1. //Include the library files
2. #include <Wire.h>
3. #include <LiquidCrystal\_I2C.h>
4. #define BLYNK\_PRINT Serial
5. **#include <ESP8266WiFi.h>**
6. #include <BlynkSimpleEsp8266.h>
7. #include <DHT.h>
8. #include <OneWire.h>
9. #include <DallasTemperature.h>
11. //Initialize the LCD display
13. LiquidCrystal\_I2C lcd(0x27, 16, 2);

16. char auth[] = "ua\_9QCWSnw5lY\_RSqq8h4x-qFLSNXxpd"; //Enter your Blynk Auth token
17. char ssid[] = "IOT"; //Enter your WIFI SSID
18. char pass[] = "123456789"; //Enter your WIFI Password
20. **OneWire oneWire(D7); // digital D7 pin DS18B20 sensor**
21. DallasTemperature sensors(&oneWire);
22. DHT dht(D4, DHT11);//(DHT sensor pin,sensor type) D4 DHT11 Temperature Sensor
23. BlynkTimer timer;
25. **//Define component pins**
26. #define soil A0 //A0 Soil Moisture Sensor
28. int relay1State = LOW;
29. int relay2State = LOW;
31. #define RELAY\_PIN\_1 D3 //D3 Relay for Water pump
32. #define RELAY\_PIN\_2 D6 //D6 Relay 2 for LED
33. #define VPIN\_BUTTON\_1 V12
34. #define VPIN\_BUTTON\_2 V13
36. float temp = 0;
38. void setup() {
39. Serial.begin(115200);
41. lcd.init();
42. lcd.backlight();
44. pinMode(RELAY\_PIN\_1, OUTPUT);
45. **pinMode(RELAY\_PIN\_2, OUTPUT);**
46. digitalWrite(RELAY\_PIN\_1, LOW);
47. digitalWrite(RELAY\_PIN\_2, LOW);

50. **Blynk.begin(auth, ssid, pass, "blynk.cloud", 80);**
51. sensors.begin();
52. dht.begin();
54. lcd.setCursor(0, 0);
55. **lcd.print(" IOT Smart Agri. ");**
56. for (int a = 5; a <= 10; a++) {
57. lcd.setCursor(a, 1);
58. lcd.print(".");
59. delay(1000);
60. **}**
61. lcd.clear();
62. //Call the function
63. timer.setInterval(100L, soilMoistureSensor);
64. timer.setInterval(100L, DHT11sensor);
65. **timer.setInterval(1000L, sendTemps);**
66. }
68. //Get the DHT11 sensor values
69. void DHT11sensor() {
70. **float h = dht.readHumidity();**
71. float t = dht.readTemperature();
73. if (isnan(h) || isnan(t)) {
74. Serial.println("Failed to read from DHT sensor!");
75. **return;**
76. }
78. Blynk.virtualWrite(V0, t);
79. Blynk.virtualWrite(V1, h);
81. lcd.setCursor(0, 0);
82. lcd.print("T:");
83. lcd.print(t);
85. **lcd.setCursor(8, 0);**
86. lcd.print("H:");
87. lcd.print(h);
89. }
91. //Get the soil moisture values
92. void soilMoistureSensor() {
93. int value = analogRead(soil);
94. value = map(value, 0, 1024, 0, 100);
95. **value = (value - 100) \* -1;**
97. Blynk.virtualWrite(V3, value);
98. lcd.setCursor(0, 1);
99. lcd.print("SM:");
100. **lcd.print(value);**
102. }

105. **//Get the soil temperature**
106. void sendTemps()
107. {
108. sensors.requestTemperatures();
109. temp = sensors.getTempCByIndex(0);
110. **Serial.println(String("Sıcaklik=")+temp+ String(" C"));**
111. Blynk.virtualWrite(V10, temp);
112. lcd.setCursor(7, 1);
113. lcd.print("ST:");
114. lcd.print(temp);
115. **lcd.print(" ");**
116. }
118. BLYNK\_CONNECTED() {
119. // Request the latest state from the server
120. **Blynk.syncVirtual(VPIN\_BUTTON\_1);**
121. Blynk.syncVirtual(VPIN\_BUTTON\_2);
122. }
124. BLYNK\_WRITE(VPIN\_BUTTON\_1) {
125. **relay1State = param.asInt();**
126. digitalWrite(RELAY\_PIN\_1, relay1State);
127. }
129. BLYNK\_WRITE(VPIN\_BUTTON\_2) {
130. **relay2State = param.asInt();**
131. digitalWrite(RELAY\_PIN\_2, relay2State);
132. }
134. void loop() {
136. Blynk.run();//Run the Blynk library
137. timer.run();//Run the Blynk timer
139. }