#include <reg51.h>

// Function to generate a delay

void delay\_ramp(unsigned int time) {

unsigned int i, j;

for (i = time; i > 0; i--) {

for (j = 0; j < 10; j++);

}

}

// Generate square wave

void square\_wave() {

P1 = 0x00; // Set port P1 as output (initialize to low)

while (1) {

P1 = 0xFF; // Set all bits of P1 high

delay\_ramp(1000); // Delay for high state

P1 = 0x00; // Set all bits of P1 low

delay\_ramp(1000); // Delay for low state

}

}

// Send data to DAC (for triangular wave)

void send\_dac(unsigned int dat) {

P1 = dat;

}

// Generate triangular wave

void triangular\_wave() {

unsigned int a;

while (1) {

// Rising ramp edge

for (a = 0x00; a < 0xFF; a++) {

send\_dac(a);

delay\_ramp(1);

}

// Falling ramp edge

for (a = 0xFF; a > 0; a--) {

send\_dac(a);

delay\_ramp(1);

}

}

}

void main() {

// Uncomment one of these to test the wave generation

// square\_wave(); // To generate square wave

// triangular\_wave(); // To generate triangular wave

}