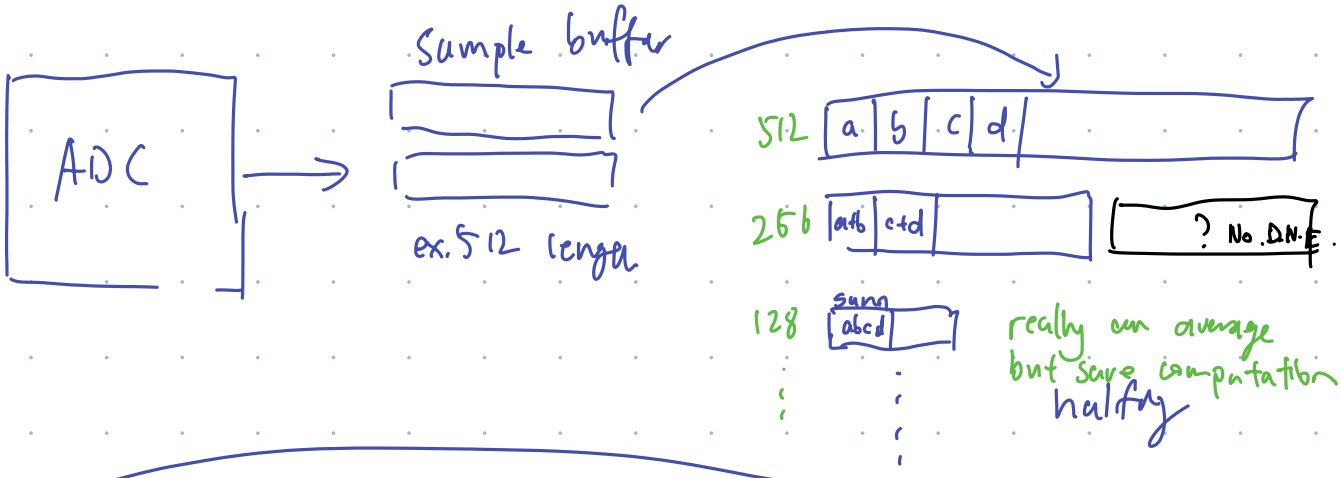
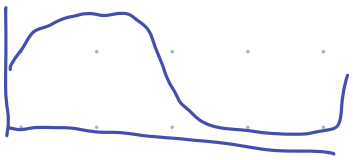


for each

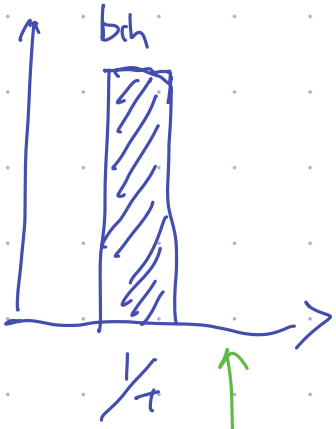
x



$f(x) = \sin(t \cdot w) + \cos(t \cdot w)$

this is aliasing property DFT

get



Regarding phase: $f(t) = \sin(wt + p)$ (freq, phase; $f(t)$ input)

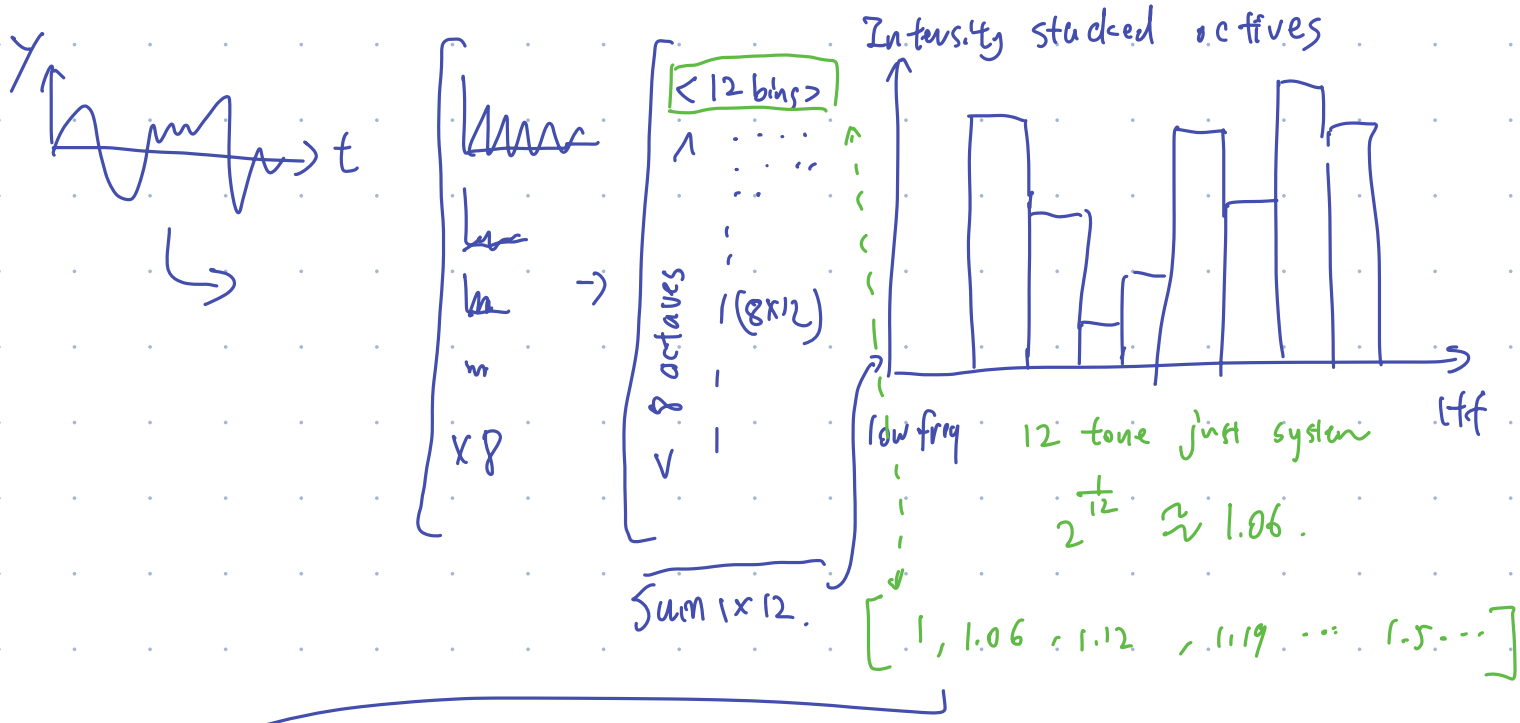
to be multiplied by $\sin(wt) + \cos(wt)$

then regardless of phase, result in same height bin.

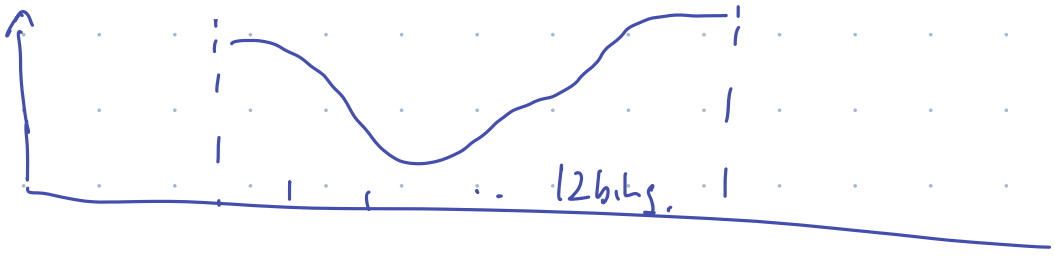
Repeat for each to extract 2x time freq domain info

Note: $\frac{1}{2}$ freq is NOT 2x time ???

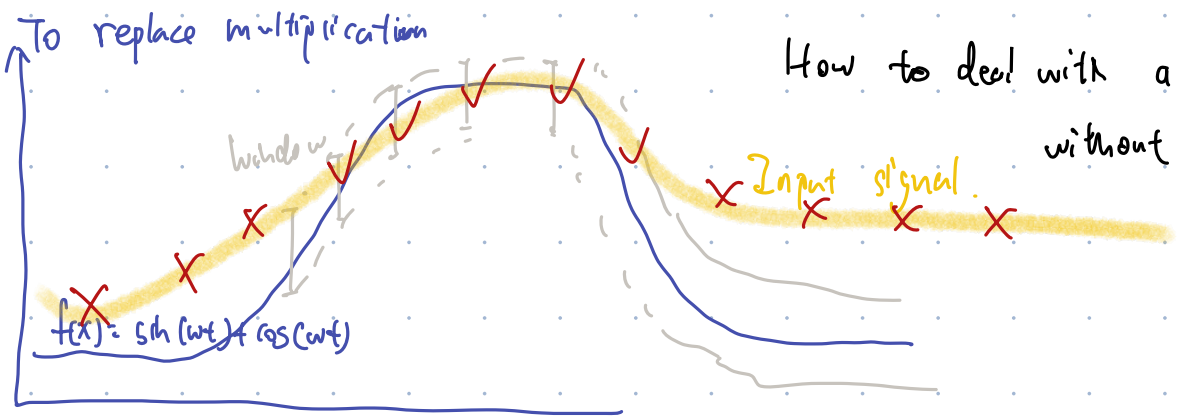
Get bins:



Fit a curve to hopefully recover intermediet freqs.



Part 3: Computation time optimization



1 2 3 4

5: add all valid samples ?

for Windowing

IIR: keep multiply "Last" value by 0.999 or so.

Added benifit:

log decrease is how we perceive sound.