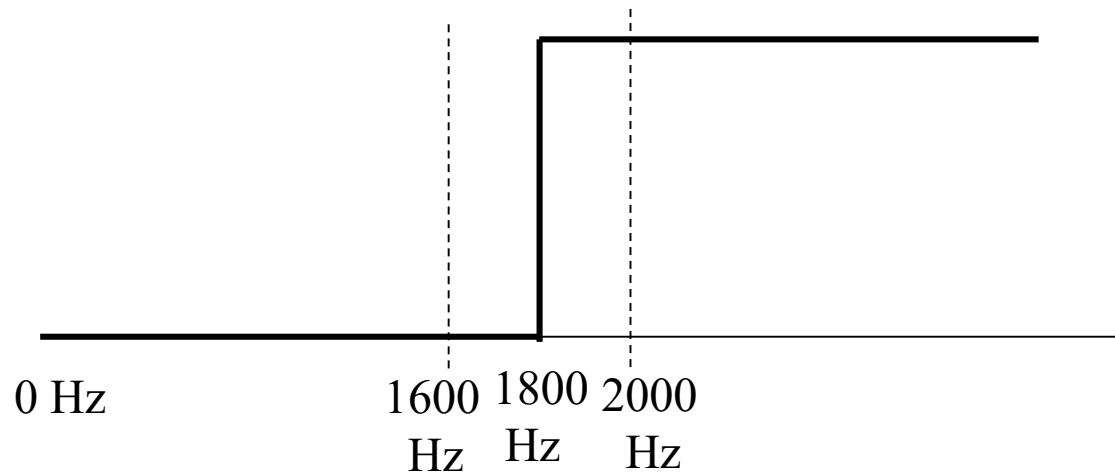


Homework 1 (Due: March 22nd)

(1) Design a Mini-max **highpass** FIR filter such that (40 scores)

- ① Filter length = 21, ② Sampling frequency $f_s = 8000\text{Hz}$,
- ③ Pass Band 1800~4000Hz ④ Transition band: 1600~2000 Hz,
- ⑤ Weighting function: $W(F) = 1$ for passband, $W(F) = 0.8$ for stop band .
- ⑥ Set $\Delta = 0.0001$ in Step 5.



※ The code should be handed out by NTUCool, too.

Show (a) the frequency response, (b) the impulse response $h[n]$, and (c) the maximal error for each iteration.