**Mini-piano**

**1. Components Needed**

1. **Arduino Board** (Uno, Mega, or Nano)
2. **Piezo Buzzer** (or small speaker)
3. **Push Buttons** (one for each note)
4. **Resistors** (10kΩ, one for each button)
5. **Breadboard and Jumper Wires**

**2. Features**

* Each button corresponds to a musical note.
* When a button is pressed, the Arduino plays the associated note using the buzzer.
* Optionally, you can add LEDs to light up when a note is played.

**3. Circuit Diagram**

1. **Piezo Buzzer:**
   * Connect one terminal of the buzzer to a PWM pin (e.g., pin 9).
   * Connect the other terminal to GND.
2. **Buttons:**
   * Connect one pin of each button to digital input pins (e.g., pins 2–8).
   * Connect the other pin of each button to GND.
   * Use 10kΩ resistors as pull-up resistors on each button pin (or enable internal pull-up resistors in code).
3. **LEDs (Optional):**
   * Connect an LED to each button with a 220Ω resistor in series.

**5. How It Works**

* Each button corresponds to a note (C, D, E, F, G, A, B).
* When you press a button, the tone() function plays the frequency of the associated note on the buzzer.
* If no button is pressed, the noTone() function stops the sound.

**6. Expanding the Project**

* **Add more notes**: Expand the scale to include sharps and flats.
* **Use a capacitive touch sensor**: Replace buttons with touch-sensitive pads for a sleek design.
* **Visual Feedback**: Add LEDs or an LCD to show the note being played.
* **MIDI Output**: Connect the Arduino to a computer and use it as a MIDI device.

Project Link:- https://wokwi.com/projects/418250262659273729