

```
function r = my_thd(x, fs, n_harm)
% inputs
% x - signal (vector)
% fs - sample frequency (scalar)
% n_harm - number of harmonics to remove

% calculate fft in decibels from signal
N = length(x);

% calculate the psd with a rectangular window
[psd, f] = periodogram(x, rectwin(N), N, fs);

% find the fundamental
[~, f_idx] = max(psd);
fundamental_freq = f(f_idx);

% calculate the power of the fundamental and n harmonics
for harmonic = 1:n_harm
    h_idx = harmonic * f_idx;
    p_h(harmonic) = bandpower(psd, f, [f(h_idx-harmonic) f(h_idx+harmonic)], 'psd');
end

r = 100 * sqrt(sum(p_h(2:end)) / p_h(1));
end
```