**EXPERIMENT 5**

By,

**Raja Aadhithan**

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**Write a MATLAB script to perform the convolution of sequences using:  
1. Overlap-Add Method  
2. Overlap-Save Method**

**Code:**

clc;

clear;

close all;

disp('Enter the method through which you want to do linear convolution-');

c = input('(Overlap-Add Method = 1; Overlap-Save Method=2): ');

x1 = input('Enter the input sequence: ');

x2 = input('Enter the impulse sequence: ');

n1 = length(x1);

n2 = length(x2);

b = n2-1;

Ls = n1+n2-1;

L = floor(n1/n2);

N = L+n2-1;

if c == 1

x1 = [x1 zeros(1,N)];

sum = 0;

for k=0:N-1

xk=x1(k\*L+1:k\*L+L);

xk=[xk zeros(1,L-1)];

yk=cconv(xk,x2,N);

yk=[yk zeros(1,n1-1)];

yk=circshift(yk,L\*k);

sum=sum+yk;

end

y=sum(1:Ls);

y = round(y,0);

disp('Convolution using Overlap-Add Method-');

disp(y);

elseif c ==2

K = floor((n1+b-1)/L);

x1 = [zeros(1,b) x1 zeros(1,N-1)];

for i = 0:K

xi = x1(i\*L+1:i\*L+N);

y(i+1,:) = cconv(xi,x2,N);

end

y = round(y,0);

y = y(:,n2:N)';

y = y(:)';

disp('Convolution using Overlap-Save Method-');

disp(y);

end

**Output :**

