```
#include <LiquidCrystal.h>
#include "DHT.h"

LiquidCrystal lcd(2, 3, 4, 5, 6,7);
const int relay_Pin = 8;
const int DHT11_Sesnor = 9;
const int moisture_sensor = A0;
const int rain_Sesnor = A1;

#define DHTTYPE DHT11
int  moisture_sensor_value;
int rain_Sesnor_value;
float humudity_value,temprature_value;
DHT dht(DHT11_Sesnor, DHTTYPE);

void setup() {
  Serial.begin(9600);
  pinMode(relay_Pin, OUTPUT);
  lcd.begin(16, 2);
  lcd.print("Smart Irrigation ");
  lcd.setCursor(0,2);
  lcd.print(" SYSTEM");
  digitalWrite(relay_Pin, LOW);
  dht.begin();
   delay(2000);
}
void loop()
{

  readDTH11_Sesnor();
  moisture_level_detected();
  water_motor_start();
}


void readDTH11_Sesnor()
{

  // Reading temperature or humidity takes about 250 milliseconds!
  // Sensor readings may also be up to 2 seconds 'old' (its a very slow sensor)
  humudity_value = dht.readHumidity();
  // Read temperature as Celsius (the default)
  temprature_value = dht.readTemperature();

  // Check if any reads failed and exit early (to try again).
  if (isnan(humudity_value) || isnan(temprature_value)) {
    Serial.println(("Failed to read from DHT sensor!"));
    return;
  }

  Serial.print((" Humidity: "));
  Serial.print(humudity_value);
  Serial.print(("%"));
  lcd.clear();
```

```
  lcd.print("Humidity %: ");
  lcd.setCursor(0,2);
  lcd.print(humudity_value);
  Serial.print("\n");
  delay(1000);
  Serial.print(("Temperature: "));
  Serial.print(temprature_value);
  Serial.print(("C "));
  lcd.clear();
  lcd.print("Temperature degCel");
  lcd.setCursor(0,2);
  lcd.print(temprature_value);
  Serial.print("\n");
  delay(1000);
}

void moisture_level_detected()
{

  moisture_sensor_value = analogRead(moisture_sensor);
  Serial.println("Moisture Level : ");
  Serial.println(moisture_sensor_value);
  lcd.clear();
  lcd.print("Moisture Level :");
  lcd.setCursor(0,2);
  lcd.print(moisture_sensor_value);
  delay(2000);
}

void water_motor_start()
{

 rain_Sesnor_value = analogRead(rain_Sesnor);
 Serial.print("rain sensor value :: ");
 Serial.println(rain_Sesnor_value);
 delay(1000);
 if(rain_Sesnor_value > 700)
 {
    if(moisture_sensor_value > 700 )
    {
      digitalWrite(relay_Pin, HIGH);
      delay(2000);
    }
    else
    {
      digitalWrite(relay_Pin, LOW);
      delay(2000);
    }
 }
 else
 {
  digitalWrite(relay_Pin, LOW);
  delay(2000);
 }
```

```
}
```