Link:<https://www.tinkercad.com/things/lGf6ZCBetRw/editel?returnTo=%2Fdashboard%2Fdesigns%2Fcircuits&sharecode=8mpGCU50gifz70yWCFmsSWtFkY-hqcly1FiJ3ekTOLU>

**Arduino-Based Elevator Control System**

**🧠 Project Description:**

This project is a **simulation of a 3-floor elevator system** using an Arduino. The goal is to control a **DC motor** (representing the elevator movement) based on **push button inputs** (floor selection), using an **L293D motor driver IC**. Each floor is represented by an **LED**, which lights up when the elevator reaches that floor.

**🔧 Hardware Components Used (in TinkerCad):**

| **Component** | **Purpose** |
| --- | --- |
| Arduino UNO | Main controller |
| DC Motor | Represents the elevator movement |
| L293D IC | Controls motor direction & speed |
| Push Buttons x3 | User input for floor selection |
| LEDs x3 | Indicate current floor (0, 1, 2) |
| Resistors | Used with LEDs and buttons |
| Breadboard | For easy wiring |
| Power Supply | Power to motor driver |

**⚙️ Working Principle:**

1. **User Input**:
   * User presses one of the 3 **push buttons** to select a floor (0, 1, or 2).
2. **Motor Control with L293D**:
   * The Arduino reads the selected floor.
   * Based on the current floor, it sets motor direction (up/down).
   * The motor runs for **2 seconds per floor** (e.g., floor 0 → 2 = 4 sec).
3. **LED Indicators**:
   * Only the LED of the **current floor** turns ON.
   * Others remain OFF.
4. **Software Logic**:
   * Uses digitalRead() for buttons.
   * Uses digitalWrite() and delay() to control motor.
   * Ensures elevator only moves when a new floor is selected.
   * Handles floor updates and LED status with clean modular code.

**💡 Features:**

* 3-floor simulation using buttons
* Motor direction controlled with L293D
* Floor LEDs indicate elevator position
* Simple and easy-to-understand logic
* Can be extended with buzzer, LCD, or 7-segment display

**🧠 What We Have Done:**

✅ Designed the circuit in **TinkerCad**  
✅ Connected **push buttons** with pull-up logic  
✅ Used **L293D** to control motor direction  
✅ Wrote **Arduino code** to move elevator only on button press  
✅ Added **LED indication** for each floor  
✅ Debugged and corrected **button wiring**  
✅ Ensured system works smoothly with clean logic