American International University – Bangladesh
Faculty Of Engineering
Department Of Electrical & Electronics Engineering (EEE)

Section : N Group : 03

Automatic Plant Watering System

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Introduction

- Automatic Water Irrigation System
- Monitoring Soil Moisture
- Triggering Irrigation
- Precise Watering
- Ensuring Plant Health
- Peace of Mind for Owners

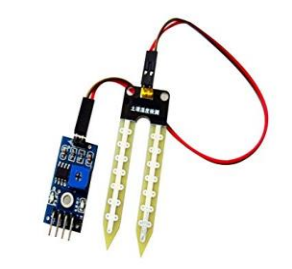
Apparatus

Arduino uno

5-volt relay module

Water Pump

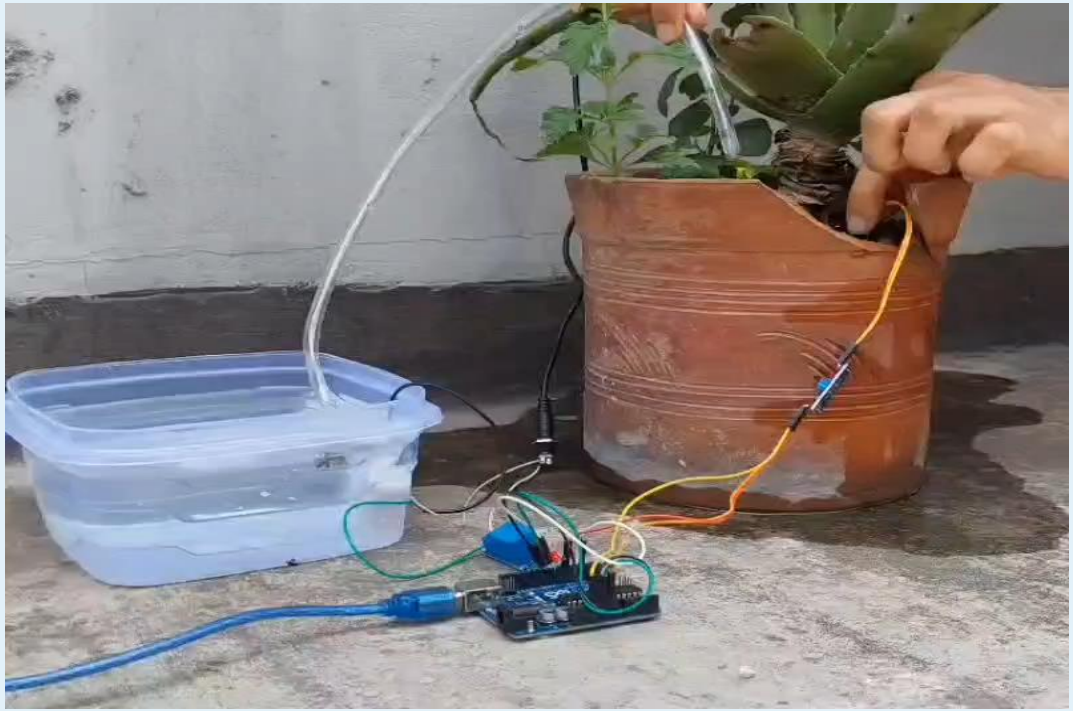
Connecting Wires



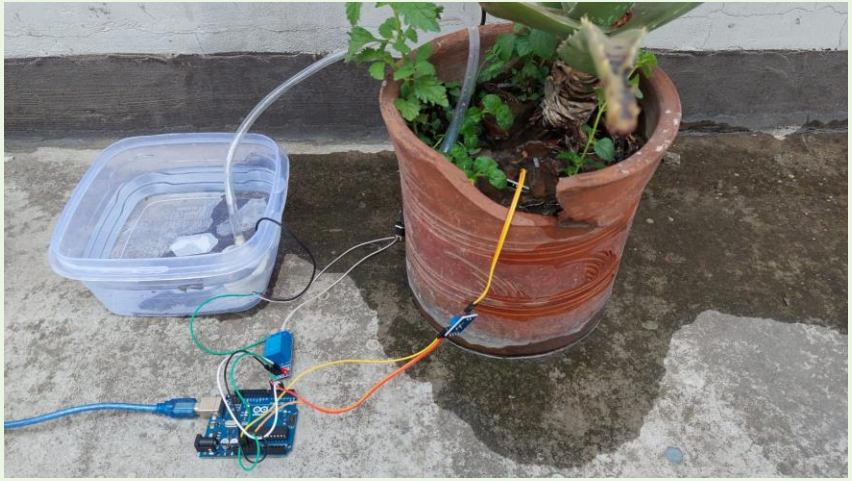
Soil moisture sensor

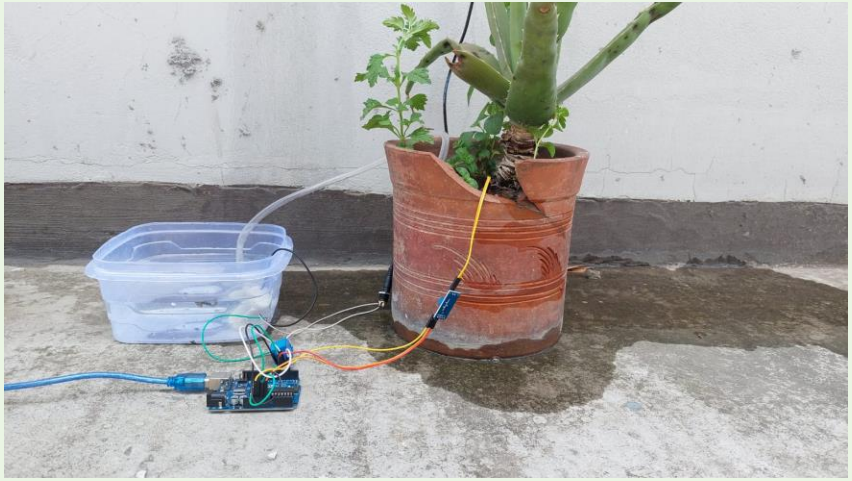
Pipe

Our Project



Our project





Procedure

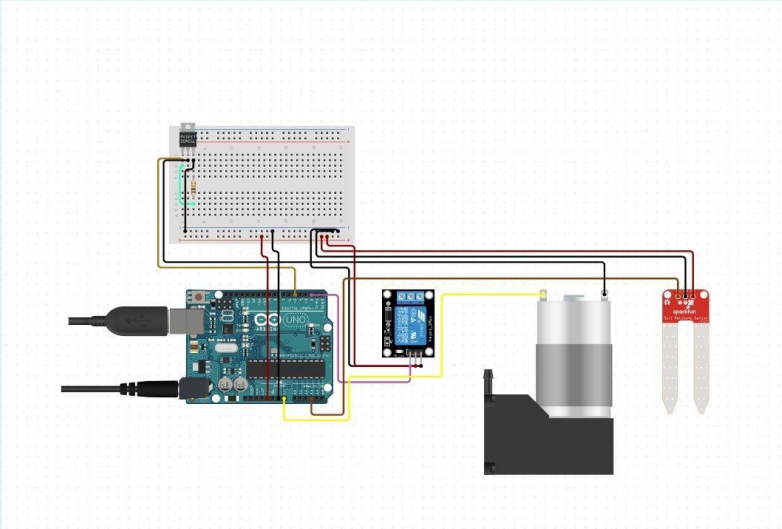
For the Soil Moisture Sensor:

•We started by connecting both pins of the soil moisture sensor to the main control board.

•Then, we connected the VCC pin of the main control board to the 3.5volt pin of the Arduino.

•Next, we attached the ground pin of the main control board to the ground pin of the Arduino.

•Finally, we connected the DO pin (digital output pin) of the soil moisture sensor to pin number 6 of the Arduino.



For the Relay Module and Water Pump:

•We connected the VCC pin of the relay module to the 5volt pin of the Arduino.
•Then, we linked the ground pin of the relay module to the ground pin of the Arduino.
•Next, we connected the IN pin of the relay module to pin number 3 of the Arduino.
•On the other side of the relay module, we connected one terminal of the 5V supply to the common pin of the relay module.
•We connected the other terminal of the 5V supply to the NO pin (normally open pin) of the relay module.
•Finally, we connected the water pump to the NO pin of the relay module.

How our project works

1. The soil moisture sensor constantly checks how wet plant's soil is.
2. When the soil gets dry, the sensor sends a signal to the Arduino.
3. The Arduino then activates the relay module, which turns on the water pump.
4. The pump delivers water to plant until the sensor detects enough moisture.
5. Once the plant is happy, the Arduino shuts off the pump to prevent overwatering.

Thank You!