

START

Setup relay pin as OUTPUT

Setup microphone input

Create sample array

Set THRESHOLD = 400

Set relay_state = OFF

FUNCTION get_sound_level:

 Read sound samples from mic

 Find average value

 Calculate RMS (sound level)

 RETURN RMS

LOOP forever:

 Get current sound level

 Print sound level

 IF sound level > THRESHOLD:

 Change relay_state (ON → OFF or OFF → ON)

 Set relay to relay_state

 Wait 0.5 seconds

 Wait 0.1 seconds

END LOOP