%Overlap Add

clc;

close all;

clear all;

x = input('Enter the input sequence: ');

h = input('Enter the filter response sequence: ');

L = input('Enter no. of data points: ');

M = length(h);

lx = length(x);

r = rem(lx,L);

x1 = [x zeros(1,(L-r))];

nr = (length(x1)/L);

h1 = [h zeros(1,(L-1))];

for k = 1 : nr

m1(k,:) = x1(((k-1)\*L+1):k\*L);

m2(k,:) = [m1(k,:) zeros(1,M-1)];

m3(k,:) = ifft(fft(m2(k,:)).\*fft(h1));

m4(k,:) = [zeros(1,(k-1)\*L) m3(k,:) zeros(1,(nr-k)\*L)];

end

disp('Blocks of input sequence :');

m1

disp('Blocks of input sequence for overlap-add method :');

m2

disp('Convolved intermediate blocks :');

m3

disp('Shifted covolved blocks for overlap-addition :');

m4

disp('Linear Convolution of the input sequences :')

y = sum(m4)