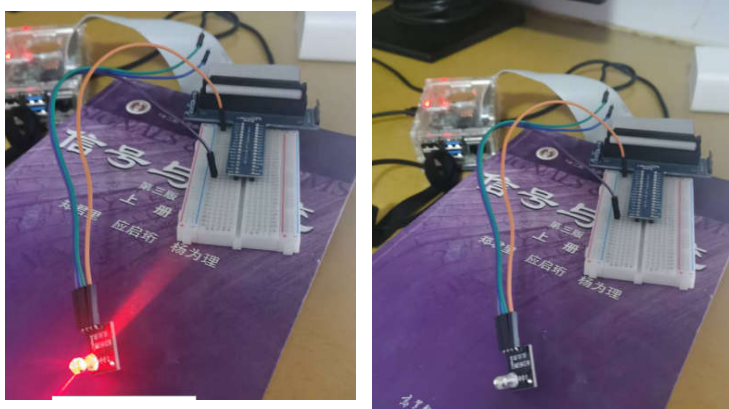


# 智能系统与控制

## 树莓派网络控制: Flask 控制小灯



### 灯光系统

开灯

关灯

于泓  
鲁东大学  
信息与电气工程学院  
2022.5.1

# Flask

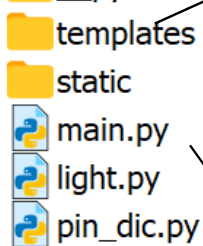
Flask是一个轻量级的可定制框架，使用Python语言编写，较其他同类型框架更为灵活、轻便、安全且容易上手。

(利用树莓派作为服务器，制作小型网站)

安装 **`pip3 install flask`**

## 工程的组织结构

网页文件 (\*.html)

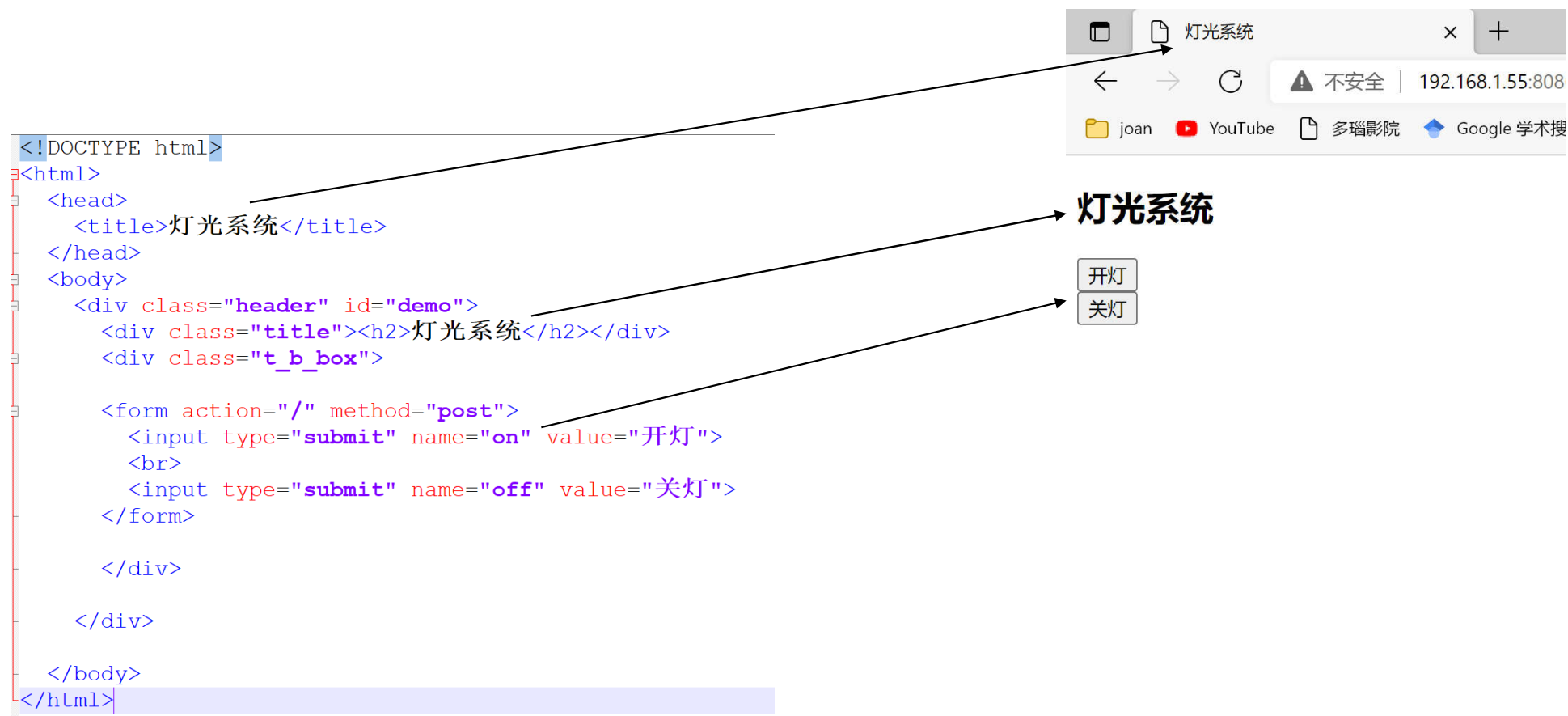
静态  
文件 (图片等)

Python 代码文件

/home/pi/EXP-Raspberry/EXP_Flesk/templates/			
Name		Size (KB)	
..		1	
index.html		1	

templates	2022-05-01	1
static	2022-05-01	1
main.py	1	2022-05-01
light.py	1	2022-05-01
pin_dic.py	1	2022-05-01



```
<!DOCTYPE html>
<html>
  <head>
    <title>灯光系统</title>
  </head>
  <body>
    <div class="header" id="demo">
      <div class="title"><h2>灯光系统</h2></div>
      <div class="t_b_box">

        <form action="/" method="post">
          <input type="submit" name="on" value="开灯">
          <br>
          <input type="submit" name="off" value="关灯">
        </form>

      </div>
    </div>
  </body>
</html>
```

灯光系统

开灯  
关灯

## light.py

```
import RPi.GPIO as GPIO

class light():
    def __init__(self, pin):
        # 初始化
        self.pin = pin
        GPIO.setmode(GPIO.BOARD)
        GPIO.setup(self.pin, GPIO.OUT)
        GPIO.output(self.pin, GPIO.LOW)

    def on(self):
        GPIO.output(self.pin, GPIO.HIGH)

    def off(self):
        GPIO.output(self.pin, GPIO.LOW)
```

## main.py

```
from flask import Flask, render_template, Response, request
from pin_dic import pin_dic
from light import light

# 定义小灯对象
m_light = light(pin_dic["G17"])

#
app = Flask(__name__)

# 定义路由
@app.route('/', methods=['GET', 'POST'])
def index():
    if request.form.get('on', None) == "开灯":
        m_light.on()
        print('light on')

    elif request.form.get('off', None) == "关灯":
        m_light.off()
        print('ligh off')

    return render_template('index.html')

if __name__ == '__main__':
    app.run(host='192.168.1.55', port=8080)
```