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**Republic of Iraq**

**Ministry of Higher Education**

**and Scientific Research**

**Al-Mustaqbal University College**

**Computer Engineering Techniques Department**

**(عملي)**

**Subject: Digital Signal Processing**

**Third stage**

**Experiment No. 4**

**By**

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**Experiment No.4**

**Name of Experiment**: LINEAR CONVOLUTION

**Aim:** Write a MATLAB program to compute linear convolution of two given sequences.

**Matlab code**

clc;  
clear all;  
close all;

x1 = input ('enter the first sequence ');

subplot (2,2,1);

stem (x1,'r');

ylabel ('amplitude');

title ('plot of the first sequence');

grid on;

x2 = input ('enter 2nd sequence ');

subplot (2,2,2);

stem (x2, 'r');

ylabel ('amplitude');

title ('plot of 2nd sequence');

grid on;

f = conv (x1,x2);

disp ('output of linear conv is');

disp (f);

subplot (2,2,3);

stem (f,'r');

xlabel ('time index n');

ylabel ('amplitude f');

title('linear conv of sequence');

grid on;

**Result**

**Output:**

**enter the first sequence [1 2 3 4]**

**enter 2nd sequence [2 -1 2 3]**

**output of linear conv is**

**2 3 6 12 8 17 12**

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