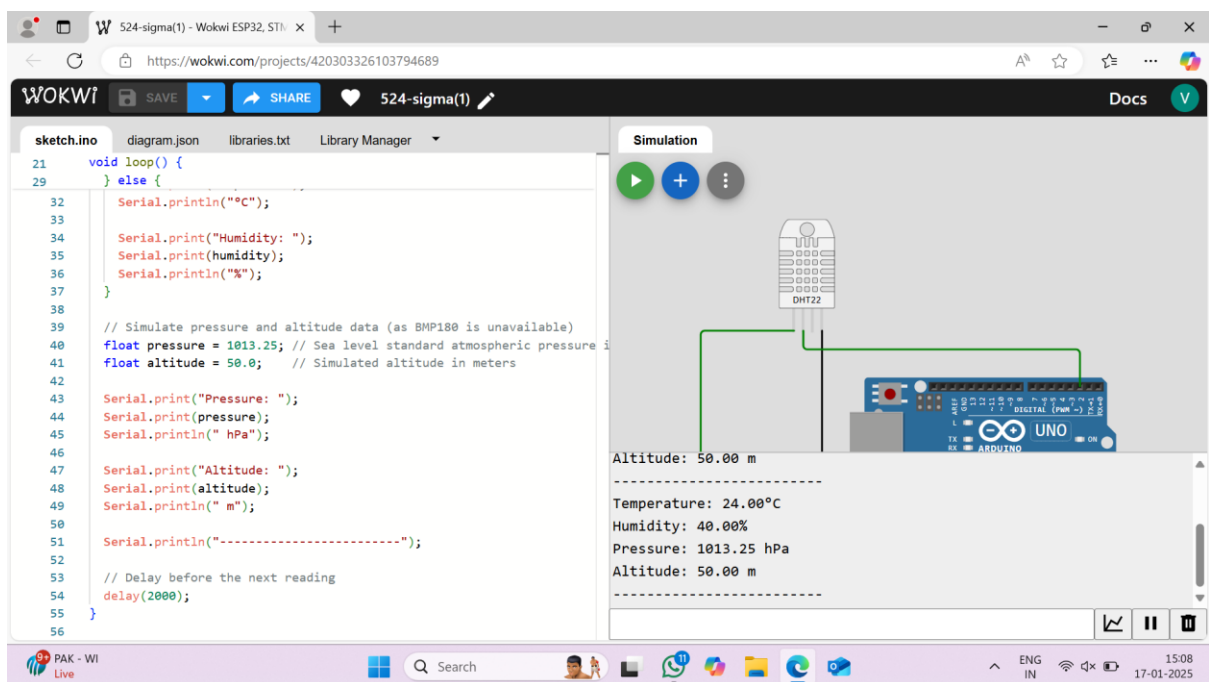
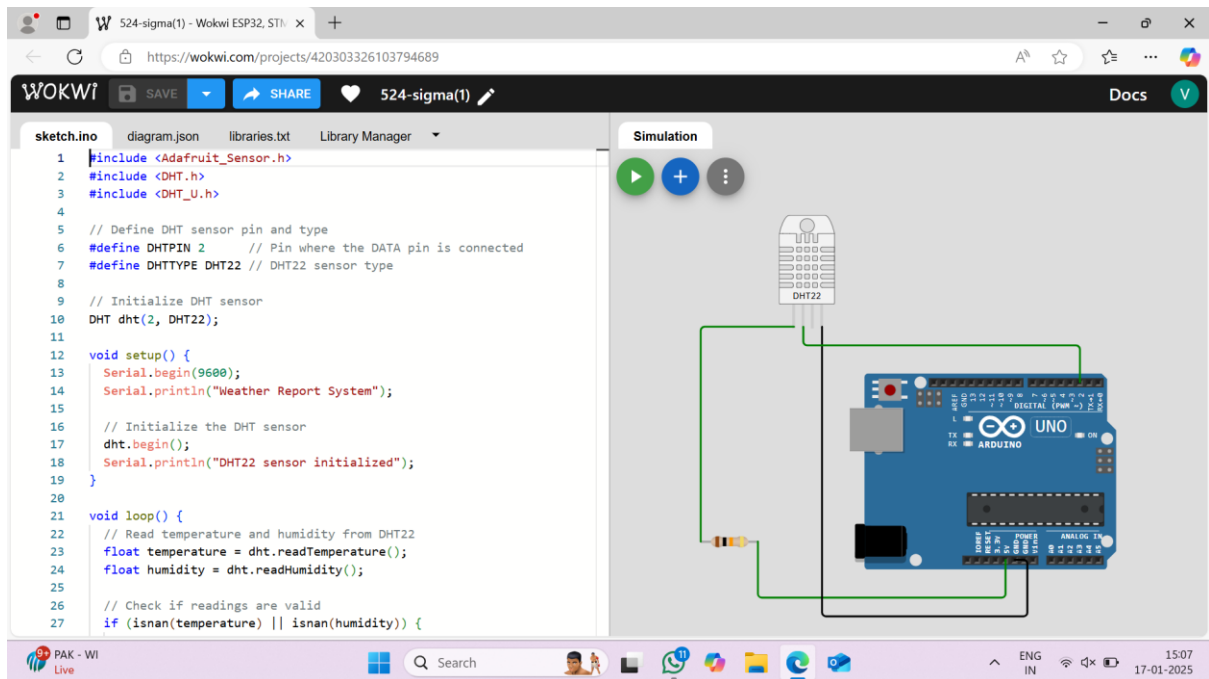
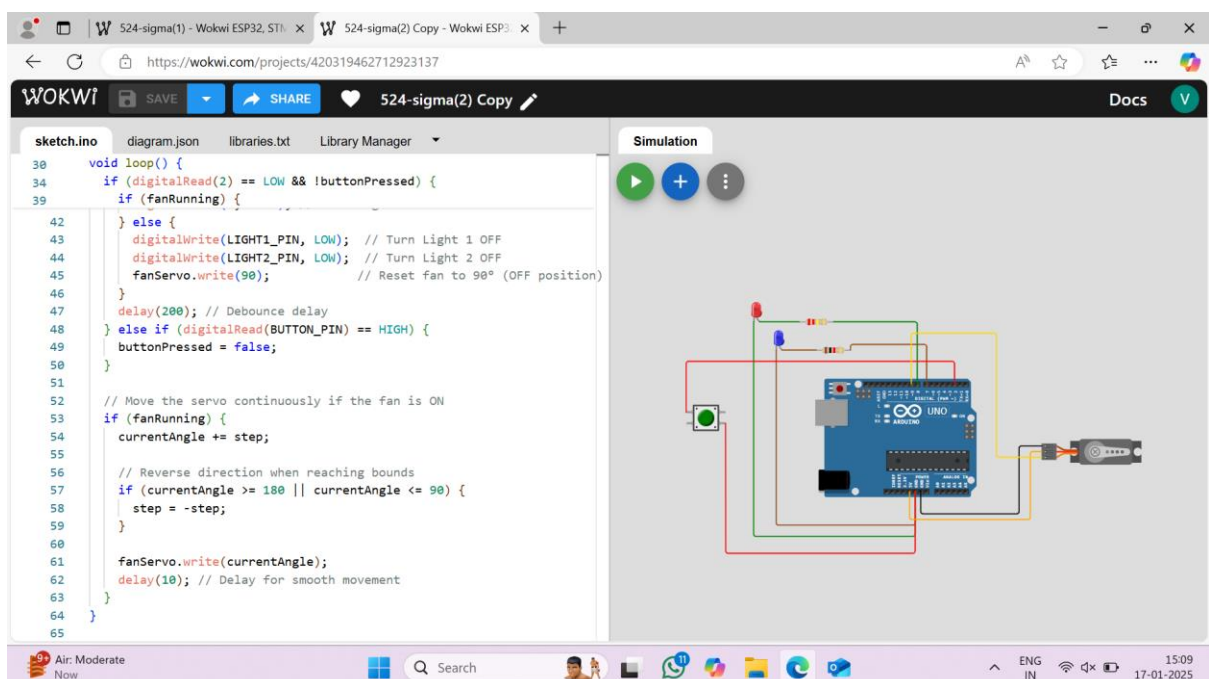
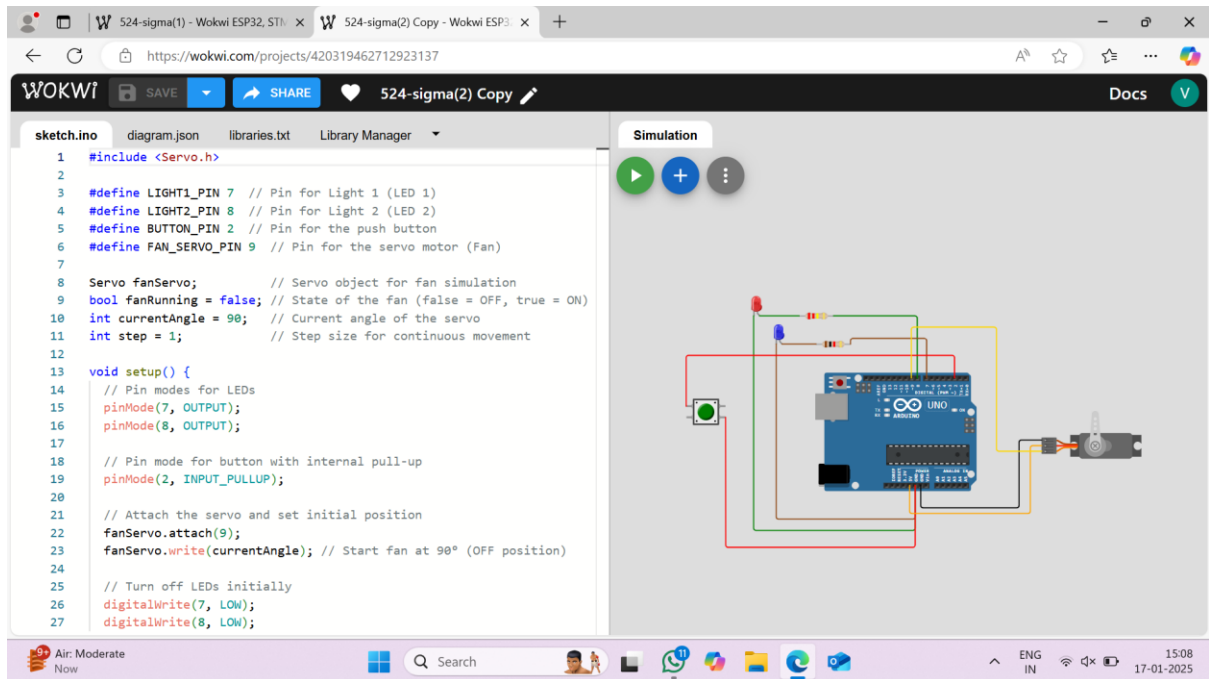


IOT HOLIDAY ASSIGNMENT

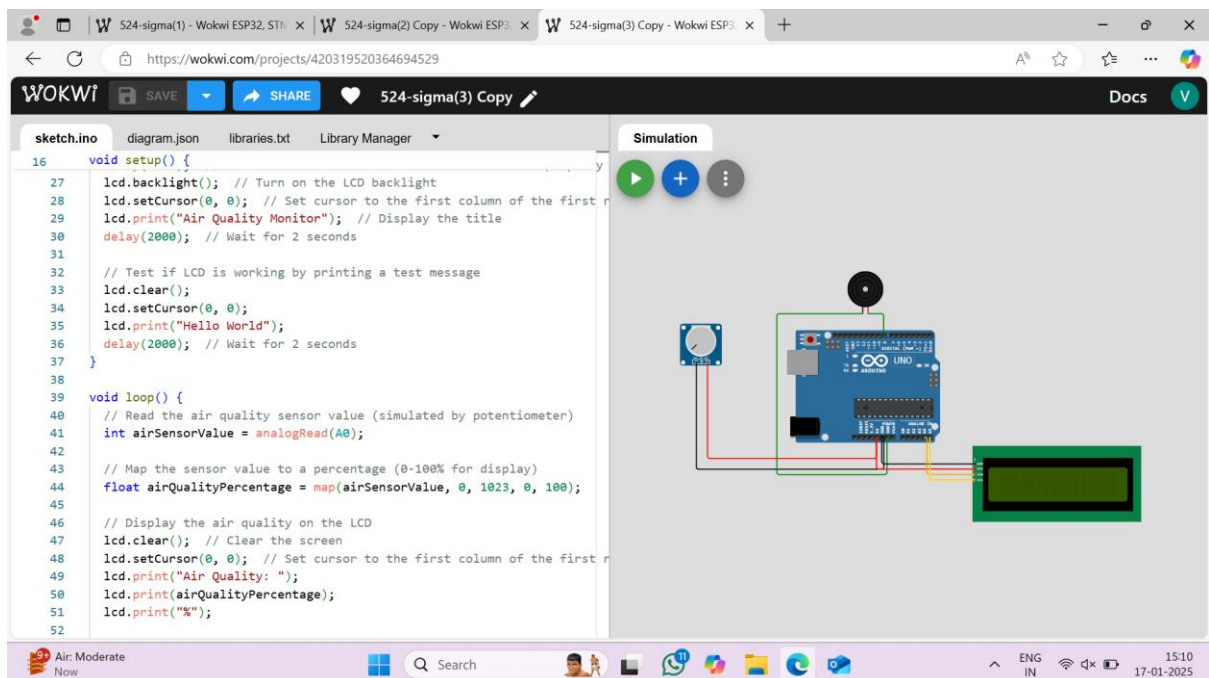
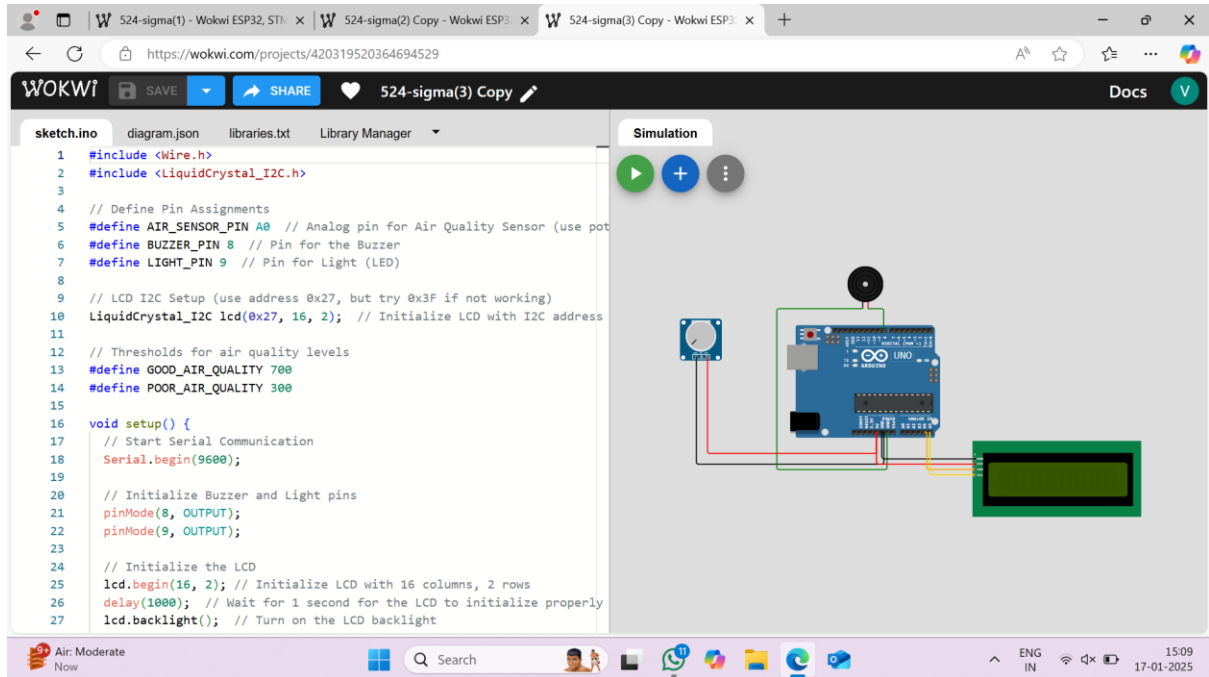
1Q) Write a Embedded C Program to Create a Weather Reporting System that provides real- time environmental data to users.

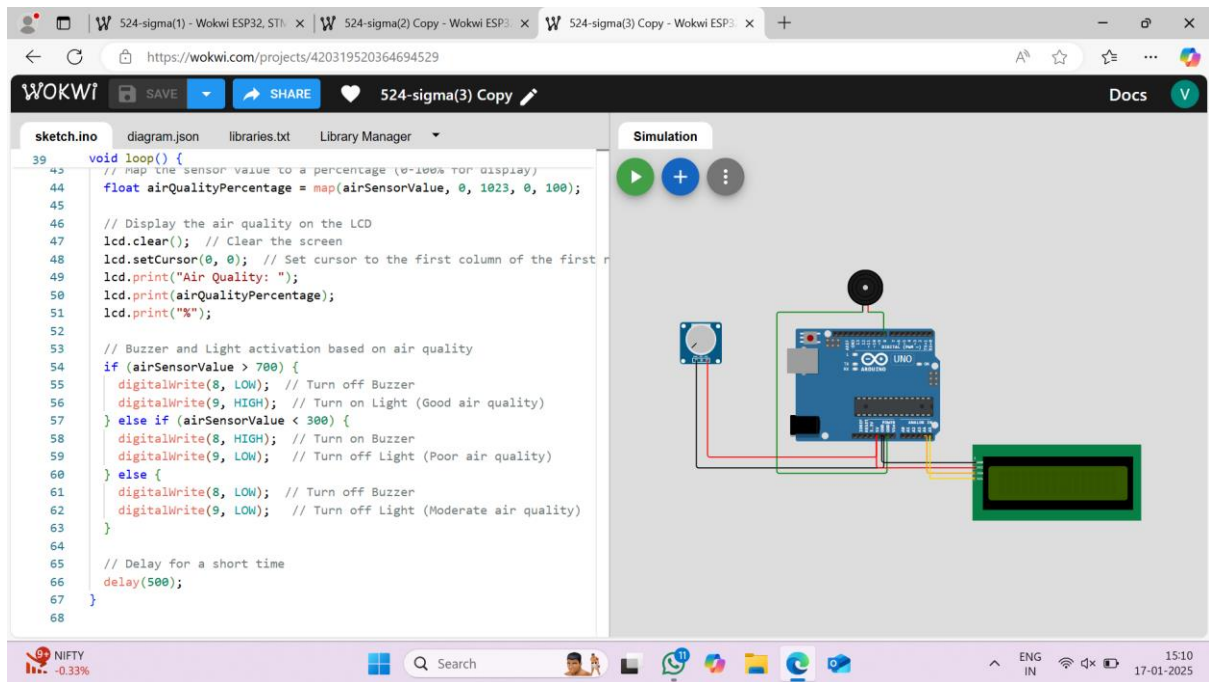


2Q) Write a Embedded C Program to Create a Home Automation System that simplifies daily routines (Any 2 Devices) by controlling devices remotely.

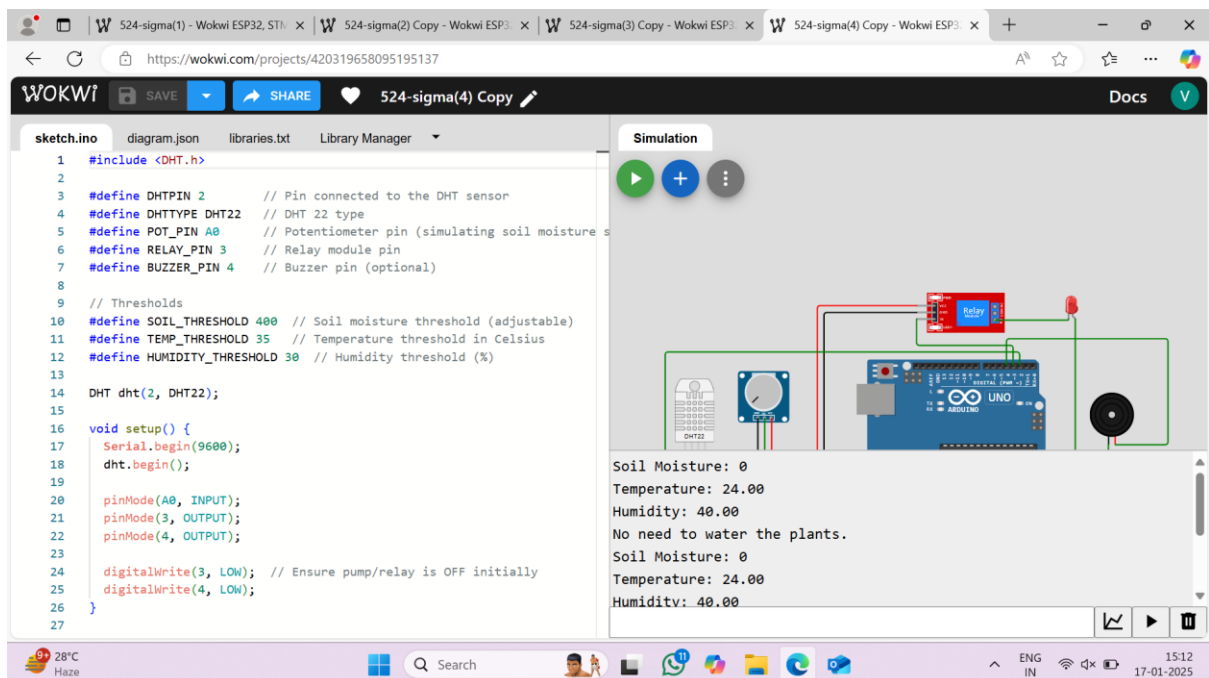


3Q) Write a Embedded C Program to Create an Air Pollution Monitoring System that tracks air quality levels in real-time to ensure a healthier environment.





4Q) Write a Embedded C Program to Create an IoT-based Smart Irrigation System for Agriculture that automates watering based on weather and soil conditions



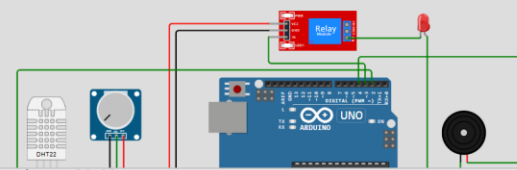
WOKWI

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sketch.ino diagram.json libraries.txt Library Manager

```
28 void loop() {
29   int soilValue = analogRead(A0); // Read potentiometer value
30   float temperature = dht.readTemperature(); // Read temperature
31   float humidity = dht.readHumidity(); // Read humidity
32
33   // Check if any reading failed
34   if (isnan(temperature) || isnan(humidity)) {
35     Serial.println("Failed to read from DHT sensor!");
36     return;
37   }
38
39   Serial.print("Soil Moisture: ");
40   Serial.println(soilValue);
41   Serial.print("Temperature: ");
42   Serial.println(temperature);
43   Serial.print("Humidity: ");
44   Serial.println(humidity);
45
46   // Check conditions to water plants
47   if (soilValue > SOIL_THRESHOLD && temperature < TEMP_THRESHOLD && humidity > HUMIDITY_THRESHOLD) {
48     Serial.println("Watering the plants...");
49     digitalWrite(3, HIGH); // Turn on the relay
50     digitalWrite(4, HIGH); // Optional alert
51     delay(5000); // Simulate watering duration (5 seconds)
52     digitalWrite(3, LOW); // Turn off the relay
53     digitalWrite(4, LOW);
54   } else {
55     Serial.println("No need to water the plants.");
56   }
57 }
```

Simulation



Temperature: 24.00
Humidity: 40.00
No need to water the plants.
Soil Moisture: 0
Temperature: 24.00
Humidity: 40.00
No need to water the plants.

28°C Haze

Search

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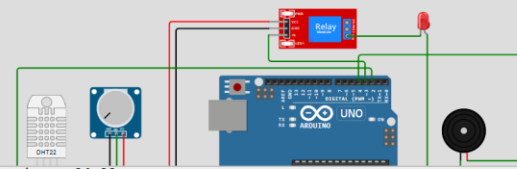
WOKWI

SAVE SHARE 524-sigma(4) Copy Docs

sketch.ino diagram.json libraries.txt Library Manager

```
28 void loop() {
45
46   // Check conditions to water plants
47   if (soilValue > SOIL_THRESHOLD && temperature < TEMP_THRESHOLD && humidity > HUMIDITY_THRESHOLD) {
48     Serial.println("Watering the plants...");
49     digitalWrite(3, HIGH); // Turn on the relay
50     digitalWrite(4, HIGH); // Optional alert
51     delay(5000); // Simulate watering duration (5 seconds)
52     digitalWrite(3, LOW); // Turn off the relay
53     digitalWrite(4, LOW);
54   } else {
55     Serial.println("No need to water the plants.");
56     digitalWrite(3, LOW); // Ensure relay is off
57     digitalWrite(4, LOW);
58   }
59
60   delay(2000); // Wait before the next reading
61 }
62
```

Simulation



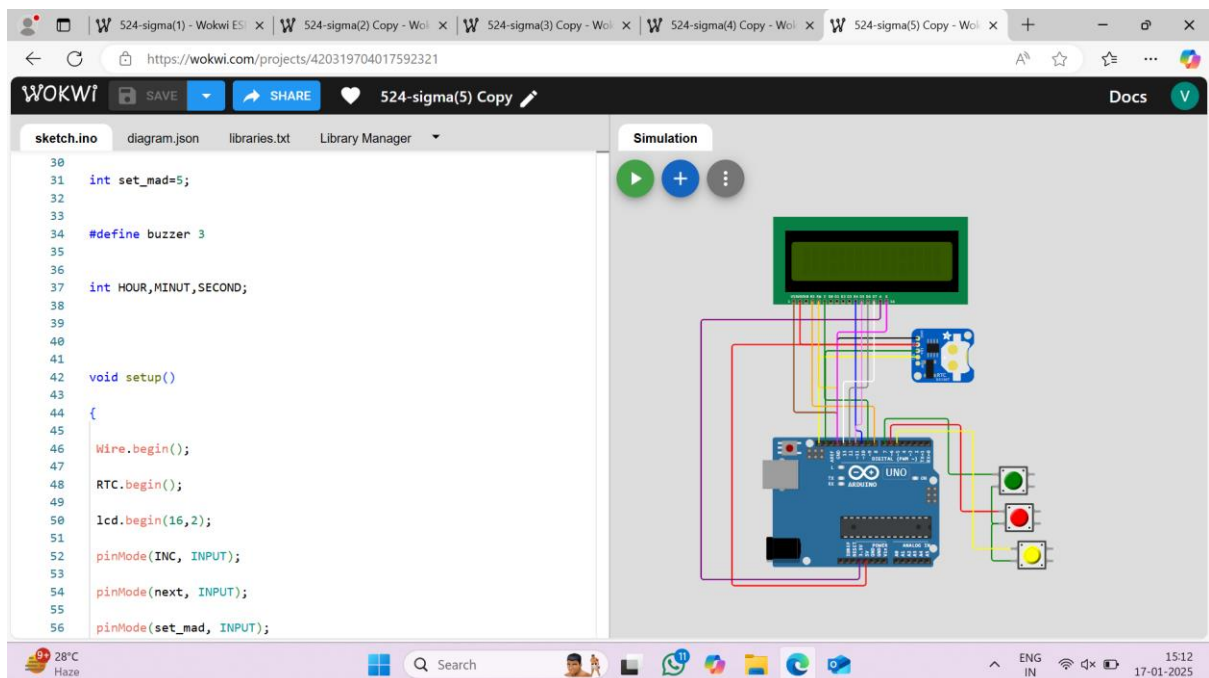
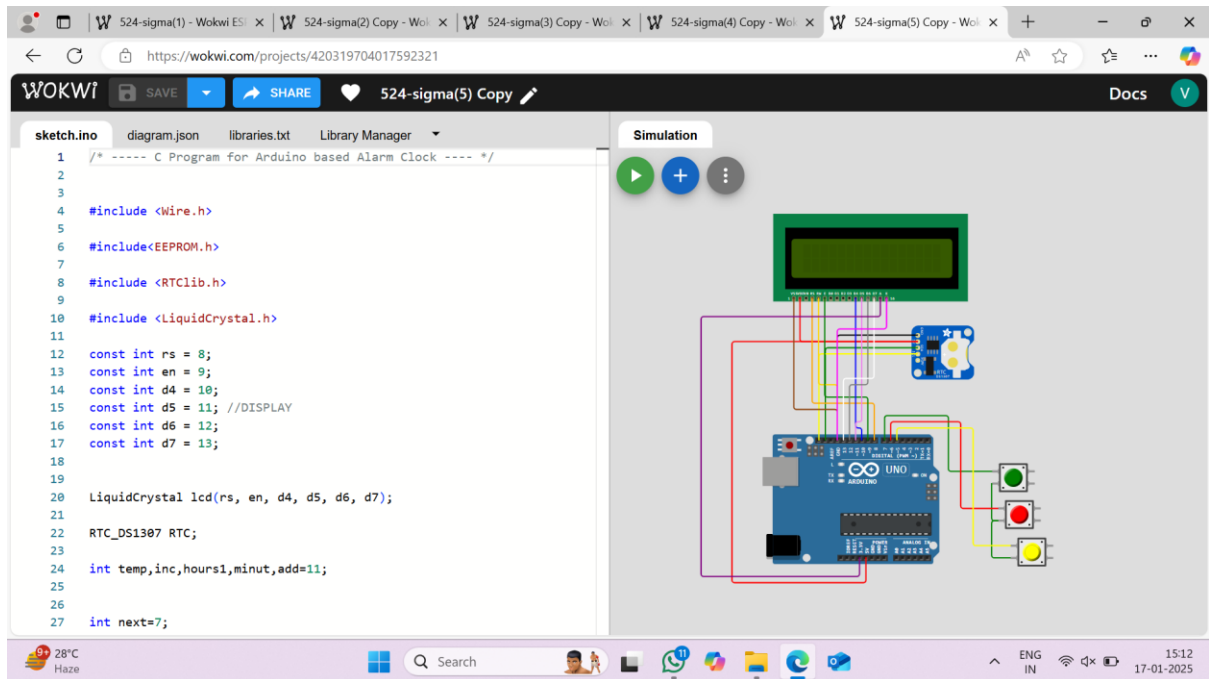
Temperature: 24.00
Humidity: 40.00
No need to water the plants.
Soil Moisture: 0
Temperature: 24.00
Humidity: 40.00
No need to water the plants.

28°C Haze

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5Q) Write a Embedded C Program to Create a Smart Alarm Clock that adjusts to your schedule and environment, waking you up intelligently.



WOKWI

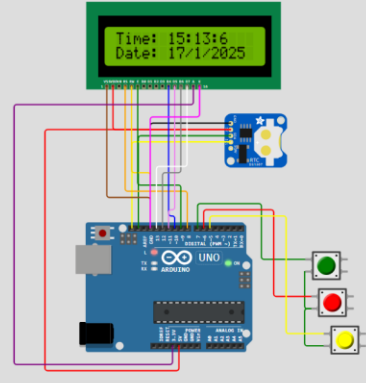
SAVE SHARE 524-sigma(5) Copy Docs

sketch.ino diagram.json libraries.txt Library Manager

```
44 {  
63  
64 digitalWrite(INC, HIGH);  
65  
66  
67  
68 lcd.setCursor(0,0);  
69  
70 lcd.print("Real Time Clock");  
71  
72 lcd.setCursor(0,1);  
73  
74 lcd.print("Circuit Digest ");  
75  
76 delay(2000);  
77  
78  
79  
80 if(!RTC.isrunning())  
81 {  
82  
83  
84 RTC.adjust(DateTime(__DATE__, __TIME__));  
85  
86 }  
87  
88 }
```

Simulation

00:06.780 100%



28°C Haze

Search

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