

```
function r = my_snr(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);

% remove the fundamental and n harmonics
psdn = psd;
for harmonic = 1:n_harm
    harm_f = harmonic * fundamental_freq;
    harm_idx = harmonic * f_idx;
    for i = harm_idx-harmonic:harm_idx+harmonic
        psdn(i) = median(psd);
    end
end

%psd_db = 10*log10(psd);
%psdn_db = 10*log10(psdn);

sig_pwr = bandpower(psd, f, 'psd');
noise_pwr = bandpower(psdn, f, 'psd');
r = 10*log10(sig_pwr / noise_pwr);

end
```