PROJECT CONNECTIONS GUIDE (ENGLISH)

1. Arduino Mega 2560
- Main MCU board powering coils, LCD, sensor, and encoder.

2. Power System
- 12V → L298N VS input.
- 5V → Arduino + LCD (common ground required).

3. L298N Motor Drivers
L298N #1:
ENA→D2, IN1→D22, IN2→D26
ENB→D4, IN3→D28, IN4→D30

L298N #2:
ENA→D6, IN1→D24, IN2→D32
ENB→D8, IN3→D34, IN4→D36

Coils:
Coil1→OUT1/OUT2
Coil2→OUT3/OUT4
Coil3→OUT1/OUT2
Coil4→OUT3/OUT4

4. VL53L0X Sensor
VIN→5V
GND→GND
SDA→D20
SCL→D21
XSHUT→D7

5. LCD (RepRap 20x4)
EXP1:
D35, D16(RS), D25, D29(EN), 5V
D37, D17, D23, D27, GND

EXP2:
D52, D53, D51, D41, NC
D50, D31, D33, D49, GND

6. Rotary Encoder
CLK→D40
DT →D42
SW →D44
+5V, GND

7. Notes
- All grounds must be connected.
- Safe coil current: 0.12–0.22A.
- Do not run electromagnets without PWM.