clc;

clear all;

x = input("Enter x = ");

y = input("Enter y = ");

[m] = length(x);

[n] = length(y);

X = [x, zeros(1,n)];

H = [y, zeros(1,m)];

Y = zeros(1, n+m-1);

for i = 1:n+m-1

for j = 1:i

if(i-j+1>0)

Y(i) = Y(i) + X(j)\*H(i-j+1);

else

end

end

end

subplot(2,1,1);

stem(Y, 'r')

xlabel("n---------->");

ylabel("Y(n)");

title("defined discrete time convolution");

disp(Y);

z = zeros(1, n+m-1);

z = conv(x, y);

disp(z);

subplot(2,1,2);

stem(z);

xlabel("n---------->");

ylabel("z(n)");

title("built in discrete time convolution");

%figure;

%c = ones(1,10)\*(1/10);

%d = filter(c, 1, Y);

%stem(d);

%xlabel("n---------->");

%ylabel("d(n)");

%title("filter");