Question

Distance-based automatic servo + LCD display system. Commonly used for auto door, smart dustbin, safety systems, etc

Code :

```
#include <LiquidCrystal.h>
#include <Servo.h>
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);
Servo myservo;
Const int trigPin = 6;
Const int echoPin = 7;
Void setup() {
  Serial.begin(9600);
  Myservo.attach(9);
  pinMode(13, OUTPUT);
  pinMode(trigPin, OUTPUT);
  pinMode(echoPin, INPUT);
  lcd.begin(16, 2);
  lcd.print(“Distance System”);
}
Void loop() {
 Long duration, cm;
  // Ultrasonic Trigger
  digitalWrite(trigPin, LOW);
  delayMicroseconds(2);
  digitalWrite(trigPin, HIGH);
```

```
 delayMicroseconds(20);
 digitalWrite(trigPin, LOW);
 // Read echo
 Duration = pulseIn(echoPin, HIGH);
 Cm = microsecondsToCentimeters(duration);
 // Condition
 If (cm > 100 && cm < 150) {
  digitalWrite(13, HIGH);
  myservo.write(90);
 } else {
  digitalWrite(13, LOW);
  myservo.write(0);
 }
 // Serial Print
 Serial.print(cm);
 Serial.println(“ cm”);
 // LCD Print
 Lcd.setCursor(0, 1);
 Lcd.print(“Dist: “);
 Lcd.print(cm);
 Lcd.print(“ cm   “);
 Delay(100);
}
Long microsecondsToCentimeters(long microseconds) {
 Return microseconds / 29 / 2;
}
```

Process to run

1. Open Arduino IDE

Start the Arduino IDE on your laptop.

2. Create a new sketch

Click File → New.

3. Paste the corrected code

Remove everything already in the sketch.

Paste the full corrected code I gave you.

4. Select your Arduino board

Go to Tools → Board

Choose Arduino UNO (or whichever board you are using).

5. Select the correct COM port

Go to Tools → Port

Choose something like COM3 / COM4 (Windows)

Or /dev/ttyUSB0 (Linux)

Or /dev/cu.usbmodem (Mac).

6. Check Libraries

These libraries are already included in Arduino IDE:

LiquidCrystal.h

Servo.h

So no extra installation required.

7. Connect your Arduino

Plug it into the laptop with USB cable.

8. Verify the code

Click ✓ Verify button (top left).

It should compile without errors.

9. Upload the code

Click → Upload button.

IDE will say: “Done Uploading”

10. Open Serial Monitor

Click Tools → Serial Monitor

Set baud rate to 9600

You will see the distance printed.