Automatic Greenhouse Construction with Arduino

**Materials:**

* [Arduino UNO R3 Klon](https://www.robotistan.com/arduino-uno-r3-klon-usb-kablo-hediyeli-usb-chip-ch340?h=424a5daa&OM.zn=CategoryPage%20-%20CatTopSeller-w21&OM.zpc=13956)
* [2×16 LCD Ekran](https://www.robotistan.com/2x16-lcd-ekran-mavi-uzerine-beyaz)
* [Mini Dalgıç Pompa 6V](https://www.robotistan.com/mini-dalgic-pompa-6v-120-litresaat)
* [2 Kanal 5 V Röle Kartı](https://www.robotistan.com/2-way-5v-relay-module-2li-5v-role-karti-1)
* [Su Seviyesi / Yağmur Sensörü](https://www.robotistan.com/su-seviyesi-yagmur-sensoru-water-level-rain-sensor)
* [DHT11 Sıcaklık ve Nem Sensörü](https://www.robotistan.com/dht11-sicaklik-ve-nem-sensoru)
* [Toprak Nemi Algılama Sensörü](https://www.robotistan.com/toprak-nemi-algilama-sensoru)
* [80x80x25 mm Fan](https://www.robotistan.com/80x80x25mm-fan-12v-0)
* [IRFZ44 – 49 A 55 V MOSFET](https://www.robotistan.com/irfz44n-49a-55v-mosfet-to220)
* [IC205 180 Derece Sürgülü Siviç](https://www.robotistan.com/ic205-180-derece-surgulu-switch)
* [IC177 Mavi Push Buton](https://www.robotistan.com/ic177-mavi-push-buton)
* [10 mm LDR](https://www.robotistan.com/10mm-ldr-1)
* [10K Direnç](https://www.robotistan.com/14w-10k-direnc-paketi-10-adet#ins_eureka=eyJjYW1wYWlnbklkIjowLCJrZXl3b3JkIjoiMTBrIiwib3JkZXIiOjEsInByb2R1Y3RJZCI6IjEyMjI3Iiwic2VhcmNoSWQiOiIxNjE1NjU1NzQ3SW9UVDdkSklsNiJ9)
* [10k pot](https://www.robotistan.com/10k-potansiyometre-ayarli-direnc#ins_eureka=eyJjYW1wYWlnbklkIjowLCJrZXl3b3JkIjoiMTBrIHBvdCIsIm9yZGVyIjo0LCJwcm9kdWN0SWQiOiIxMjQ0NSIsInNlYXJjaElkIjoiMTYxNTY1NzYwOG1iSU5IU1JpVWoifQ%3D%3D)

**Circuit :**



**Codes:**

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| #include <LiquidCrystal.h>#include <DHT.h>LiquidCrystal lcd(8, 7, 6, 5, 4, 3);#define DHTPIN 2#define DHTTYPE DHT11DHT dht(DHTPIN, DHTTYPE);int esik1= 600;int esik2= 300;int esik3= 800;int buttonfan= A4;int buttonfanDurum=0;int buttonled= A3;int buttonledDurum=0;int buttonnem= A5;int buttonnemDurum=0;int switch1= 11;int switch1Durum= 0;int switch2= 12;int switch2Durum= 0;int ldr= A2;int ldrDurum;int suseviye= A1;int suveri;int topraknem= A0;int toprakveri;int fan= 9;int led= 10;int sumotoru= 13;int fanhiz=0;int ledparlaklik=0;void setup() {dht.begin();lcd.begin(16, 2);pinMode(buttonfan, INPUT);pinMode(buttonled, INPUT);pinMode(buttonnem, INPUT);pinMode(switch1, INPUT);pinMode(switch2, INPUT);pinMode(ldr, INPUT);pinMode(suseviye, INPUT);pinMode(topraknem, INPUT);pinMode(fan, OUTPUT);pinMode(led, OUTPUT);pinMode(sumotoru, OUTPUT);pinMode(1, OUTPUT);}void loop() { int temp = dht.readTemperature(); int hum = dht.readHumidity();  buttonledDurum=digitalRead(buttonled); buttonfanDurum=digitalRead(buttonfan); buttonnemDurum=digitalRead(buttonnem); switch1Durum=digitalRead(switch1); switch2Durum=digitalRead(switch2); ldrDurum=analogRead(ldr); suveri=analogRead(suseviye); toprakveri=analogRead(topraknem); //\*\*\*\* Water tank \*\*\*\*// if(suveri>600){ digitalWrite(1, HIGH);  } if(suveri<300){ digitalWrite(1, LOW); }//\*\*\*\*\*\*\*\* user mode \*\*\*\*\*\*\*\*//if(switch1Durum == LOW && switch2Durum==LOW){lcd.clear();lcd.setCursor(0,0);lcd.print("temp:");lcd.print(temp);lcd.print("c");lcd.setCursor(9, 0);lcd.print("Hum:%");lcd.print(hum);lcd.setCursor(0, 1);lcd.print("L:");lcd.print(ledparlaklik);lcd.setCursor(5,1);lcd.print("F:");lcd.print(fanhiz);lcd.setCursor(10, 1);lcd.print("T:");lcd.print(esik1);delay(100);//\*\*\*\*\*\*\*\* fan speed \*\*\*\*\*\*\*\*//if(buttonfanDurum == HIGH){ fanhiz= fanhiz +10;}if(fanhiz==260){ fanhiz=0;}analogWrite(fan, fanhiz);//\*\*\*\*\*\*\*\*led parlaklik\*\*\*\*\*\*\*\*//if(buttonledDurum == HIGH){ ledparlaklik= ledparlaklik +10;}if(ledparlaklik==260){ ledparlaklik=0;}if(ldrDurum> 900){ analogWrite(led, ledparlaklik);}else{ analogWrite(led, LOW);}//\*\*\*\*\*\*\*\* water \*\*\*\*\*\*\*\*//if(buttonnemDurum==HIGH){ delay(10); esik1= esik1+ 100;}if (esik1== 1100){ esik1=600;}if(toprakveri> esik1){digitalWrite(sumotoru, HIGH);delay(5000);digitalWrite(sumotoru, LOW);delay(5000); }if(toprakveri<esik1){ digitalWrite(sumotoru, LOW);} } //\*\*\*\*\*\*\*\* rainforest \*\*\*\*\*\*\*\*// if(switch1Durum == HIGH && switch2Durum == LOW){lcd.clear();lcd.setCursor(0,0);lcd.print("Yagmur ormani");lcd.setCursor(0,1);lcd.print("temp:");lcd.print(temp);lcd.print("C");lcd.setCursor(9, 1);lcd.print("Hum:%");lcd.print(hum);delay(100);analogWrite(fan, 200);if (ldrDurum> 900){ analogWrite( led, 50);} else{ analogWrite(led, LOW);  } //\*\*\*\*\*\*\*\* water \*\*\*\*\*\*\*\*// if(toprakveri> esik2){ digitalWrite(sumotoru, HIGH); delay(5000); digitalWrite(sumotoru, LOW); delay(500);  } if(toprakveri<esik2){ digitalWrite(sumotoru, LOW); } }//\*\*\*\*\*\*\*\* temperature \*\*\*\*\*\*\*\*// if(switch1Durum == HIGH && switch2Durum == HIGH){lcd.clear();lcd.setCursor(5,0);lcd.print("Col");lcd.setCursor(0,1);lcd.print("temp:");lcd.print(temp);lcd.print("C");lcd.setCursor(9, 1);lcd.print("Hum:%");lcd.print(hum);delay(100);analogWrite(fan, 0);if (ldrDurum> 900){ analogWrite( led, 250);} else{ analogWrite(led, LOW);  } //\*\*\*\*\*\*\*\* water \*\*\*\*\*\*\*\*// if(toprakveri> esik3){ digitalWrite(sumotoru, HIGH); delay(5000); digitalWrite(sumotoru, LOW); delay(500);  } if(toprakveri<esik3){ digitalWrite(sumotoru, LOW); }  }} |

Source: https://maker.robotistan.com/arduino-ile-otomatik-sera/