**APPENDIX**

**CODE:**

#include <Servo.h>;  
Servo drill,drop,moisture;  
  
//Motor A  
const int inputPin5  = 14;  
//Motor B  
const int inputPin1  = 10;

   // Pin 15 of L293D IC  
const int inputPin2  = 11;

   // Pin 10 of L293D IC  
//Motor C  
const int inputPin3  = 9;

  // Pin  7 of L293D IC  
const int inputPin4  = 8;

  // Pin  2 of L293D IC  
// Pin 15 of L293D IC  
  
void setup()

{

pinMode(4,INPUT);  
  pinMode(5,INPUT);  
  pinMode(6,INPUT);  
  drill.attach(4);  
  drop.attach(5);  
  moisture.attach(6);  
    pinMode(inputPin5, OUTPUT);  
      pinMode(inputPin1, OUTPUT);  
    pinMode(inputPin2, OUTPUT);  
    pinMode(inputPin3, OUTPUT);  
    pinMode(inputPin4, OUTPUT);    
}  
  
 // put your setup code here, to run once  
  
  
void loop()

{

  drill.write(180);  
  delay(3000);  
   digitalWrite(inputPin5, HIGH);  
   delay(6000);  
   drill.write(0);  
   delay(3000);  
  
   digitalWrite(inputPin1,LOW);

 //A  
   digitalWrite(inputPin2, HIGH);  
   digitalWrite(inputPin3, LOW);  
    digitalWrite(inputPin4, HIGH);    
    delay(3000);  
  
    digitalWrite(inputPin1, LOW);

 //B  
    digitalWrite(inputPin2, HIGH);  
    digitalWrite(inputPin3, LOW);  
    digitalWrite(inputPin4, HIGH);    
    delay(3000);  
  
    drop.write(45);  
    delay(1000);  
    drop.write(0);  
    delay(3000);  
     
   digitalWrite(inputPin1,LOW);

 //A  
   digitalWrite(inputPin2, HIGH);  
   digitalWrite(inputPin3, LOW);  
   digitalWrite(inputPin4, HIGH);    
   delay(3000);  
  
   digitalWrite(inputPin1, LOW);

 //B  
   digitalWrite(inputPin2, HIGH);  
   digitalWrite(inputPin3, LOW);  
   digitalWrite(inputPin4, HIGH);    
  s delay(3000);  
   
  
}

#define moisture\_sensorPin A0

#define float\_switchPin A1

#define motorPin 4

#define soil\_statusPin 2

#define tank\_statusPin

const int avg\_moisture = 800;

void setup()

{

Serial.begin(9600);

lcd.begin(16,2);

lcd.clear();

lcd.setCursor(0,0);

lcd.print(" AUTOMATIC ");

lcd.setCursor(0,1);

lcd.print(" IRRIGATION S/M ");

delay(2000);

pinMode(moisture\_sensorPin,INPUT);

pinMode(float\_switchPin,INPUT);

pinMode(motorPin,OUTPUT);

pinMode(soil\_statusPin,OUTPUT);

pinMode(tank\_statusPin,OUTPUT);

digitalWrite(motorPin,LOW);

digitalWrite(soil\_statusPin,LOW);

digitalWrite(tank\_statusPin,LOW);

}

void loop()

{

lcd.begin(16,2);

lcd.setCursor(0,0);

lcd.print(" MOISTURE - ");

if(analogRead(moisture\_sensorPin) > avg\_moisture)

{

lcd.print("HIGH");

digitalWrite(soil\_statusPin,HIGH);

}

If(analogRead(moisture\_sensorPin) < avg\_moisture)

{

lcd.print(" LOW");

digitalWrite(soil\_statusPin,LOW);

}

lcd.setCursor(0,1);

lcd.print("TANK LEVEL- ");

if( digitalRead(float\_switchPin) == HIGH)

{

lcd.print("HIGH");

digitalWrite(tank\_statusPin,LOW);

}

if( digitalRead(float\_switchPin) == LOW)

{

lcd.print(" LOW");

digitalWrite(tank\_statusPin,HIGH);

}

digitalWrite(motorPin,LOW);

if(analogRead(moisture\_sensorPin) < avg\_moisture && digitalRead(float\_switchPin) == HIGH)

{

while(analogRead(moisture\_sensorPin) < avg\_moisture && digitalRead(float\_switchPin) == HIGH)

{

lcd.setCursor(0,0);

lcd.print(" MOISTURE - LOW");

lcd.setCursor(0,1);

lcd.print(" MOTOR IS ON ");

digitalWrite(soil\_statusPin,LOW);

digitalWrite(tank\_statusPin,LOW);

digitalWrite(motorPin,HIGH);

}

if(analogRead(moisture\_sensorPin) > avg\_moisture)

{

lcd.setCursor(0,0);

lcd.print(" MOISTURE - HIGH");

lcd.setCursor(0,1);

lcd.print(" MOTOR - OFF ");

digitalWrite(soil\_statusPin,HIGH);

digitalWrite(motorPin,LOW);

delay(3000);}

if(digitalRead(float\_switchPin) == LOW)

{

lcd.setCursor(0,0);

lcd.print(" TANK LEVEL- LOW");

lcd.setCursor(0,1);

lcd.print(" MOTOR - OFF ");

digitalWrite(tank\_statusPin,HIGH);

digitalWrite(motorPin,LOW);

delay(3000);

} }

delay(500);

}