

Python file

```
from flask import Flask, render_template, request

import RPi.GPIO as GPIO

# GPIO Setup

LED_PIN = 17 # Pin to control LED (previous setup)

RELAY_PIN = 27 # Pin to control relay (connected to IN1 of the relay module)

GPIO.setmode(GPIO.BCM)

GPIO.setup(LED_PIN, GPIO.OUT)

GPIO.setup(RELAY_PIN, GPIO.OUT)


# Create Flask app

app = Flask(__name__)


@app.route('/')

def index():

    return render_template('index.html')


@app.route('/led/<state>')

def led_control(state):

    if state == "on":

        GPIO.output(LED_PIN, GPIO.HIGH)

        return "LED is ON"

    elif state == "off":

        GPIO.output(LED_PIN, GPIO.LOW)

        return "LED is OFF"
```

```
else:
```

```
    return "Invalid command"
```

```
@app.route('/relay/<state>')
```

```
def relay_control(state):
```

```
    if state == "on":
```

```
        GPIO.output(RELAY_PIN, GPIO.LOW) # Activates relay (turns bulb ON)
```

```
        return "Bulb is ON"
```

```
    elif state == "off":
```

```
        GPIO.output(RELAY_PIN, GPIO.HIGH) # Deactivates relay (turns bulb OFF)
```

```
        return "Bulb is OFF"
```

```
    else:
```

```
        return "Invalid command"
```

```
if __name__ == "__main__":
```

```
    app.run(host='0.0.0.0', port=5000)
```

html file

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <title>Home Automation</title>

</head>

<body>

  <h1>Web Controlled Home Automation</h1>


  <!-- LED Control -->

  <h2>Control LED</h2>

  <form action="/led/on" method="get">

    <button type="submit">Turn LED ON</button>

  </form>

  <form action="/led/off" method="get">

    <button type="submit">Turn LED OFF</button>

  </form>


  <!-- Relay Control (Bulb) -->

  <h2>Control Bulb</h2>

  <form action="/relay/on" method="get">

    <button type="submit">Turn Bulb ON</button>

  </form>

  <form action="/relay/off" method="get">
```

<button type="submit">Turn Bulb OFF</button>

</form>

</body>

</html>