ARDUINO DUAL 7-SEGMENT DICE ROLLER WITH SOUND EFFECTS

Project Description

A multiplayer electronic dice roller that simulates two 6-sided dice with:
- Realistic rolling animations
- Tactile feedback via passive buzzer
- Two-player control (either button triggers both dice)

Key Features

1. Hardware

- 2x 7-segment displays (74LS48 BCD decoders, 3-bit input)

- 2x Pushbuttons with external pull-up resistors

- 1x Passive buzzer (PWM-controlled sound effects)

2. Software

- Synchronized visual/sound effects

- Random number generation with proper seeding

- Debounced button inputs

3. User Experience

- Either player can initiate rolls

- "Tumbling" sound during animation

- Satisfying "thud" when dice settle

Wiring Guide

Displays:

- Die 1: Pins 3(A), 4(B), 5(C)

- Die 2: Pins 8(A), 9(B), 10(C)

- D pins grounded (1–6 range)

Buttons:

- Player 1: Pin 2 to GND (external pull-up)

- Player 2: Pin 11 to GND (external pull-up)

Buzzer:

- Pin 6(+) to buzzer, GND(-) with 100Ω resistor