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COURSE TITLE : COMPUTER INTERFACING
COURSE CODE: CSE360
PROJECT PROPOSAL
GROUP-06

Prepared by:

Abid Hossain Ashik
Zahin Zaima
Md. Yasin
Sadaf M. Anis
Nur - E - Jannat (ID: 21301744)

Prepared to:

Md. Shazid Bin Mahbub
Lecturer
Department of Computer Science and Engineering
BRAC University

Sumaiya Tanjil Khan
Lecturer
Department of Computer Science and Engineering
BRAC University

Project Title: Automated Agriculture System

Project Description: In this project, we divided the overall system into four parts to describe sequentially.

- **Automated Irrigation:**

We will use a water tank, a pump, ultrasonic and soil moisture sensor. We will determine the water demand by using soil moisture sensor and the pump will automatically turn on and off when necessary. Also, we will determine the water level of the water tank using an ultrasonic sensor and display the data on the LCD display.

- **Water Drainage and Recycling:**

When the rain starts, the rain drop sensor will sense rainwater and the drainage gate will be opened through a servo motor. This rainwater goes to a pond which is situated beside the land. In addition, when the storage tank is empty/ is in low level (ultrasonic sensor sense this), the pump motor will be activated automatically with the help of a water pump motor, 1 channel 5V relay module and finally move the water from pond to storage tank. This is how we recycle the rainwater in our irrigation system. Algorithm:

1. When rains
 - ☐ Gate opens
2. When not rains
 - ☐ Gate closes
3. When tank not full
 - ☐ Pump on
4. When tank full
 - ☐ Pump off

- **Sun Tracking Solar Panel:**

Create a solar tracking system using an LDR and solar panel to detect sunlight, and a servo motor to move the solar panels. The solar panel will detect sunlight and rotate 90 (45 to 135) degrees based on the sun's location.

- **Unwanted Entrance Detection:**

The IR Obstacle sensor, deactivates when the user enters and activates when only the user is not there. If anyone attempts to enter, it detects the intrusion and triggers by activating the buzzer, LED to signal unwanted entrance. The PIR sensor double ensures that any living existence is already in the area.

Components Required:

Specification	Component
Automated Irrigation	Solid Moisture Sensor, Ultrasonic Sensor, Water Pump, DIP 3 Color RGB LED Module
Water Drainage and Recycling	Rain drop sensor, SG90 Servo Motor, Water pump motor
Sun Tracking Solar Panel	SG90 Servo Motor, LDR Sensor 10MM(2), Resistor 10K(2), Solar Panel
Unwanted Entrance Detection	IR Obstacle Sensor, PIR Sensor, Buzzer, LED
Accessories	Arduino Uno R3, Jumper wire, Breadboard, PVC Board

Refernce:

Motor-relay connection

https://www.youtube.com/watch?v=Z0SZ-jzu_q8&t=59s

Rain sensor- servo motor

https://www.youtube.com/watch?v=RxWD_-h7O8Y

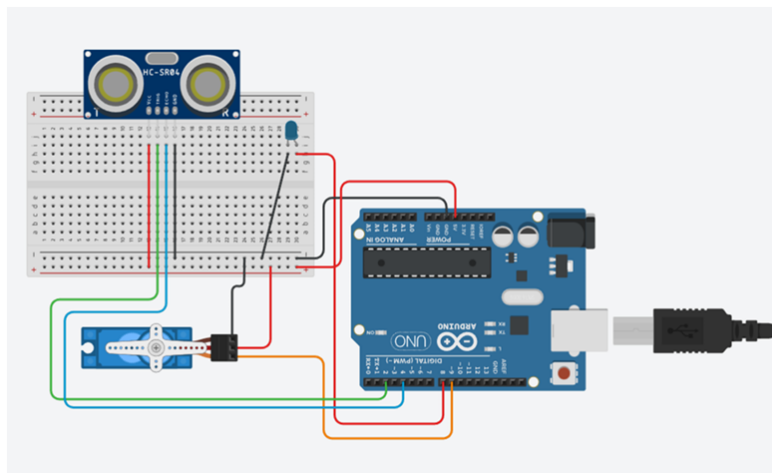


Figure-1: Circuit of drainage system