

```

int speakerPin = A2;
int highx = 255;
int lowx = 0;
int length = 15;// the number of notes
char notes[] = "ccggaagffeeddc "; // a space represents a rest
int beats[] = { 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, 1, 1, 2, 4 };
int tempo = 300;
void playTone(int tone, int duration) {
    for (long i = 0; i < duration * 1000L; i +=tone * 2) {
        analogWrite(speakerPin, highx);
        delayMicroseconds(tone);
        analogWrite(speakerPin, lowx);
        delayMicroseconds(tone);
    }
}
void playNote(char note,int duration) {
    char names[] = {'c', 'd', 'e', 'f', 'g', 'a', 'b', 'C' };
    int tones[] = { 1915, 1700, 1519, 1432, 1275, 1136, 1014, 956 };
    // play the tone corresponding to the note name
    for (int i = 0; i < 8; i++) {
        if (names[i] == note) {
            playTone(tones[i], duration);
        }
    }
}
void setup() {
    pinMode(speakerPin, OUTPUT);
}
void loop() {
    for (int i = 0; i < length; i++) {
        if (notes[i] == ' ') {
            delay(beats[i] * tempo); // rest
        }else {
            playNote(notes[i], beats[i] * tempo);
        }

        // pause between notes
        delay(tempo / 2);
    }
}

```