Practical – 10

AIM: Configure ESP8266 in station and access point mode for wireless access.

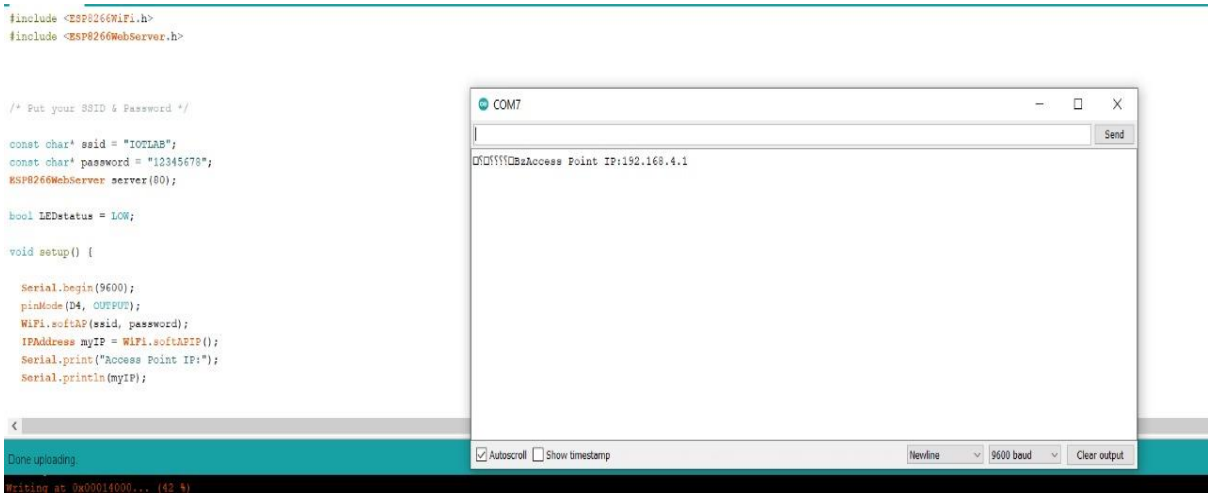
CODE:

```
#include <ESP8266WiFi.h>
#include <ESP8266WebServer.h>
/* Put your SSID & Password */
const char* ssid = "IOTLAB";
const char* password = "12345678";
ESP8266WebServer server(80);
bool LEDstatus = LOW;

void setup() {
  Serial.begin(9600);
  pinMode(D4, OUTPUT);
  WiFi.softAP(ssid, password);
  IPAddress myIP = WiFi.softAPIP();
  Serial.print("Access Point IP:");
  Serial.println(myIP);
  server.on("/", handle_OnConnect);
  server.on("/ledon", handle_ledon);
  server.on("/ledoff", handle_ledoff);
  server.onNotFound(handle_NotFound);
  server.begin();
  //Serial.println("HTTP Server Started");
}
void loop() {
  server.handleClient();
  if(LEDstatus)
  {digitalWrite(D4, HIGH);}
  else
```

```
  {
digitalWrite(D4, LOW);
}
}
void handle_OnConnect() {
  LEDstatus = LOW;
  Serial.println("LED: OFF");
  server.send(200, "text/html", updateWebpage(LEDstatus));
}
void handle_ledon() {
  LEDstatus = HIGH;
  Serial.println("LED: ON");
  server.send(200, "text/html", updateWebpage(LEDstatus));
}
void handle_ledoff() {
  LEDstatus = LOW;
  Serial.println("LED: OFF");
  server.send(200, "text/html", updateWebpage(LEDstatus));
}
void handle_NotFound(){
  server.send(404, "text/plain", "Not found");
}
String updateWebpage(uint8_t LEDstatus){
  String ptr = "<!DOCTYPE html> <html>\n";
  ptr +="<head><meta name=\"viewport\" content=\"width=device-width, initial-scale=1.0,
user-scalable=no\">\n";
  ptr +="<title>LED Control</title>\n";
  ptr +="<style>html { font-family: Helvetica; display: inline-block; margin: 0px auto; text-
align: center;}\n";
```

```
  ptr +="body{margin-top: 50px;} h1 {color: #444444;margin: 50px auto 30px;} h3 {color: #444444;margin-bottom: 50px;}\n";

  ptr +=".button {display: block;width: 80px;background-color: #1abc9c;border: none;color: white;padding: 13px 30px;text-decoration: none;font-size: 25px;margin: 0px auto 35px;cursor: pointer;border-radius: 4px;}\n";

  ptr +=".button-on {background-color: #3498db;}\n";

  ptr +=".button-on:active {background-color: #3498db;}\n";

  ptr +=".button-off {background-color: #34495e;}\n";

  ptr +=".button-off:active {background-color: #2c3e50;}\n";

  ptr +="p {font-size: 14px;color: #888;margin-bottom: 10;}\n";

  ptr +="</style>\n";

  ptr +="</head>\n";

  ptr +="<body>\n";

  ptr +="<h1>ESP8266 Web Server</h1>\n";

  ptr +="<h3>Using Access Point(AP) Mode</h3>\n";

  if(LEDstatus){

    ptr +="<p>BLUE LED: ON</p><a class=\"button button-off\" href=\"/ledoff\">OFF</a>\n";

   }

else{

    ptr +="<p>BLUE LED: OFF</p><a class=\"button button-on\" href=\"/ledon\">ON</a>\n";

  }

  ptr +="</body>\n";

  ptr +="</html>\n";

  return ptr;

}
```

OUTPUT:


#include <ESP8266WiFi.h>
#include <ESP8266WebServer.h>
/* Put your SSID & Password */
const char* ssid = "IOTLAB";
const char* password = "12345678";
ESP8266WebServer server(80);
bool LEDstatus = LOW;
void setup() {
Serial.begin(9600);
pinMode(D4, OUTPUT);
WiFi.softAP(ssid, password);
IPAddress myIP = WiFi.softAPIP();
Serial.print("Access Point IP:");
Serial.println(myIP);
Done uploading.
Writing at 0x00014000... (42 %)
COM7
Send
Access Point IP:192.168.4.1
Autoscroll
Show timestamp
Newline
9600 baud
Clear output