int speakerPin = 11;

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, 1, 2, 4 };

int tempo = 300;

void playTone(int tone, int duration) {

 for (long i = 0; i < duration \* 1000L; i += tone \* 2) {

 digitalWrite(speakerPin, HIGH);

 delayMicroseconds(tone);

 digitalWrite(speakerPin, LOW);

 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);

 }

}