



University Institute of Engineering
Department of Computer Science & Engineering

Experiment: 1.1

Student Name:

UID:

Branch: Computer Science & Engineering

Section/Group

Semester: 2nd

Date of Performance:

Subject Name: Disruptive Technology-2

Subject Code: 22E-21ECH-103

1. Aim of the practical:

Introduction to open-source IoT Platform and basic interfacing Hands-on.

2. Tool Used:

ESP32, LED, Resistor, Breadboard, Arduino.

3. Basic Concept/ Command Description:

The ESP32 boards can be programmed using many different programming languages. For example, you can program your ESP32 board in C++ language (like the Arduino) or MicroPython. And to make use of all of the ESP32 features Espressif has officially provided the Espressif IoT Development Framework.



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4. Snap of Code:

```
Experiment 1 | Arduino IDE 2.0.0-beta.11
File Edit Sketch Tools Help
DOIT ESP32 DEVKIT V1
Experiment 1.ino
19 Serial.print("\n\nConnecting to");
20 Serial.println(WIFISSID);
21
22 WiFi.begin(WIFISSID,PASSWORD);
23 while (WiFi.status() != WL_CONNECTED){
24     delay(500);
25     Serial.print(".");
26 }
27 Serial.println("\nWiFi connected.IP address:");
28 Serial.println(WiFi.localIP());
29 }
30
31 // the loop function runs over and over again forever
32 void loop() {
33     digitalWrite(LED, HIGH); // turn the LED on (HIGH is the voltage level)
34     Serial.println("HIGH");
35     delay(1000); // wait for half a second
36     digitalWrite(LED, LOW); // turn the LED off by making the voltage LOW
37     Serial.println("LOW");
38     delay(1000); // wait for half a second
39 }
40
```



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Step 1: Verify the code

```
T1_Intro | Arduino 1.8.13
File Edit Sketch Tools Help

T1_Intro

WiFi.begin(WIFISSID, PASSWORD);
while (WiFi.status() != WL_CONNECTED) { // Waiting for successful connection
  delay(500);
  Serial.print(".");
}

Serial.print("\nRSSI: ");
Serial.println(WiFi.RSSI());

Serial.print("WiFi connected. IP address: ");
Serial.println(WiFi.localIP());
}

// the loop function runs over and over again forever
void loop() {
  digitalWrite(LED, HIGH); // turn the LED on (HIGH is the voltage level)
  //Serial.println("HIGH");
  delay(500); // wait for a second
  digitalWrite(LED, LOW); // turn the LED off by making the voltage LOW
  //Serial.println("LOW");
  delay(500); // wait for a second

  Serial.print("\nRSSI: ");
  Serial.println(WiFi.RSSI());

  Serial.print("WiFi connected. IP address: ");
  Serial.println(WiFi.localIP());
}

Compiling sketch...
```



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STEP 2: Upload the code:

```
T1_intro | Arduino 1.8.13
File Edit Sketch Tools Help

T1_intro

WiFi.begin(WIFISSID, PASSWORD);
while (WiFi.status() != WL_CONNECTED) { // Waiting for successful connection
  delay(500);
  Serial.print(".");
}

Serial.print("\nRSSI: ");
Serial.println(WiFi.RSSI());

Serial.print("WiFi connected. IP address: ");
Serial.println(WiFi.localIP());
}

// the loop function runs over and over again forever
void loop() {
  digitalWrite(LED, HIGH); // turn the LED on (HIGH is the voltage level)
  //Serial.println("HIGH");
  delay(500); // wait for a second
  digitalWrite(LED, LOW); // turn the LED off by making the voltage LOW
  //Serial.println("LOW");
  delay(500); // wait for a second

  Serial.print("\nRSSI: ");
  Serial.println(WiFi.RSSI());

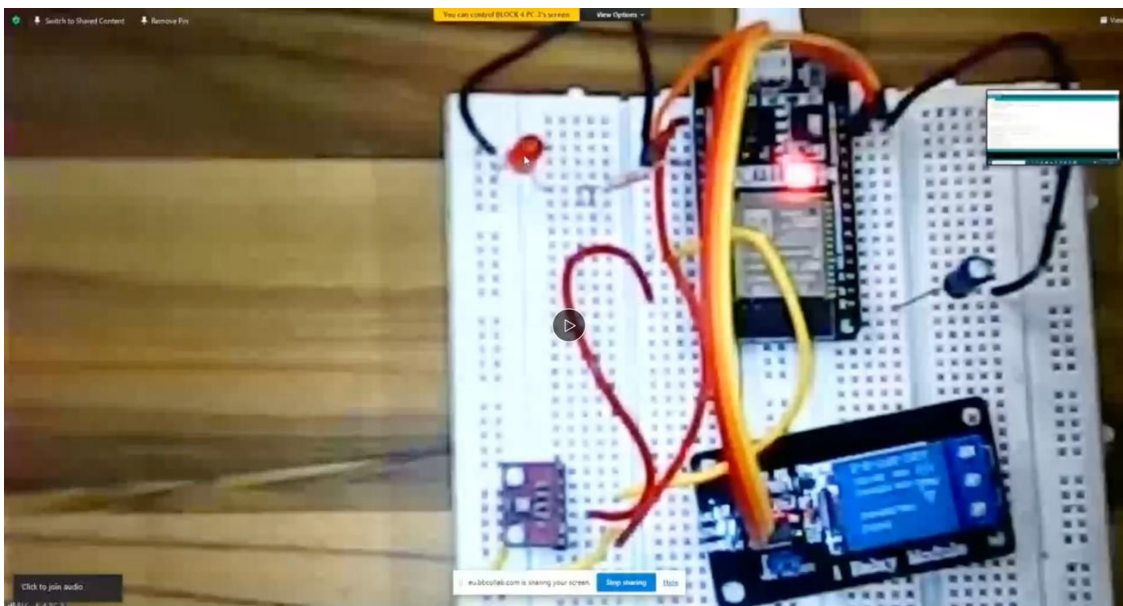
  Serial.print("WiFi connected. IP address: ");
  Serial.println(WiFi.localIP());
}

Uploading...
```



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STEP 3: LED TURNS OFF FOR TIME DELAY OF 500 SECONDS

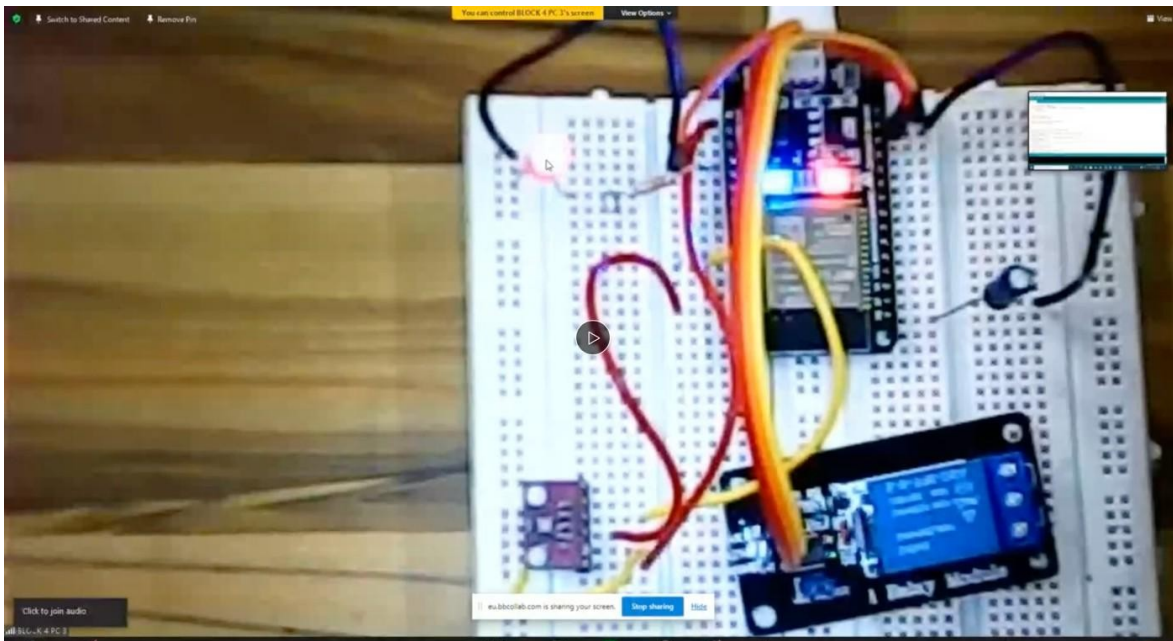




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STEP4: LED TURNS ON AFTER TIME DELAY OF 500 SECONDS





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5. Result and Summary:

In the Arduino IDE when, We write the code for the program called sketch and is uploaded the same to the circuit using USB the circuit works and as result we see the LED light blinking after the time delay we have set in the code. Hence successfully completing the experiment.

6. Learning outcomes (What I have learnt):

1. What is IOT and its applications.
2. How to Remotely Access the LAB's PC to perform experiment.
3. Verify and upload the code to the circuit.
4. How to program and modify the code.
5. The components of ESP32 AND ARDUINO UNO.

Evaluation Grid (To be filled by Faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Worksheet completion including writing learning objectives/Outcomes. (To be submitted at the end of the day)		10
2.	Post Lab Quiz Result.		5
3.	Student Engagement in Simulation/Demonstration/Performance and Controls/Pre-Lab Questions.		5
	Signature of Faculty (with Date):	Total Marks Obtained:	20



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