

EE366 Final Project

“Home Irrigation System”

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Section: HA

Agenda

Introduction

Circuit Design

Flowchart

Simulation Pictures (Proteus 8)

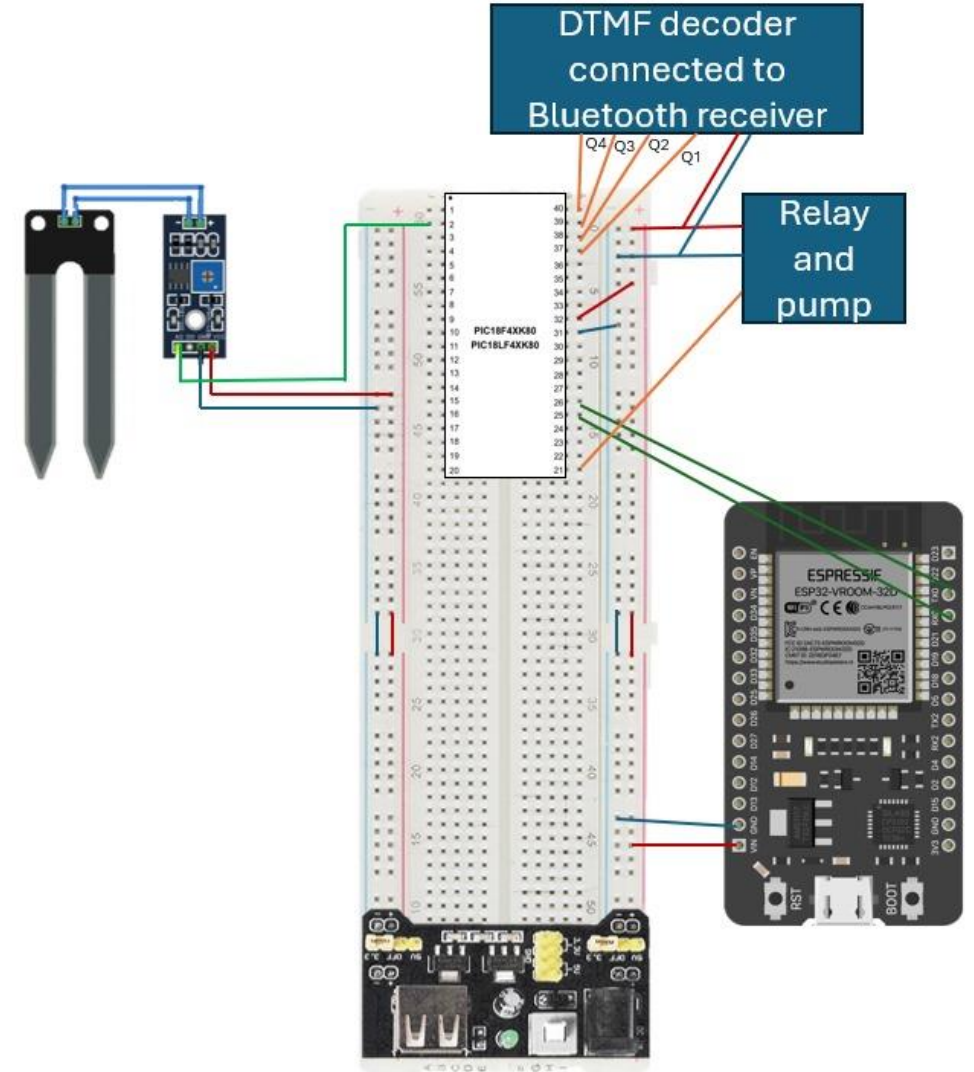
Project Pictures

Introduction

- A wiseman once said: “If you mastered the microcontroller, you can control anything”
(Dr.Wassim Alzouch)
- Our project helps to monitor the soil humidity level.
- Automatically provide the soil with some water when it gets dry.
- Notify the user through an e-mail with the moisture level.
- Allow the user to manually control the pump that waters the **soil**.

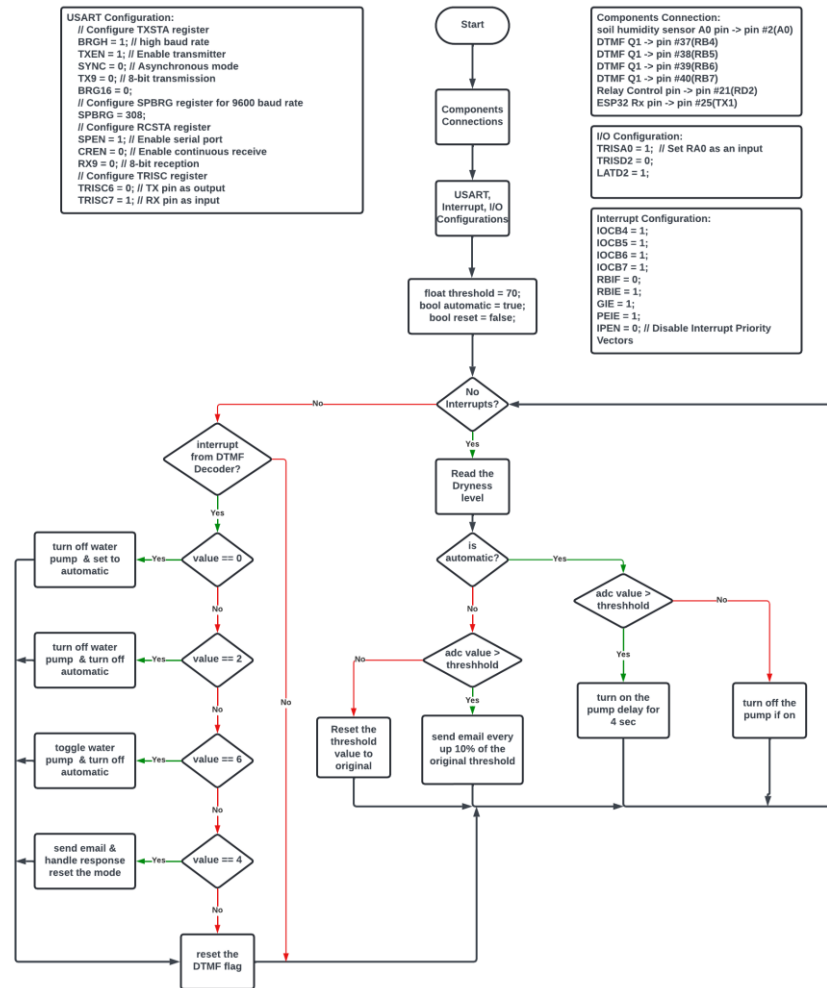
Circuit Design

Auto = 1
Manual = 2
Pump = 6
Reset/off = 4



Flowchart

If the manual mode is on, an e-mail will be sent every +10 of the threshold if the soil was still dry.

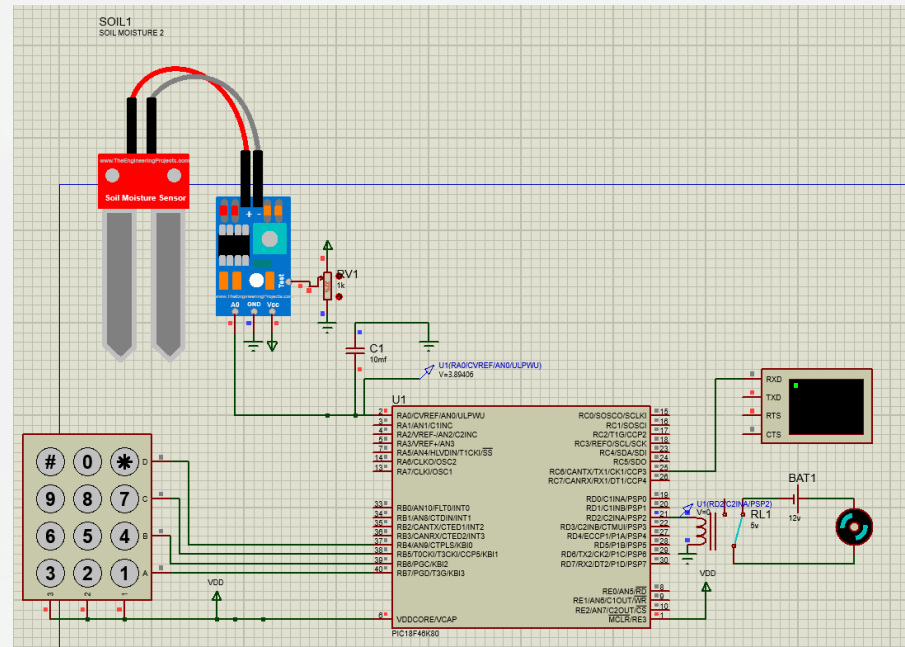


```

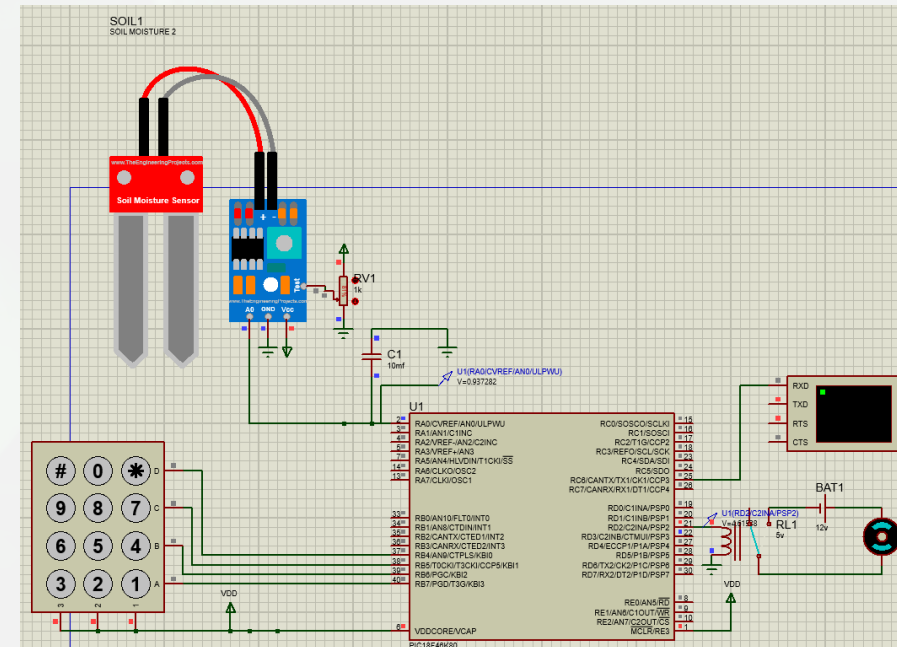
} else {
    if (adc_value > thresholdM) {
        // send email with dryness level
        UART_Write(30);
        thresholdM += 10;
    } else if (adc_value < threshold || reset) {
        thresholdM = threshold;
    }
}
  
```

Simulation Pictures (Proteus 8)

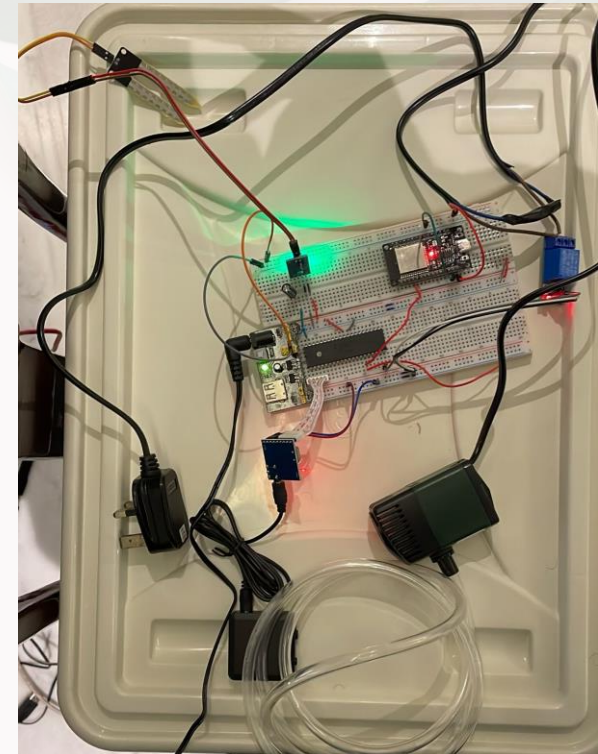
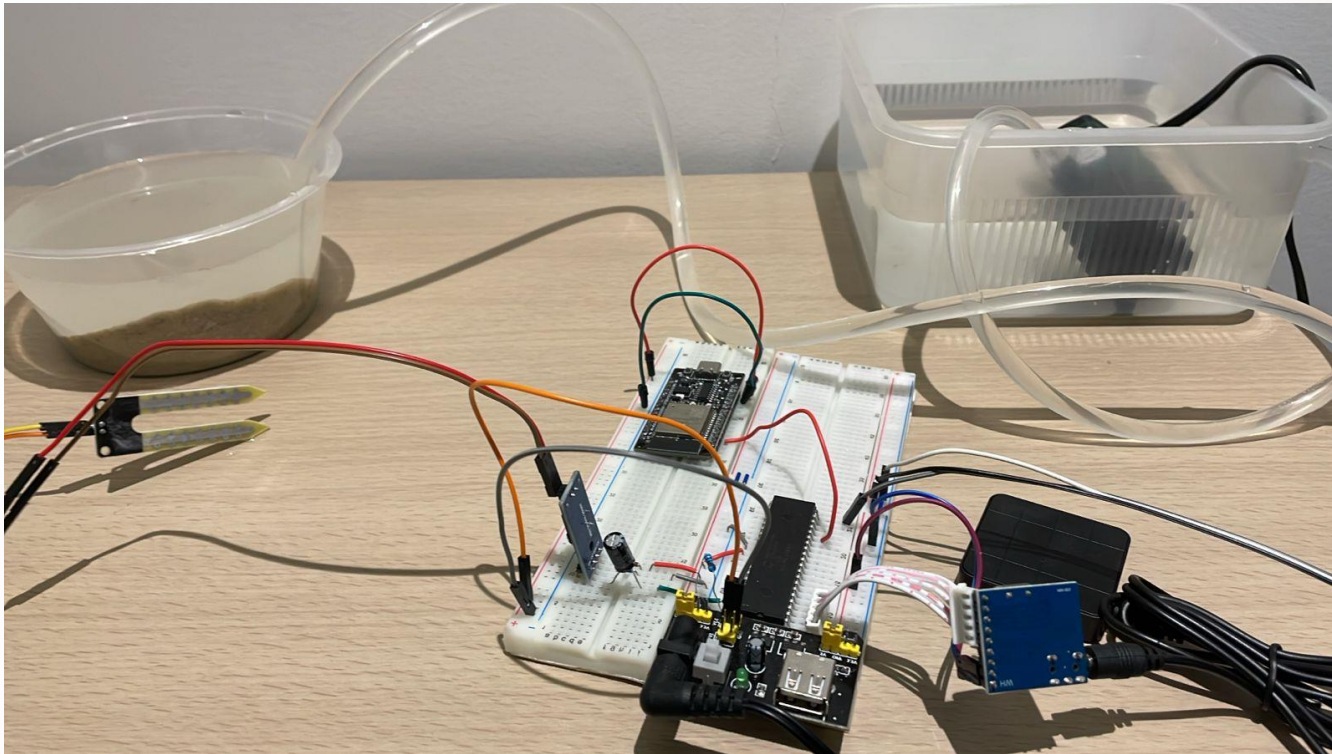
Low Humidity (Water Pump = ON)



High Humidity (Water Pump = OFF)



Project Pictures



Project Pictures (Apps Script Server)

```
function doGet(e){
    return sendEmail("Low moisture levels","Soil moisture levels are currently down to 30%; Kindly refill using the home button icons.")
}
function sendEmail(sub,type) {
    MailApp.sendEmail({
        to: "mbathallath@stu.kau.edu.sa",
        subject: sub,
        body: "\n" + type + " Incident was detected on " + getDate()
    });
}

function getDate(){
    var currentDate = new Date();
    var formattedDate = Utilities.formatDate(currentDate, Session.getScriptTimeZone(), "yyyy-MM-dd HH:mm:ss");
    return formattedDate;
}
```


The image features a central white rectangular area with the text "Thank you" in a black serif font. This central area is flanked on both the left and right sides by vertical panels showing a close-up of green, elongated leaves, possibly from a plant like a banana or a similar tropical species. The leaves are oriented vertically and show some natural texture and lighting variations.

Thank you