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Assignment: week 11 homework 1

Client

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>WebSocket Client</title>
</head>
<body>
    <h1>WebSocket Client</h1>

    <form id="numberForm">
        <label for="numberInput">Enter a Number:</label>
        <input type="number" id="numberInput" required>
        <button type="button" onclick="submitNumber()">Submit</button>
    </form>

    <div id="output"></div>

    <script>
        const socket = new WebSocket('ws://localhost:3000');

        socket.addEventListener('open', (event) => {
            console.log('Connected to WebSocket Server');
        });

        socket.addEventListener('message', (event) => {
            const data = JSON.parse(event.data);
            const outputDiv = document.getElementById('output');
            outputDiv.innerHTML = `<p>Received Number: ${data.number}</p>`;
        });

        function submitNumber() {
            const numberInput = document.getElementById('numberInput');
            const number = numberInput.value;

            if (number !== '') {
                socket.send(number);
                numberInput.value = '';
            }
        }
    </script>
</body>
</html>
```

Server:

```
const express = require('express');
const http = require('http');
const WebSocket = require('ws');
const path = require('path');

const app = express();
const server = http.createServer(app);
const wss = new WebSocket.Server({ server });

app.use(express.static(path.join(__dirname, 'public')));

wss.on('connection', (ws) => {
    console.log('Client connected');

    ws.on('message', (message) => {
        console.log(`Received message: ${message}`);
        wss.clients.forEach((client) => {
            if (client !== ws && client.readyState === WebSocket.OPEN) {
                client.send(JSON.stringify({ number: message }));
            }
        });
    });

    ws.on('close', () => {
        console.log('Client disconnected');
    });
});

server.listen(3000, () => {
    console.log('Server is listening on port 3000');
});
```

To blink the led

```
import RPi.GPIO as GPIO

import time

#set pins for leds

LedPins = 17

def print_message():

 print("============program runnning========")

 print("press ctrl+c to end the program")

 print("Please enter to begin\n")

def setup():

 #set the gpio to BCM numbering

 GPIO.setmode(GPIO.BCM)

 #set all ledpin's mode to output& initial level to high
```

```
 GPIO.setup(LedPins, GPIO.OUT, initial=GPIO.LOW)
def main():
 print_message()
 delay = int(input("Enter blinking frequency: "))

 while True:
 GPIO.output(LedPins, GPIO.HIGH)
 time.sleep(delay)
 GPIO.output(LedPins, GPIO.LOW)
 time.sleep(delay)




def destroy():
 GPIO.output(LedPins, GPIO.HIGH)
 GPIO.cleanup()
if __name__ == "__main__":
 setup()
 try:
 main()
 except KeyboardInterrupt:
 destroy()
```