# ECTE474 – Internet of Things

# Web Dashboard

A screenshot of a computer

Description automatically generated

# Mobile Dashboard

A screenshot of a device

Description automatically generated

# Excel Sheet & Dashboard

A screenshot of a computer

Description automatically generated

# Function Scripts Code

function doGet(e) {

  Logger.log(JSON.stringify(e));

  var result = 'Ok';

  if (e.parameter == 'undefined') {

    result = 'No Parameters';

  }

  else {

    var sheet\_id = '1NVG90LHP-mqjiq4rLmFR37X7cgj6kXLzbivX4vqxsp4';  // Spreadsheet ID.

    var sheet\_name = "ESP32S\_Google\_Sheets\_Sheet";  // Sheet Name in Google Sheets.

    var sheet\_open = SpreadsheetApp.openById(sheet\_id);

    var sheet\_target = sheet\_open.getSheetByName(sheet\_name);

    var newRow = sheet\_target.getLastRow() + 1;

    var rowDataLog = [];

    var Data\_for\_I3;

    var Data\_for\_J3;

    var Data\_for\_K3;

    var Data\_for\_L3;

    var Data\_for\_M3;

    var Data\_for\_N3;

    var Data\_for\_O3;

    var Curr\_Date = Utilities.formatDate(new Date(), "Asia/Dubai", 'dd/MM/yyyy');

    rowDataLog[0] = Curr\_Date;  // Date will be written in column A (in the "DHT11 Sensor Data Logger" section).

    Data\_for\_I3 = Curr\_Date;  // Date will be written in column I3 (in the "Latest DHT11 Sensor Data" section).

    var Curr\_Time = Utilities.formatDate(new Date(), "Asia/Dubai", 'HH:mm:ss');

    rowDataLog[1] = Curr\_Time;  // Time will be written in column B (in the "DHT11 Sensor Data Logger" section).

    Data\_for\_J3 = Curr\_Time;  // Time will be written in column J3 (in the "Latest DHT11 Sensor Data" section).

    var sts\_val = '';

    for (var param in e.parameter) {

      Logger.log('In for loop, param=' + param);

      var value = stripQuotes(e.parameter[param]);

      Logger.log(param + ':' + e.parameter[param]);

      switch (param) {

        case 'sts':

          sts\_val = value;

          break;

        case 'srs':

          rowDataLog[2] = value;  // Sensor Reading Status will be written in column C (in the "DHT11 Sensor Data Logger" section).

          Data\_for\_K3 = value;  // Sensor Reading Status will be written in column K3 (in the "Latest DHT11 Sensor Data" section).

          result += ', Sensor Reading Status Written on column C';

          break;

        case 'temp':

          rowDataLog[3] = value;  // The temperature value will be written in column D (in the "DHT11 Sensor Data Logger" section).

          Data\_for\_L3 = value;  // The temperature value will be written in column L3 (in the "Latest DHT11 Sensor Data" section).

          result += ', Temperature Written on column D';

          break;

        case 'humid':

          rowDataLog[4] = value; // The humidity value will be written in column E (in the "DHT11 Sensor Data Logger" section).

          Data\_for\_M3 = value;  // The humidity value will be written in column M3 (in the "Latest DHT11 Sensor Data" section).

          result += ', Humidity Written on column E';

          break;

        case 'moist':

          rowDataLog[5] = value;  // The state of Switch\_1 will be written in column F (in the "DHT11 Sensor Data Logger" section).

          Data\_for\_N3 = value;  // The state of Switch\_1 will be written in column N3 (in the "Latest DHT11 Sensor Data" section).

          result += ', Light Written on column F';

          break;

        case 'light':

          rowDataLog[6] = value;  // The state of Switch\_2 will be written in column G (in the "DHT11 Sensor Data Logger" section).

          Data\_for\_O3 = value;  // The state of Switch\_2 will be written in column O3 (in the "Latest DHT11 Sensor Data" section).

          result += ', Moisture Written on column G';

          break;

        default:

          result += ", unsupported parameter";

      }

    }

    // Conditions for writing data received from ESP32 to Google Sheets.

    if (sts\_val == 'write') {

      // Writes data to the "DHT11 Sensor Data Logger" section.

      Logger.log(JSON.stringify(rowDataLog));

      var newRangeDataLog = sheet\_target.getRange(newRow, 1, 1, rowDataLog.length);

      newRangeDataLog.setValues([rowDataLog]);

      // Write the data to the "Latest DHT11 Sensor Data" section.

      var RangeDataLatest = sheet\_target.getRange('I3:O3');

      RangeDataLatest.setValues([[Data\_for\_I3, Data\_for\_J3, Data\_for\_K3, Data\_for\_L3, Data\_for\_M3, Data\_for\_N3, Data\_for\_O3]]);

      return ContentService.createTextOutput(result);

    }

    // Conditions for sending data to ESP32 when ESP32 reads data from Google Sheets.

    if (sts\_val == 'read') {

      // Use the line of code below if you want ESP32 to read data from columns I3 to O3 (Date,Time,Sensor Reading Status,Temperature,Humidity,Switch 1, Switch 2).

      // var all\_Data = sheet\_target.getRange('I3:O3').getDisplayValues();

      // Use the line of code below if you want ESP32 to read data from columns K3 to O3 (Sensor Reading Status,Temperature,Humidity,Switch 1, Switch 2).

      var all\_Data = sheet\_target.getRange('K3:O3').getValues();

      return ContentService.createTextOutput(all\_Data);

    }

  }

}

function stripQuotes( value ) {

  return value.replace(/^["']|['"]$/g, "");

}