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);

}

}