```matlab
% Experiment No -7(b)
% Verification of Time Invariance of a Discrete System

clc
clear all;
close all;
% entering the two input sequences
x=input('enter the sequenc: x=');
h= input('enter the sample sequence: h=');
% ORIGINAL RESPONSE
y=conv(x,h);
disp('enter a positive number for delay');
d= input('enter the delay of the signal');
% delayed input
xd=[zeros(1,d),x];
nxd=0:length(xd)-1;
% delayed output
yd=conv(xd,h);
nyd=0:length(yd)-1;
disp('Original input Signal x(n) is');
disp(x);
disp('Delayed input  Signal xd(n) is');
disp(xd);
disp('Original output Signal y(n) is');
disp(y);
disp('Delayed output  Signal yd(n) is');
disp(yd);
xp=[x, zeros(1,d)];
subplot(2,1,1);
stem(nxd,xp);
grid;
xlabel('n');
ylabel('x(n)');
title('original input signal');
subplot(2,1,2);
```

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stem(nxd,xd);
grid;
xlabel('n');
ylabel('xd(n)');
title('Delayed input signal');
figure;
yp=[y, zeros(1,d)];
subplot(2,1,1);
stem(nyd,yp);
grid;
xlabel('n');
ylabel('y(n)');
title('original output signal');
subplot(2,1,2);
stem(nyd,yd);
grid;
xlabel('n');
ylabel('yd(n)');
title('Delayed output signal');
disp('the system is time invariant');
```

output:

enter the sequenc: x=[1 2 3 4]
enter the sample sequence: h=[1 2 2 1]
enter a positive number for delay
enter the delay of the signal 7
Original input Signal x(n) is
    1   2   3   4

Delayed input Signal xd(n) is
  Columns 1 through 8
    0   0   0   0   0   0   0   1
  Columns 9 through 11
    2   3   4

Original output Signal y(n) is

       1   4   9   15   16   11   4

Delayed output Signal yd(n) is

  Columns 1 through 8

     0   0   0   0   0   0   0   1

  Columns 9 through 14

     4   9   15   16   11   4

the system is time invariant