

HW 6

A noisy ECG signal is provided in the file `ecg.hfn.dat`. The sampling rate of this signal 1000 Hz.

- 1. Downsample the signal by 5. Keep only every 5th sample and the sampling rate will be reduced from 1000 Hz to 200 Hz. Plot the downsampled signals. ($x_d[n] = x[5n]$)
- 2. Applied the function of `resample` in Matlab to perform the above process.
resample Resample uniform or nonuniform data to a new fixed rate.
`Y = resample(X,P,Q)` resamples the values, `X`, of a uniformly sampled signal at `P/Q` times the original sample rate using a polyphase antialiasing filter. If `X` is a matrix, then `resample` treats each column as an independent channel.
- Compare the results with the original signals in time domain and the frequency responses. (recall Lecture 5)

Due date: 5/28 2025 上課前10分鐘

電子檔上傳至 moodle

