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Batch: K5

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clear all;

clc;

n= 0:0.25:12;

x\_n = 2\*cos((2\*pi\*n)/4);

subplot(2,3,1);

stem(x\_n);

title('sample')

xlabel('n')

ylabel('x\_n')

L = 2;

ux\_n = upsample(x\_n,L);

subplot(2,3,2);

stem(ux\_n);

title('upsample')

xlabel('n')

ylabel('ux\_n')

N = 2;

dox\_n = downsample(x\_n,N);

subplot(2,3,3);

stem(dox\_n);

title('downsample')

xlabel('n')

ylabel('dox\_n')

ix\_n = interp(x\_n,L);

subplot(2,3,4);

stem(ix\_n);

title('interpolate')

xlabel('n')

ylabel('ix\_n')

dx\_n = decimate(x\_n,L);

subplot(2,3,5);

stem(dx\_n);

title('decimate')

xlabel('n')

ylabel('dx\_n')

ibyd\_xn = decimate(ix\_n, L); %passing interpolated signal to decimator

subplot(2,3,6);

stem(ibyd\_xn);

title('I/D operation')

xlabel('n')

ylabel('ibyd\_xn')