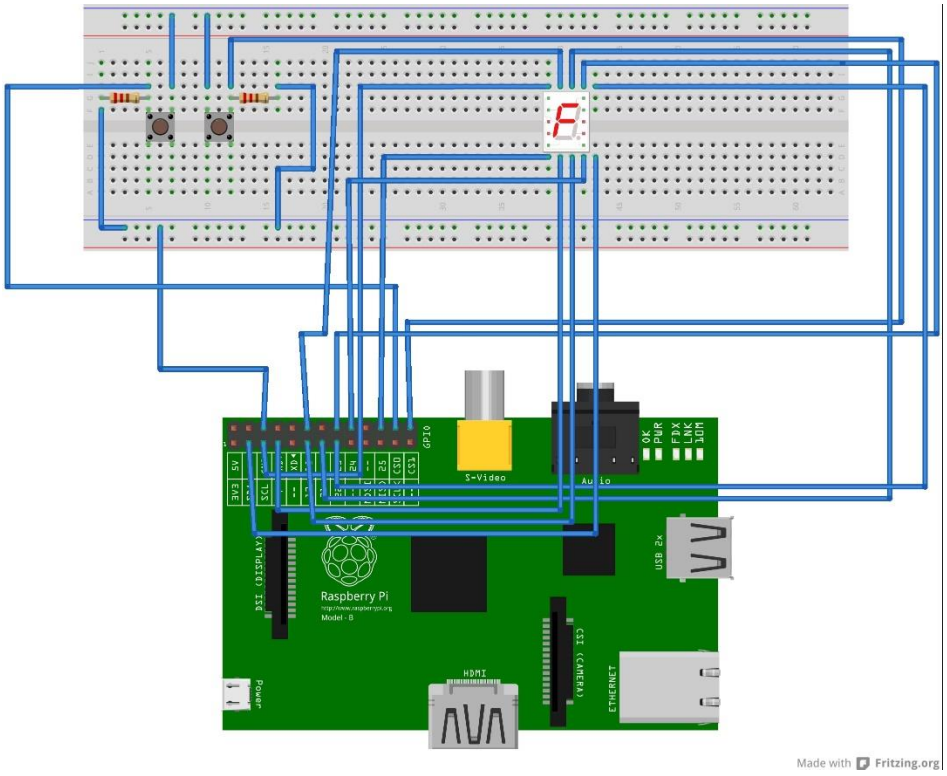
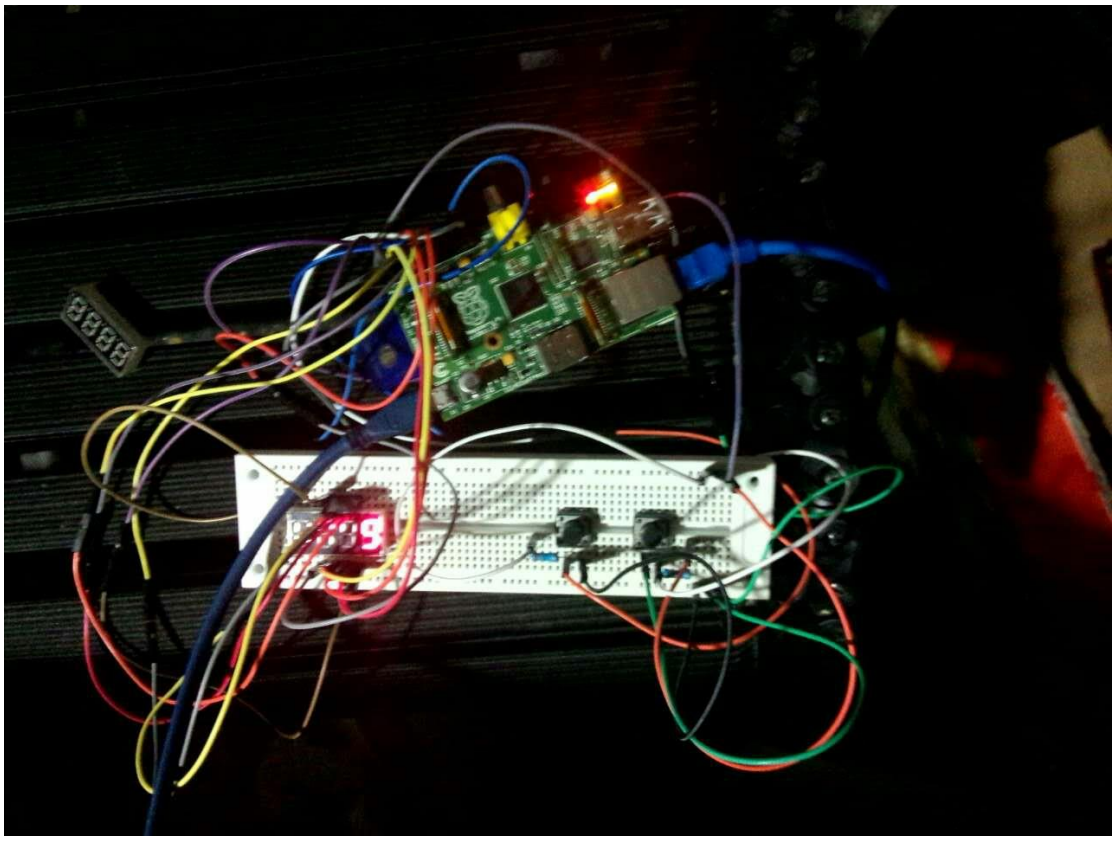
连线图


GPIO
S-Video
Audio
OK
PWR
FDX
LNK
100
USB 2x
DSI (DISPLAY)
Raspberry Pi
Model - B
CSI (CAMERA)
ETHERNET
HDMI
Power
Made with Fritzing.org

实际连线图



编写程序代码

```
#include <wiringPi.h>
#include <stdio.h>
#include <stdlib.h>

#define DIGIT0 8
#define DIGIT1 9
#define BTN0 10
#define BTN1 11
char digit[16][8] =    //The increasing number
      {
            {0,0,0,0,0,0,1,1}, //0
            {1,0,0,1,1,1,1,1}, //1
            {0,0,1,0,0,1,0,1}, //2
            {0,0,0,0,1,1,0,1}, //3
```

```
            {1,0,0,1,1,0,0,1}, //4
            {0,1,0,0,1,0,0,1}, //5
            {0,1,0,0,0,0,0,1}, //6
            {0,0,0,1,1,1,1,1}, //7
            {0,0,0,0,0,0,0,1}, //8
            {0,0,0,0,1,0,0,1}, //9
            {0,0,0,1,0,0,0,1}, //10
            {1,1,0,0,0,0,0,1}, //11
            {0,1,1,0,0,0,1,1}, //12
            {1,0,0,0,0,1,0,1}, //13
            {0,1,1,0,0,0,0,1}, //14
            {0,1,1,1,0,0,0,1}    //15
      };
char loop[6][8] =      //the loop-running bar in the left windows
      {
            {0,1,1,1,1,1,1,1},
            {1,0,1,1,1,1,1,1},
            {1,1,0,1,1,1,1,1},
            {1,1,1,0,1,1,1,1},
            {1,1,1,1,0,1,1,1},
            {1,1,1,1,1,0,1,1},
      };

void main()
{
      int pin;                        //对应的引脚
      int m = 0, n = 0;    //设置两个循环周期
      int flag = 1;              //数码管选择位
      int run = 0;
      unsigned int time0 = 0, time1 = 0;    //时间间隔

      if (wiringPiSetup () == -1) //test the install status of wiringPi
      {
            exit (1) ;
      }

      for (pin = 0 ; pin < 8 ; ++pin)//设置 8 个 pin 引脚为输出
      {
            pinMode (pin, OUTPUT) ;
          digitalWrite(pin, HIGH);
      }

      pinMode(DIGIT0, OUTPUT); //两个 digit 为输出
      pinMode(DIGIT1, OUTPUT);
```

```
    pinMode(BTN0, INPUT); //两个控制开关为输入
    pinMode(BTN1, INPUT);

    while (1)
    {
        time1 = millis();

        if (digitalRead(BTN0) && run == 0) //如果开始
        {
            puts("Start!");
            run = 1;       //改变运行状态
            m = 0;
            n = 0;
            time0 = millis();
        }
        else if (digitalRead(BTN1) && run == 1)//停止
        {
            puts("Stop!");
            run = 0;
        }

        if (time1 - time0 >= 50 && run == 1)//检查到一定时间间隔改变数字
        {
            time0 = time1;
            printf("%d\n", n);
            m = ++m % 6;
            n = ++n % 8 + 1 ;
        }

        for (pin = 0; pin < 8; pin++)  //将对应的值输出到数码管上
        {
            digitalWrite(pin, flag ? digit[n][pin] : loop[m][pin]);
        }
        digitalWrite(DIGIT0, flag);    //利用视觉残留，不断改变数码管选择位
        digitalWrite(DIGIT1, (flag = 1 - flag));
        delay(10);
    }
}
```

实验截图：