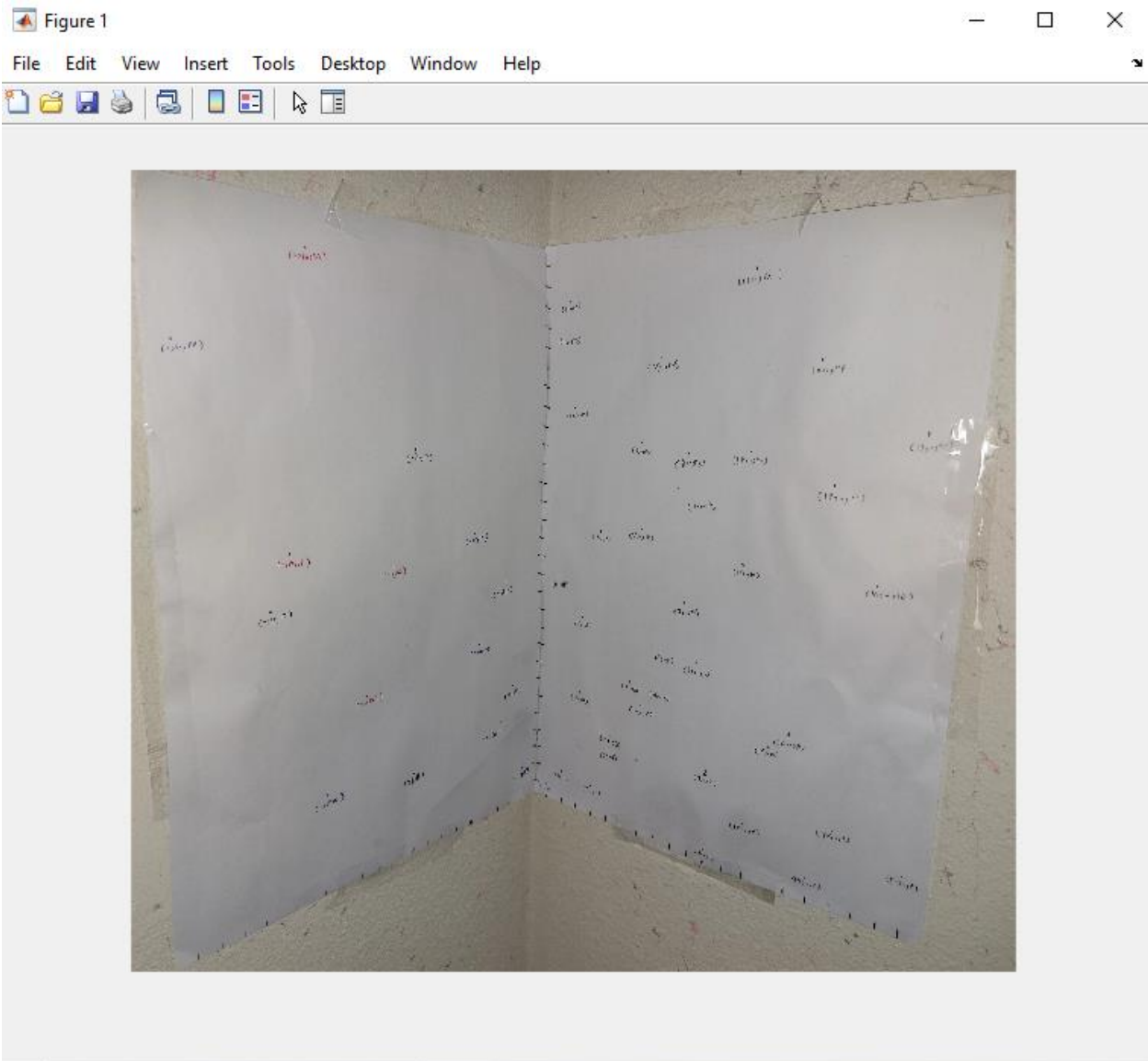


رضا احمدی ۴۰۲۲۳۱۰۰۸

تمرین اول درس بینایی ماشین

```
clear all
close all
clc

i=imread('D:\project.jpg');
imshow(i);
```



```

Q = [1 0 1 1 0 0 0 0 -1640 0 -1640 -1640
      0 0 0 0 1 0 1 1 -2123 0 -2123 -2123
      4 0 2 1 0 0 0 0 -7252 0 -3626 -1813
      0 0 0 0 2 0 2 1 -4748 0 -4748 -2374
      5 0 4 1 0 0 0 0 -9415 0 -7532 -1883
      0 0 0 0 5 0 4 1 -11470 0 -9176 -2294
      7 0 24 1 0 0 0 0 -14686 0 -50352 -2098
      0 0 0 0 7 0 24 1 -5180 0 -17760 -740
      9 0 20 1 0 0 0 0 -19845 0 -44100 -2205
      0 0 0 0 9 0 20 1 -10080 0 -22400 -1120
      16 0 19 1 0 0 0 0 -44448 0 -52782 -2778
      0 0 0 0 16 0 19 1 -19968 0 -23712 -1248
      0 1 2 1 0 0 0 0 0 -1543 -3086 -1543
      0 0 0 0 0 1 2 1 0 -2364 -4725 -2364
      0 2 7 1 0 0 0 0 0 -3016 -10556 -1508
      0 0 0 0 0 2 7 1 0 -4068 -14238 -2034
      0 5 10 1 0 0 0 0 0 -6895 -13790 -1379
      0 0 0 0 0 5 10 1 0 -9365 -18730 -1873
      0 17 14 1 0 0 0 0 0 -9384 -7728 -552
      0 0 0 0 0 17 14 1 0 -23682 -24444 -1764
      0 14 5 1 0 0 0 0 0 -10864 -3880 -776
      0 0 0 0 0 14 5 1 0 -34580 -12350 -2470
      0 20 24 1 0 0 0 0 0 -3120 -3744 -156
      0 0 0 0 0 20 24 1 0 -13320 -15984 -666];

```

```

% ...
end

```

Figure 1

[X,Y] [1379 1873]
[R,G,B] [1 1 1]

(0,0,0)

Calculator

Standard

0.001 x 10^3 =

V,VTA

[X,Y] [552 1746]
[R,G,B] [8 7 39]

(-7,14,14)

MATLAB R2023b

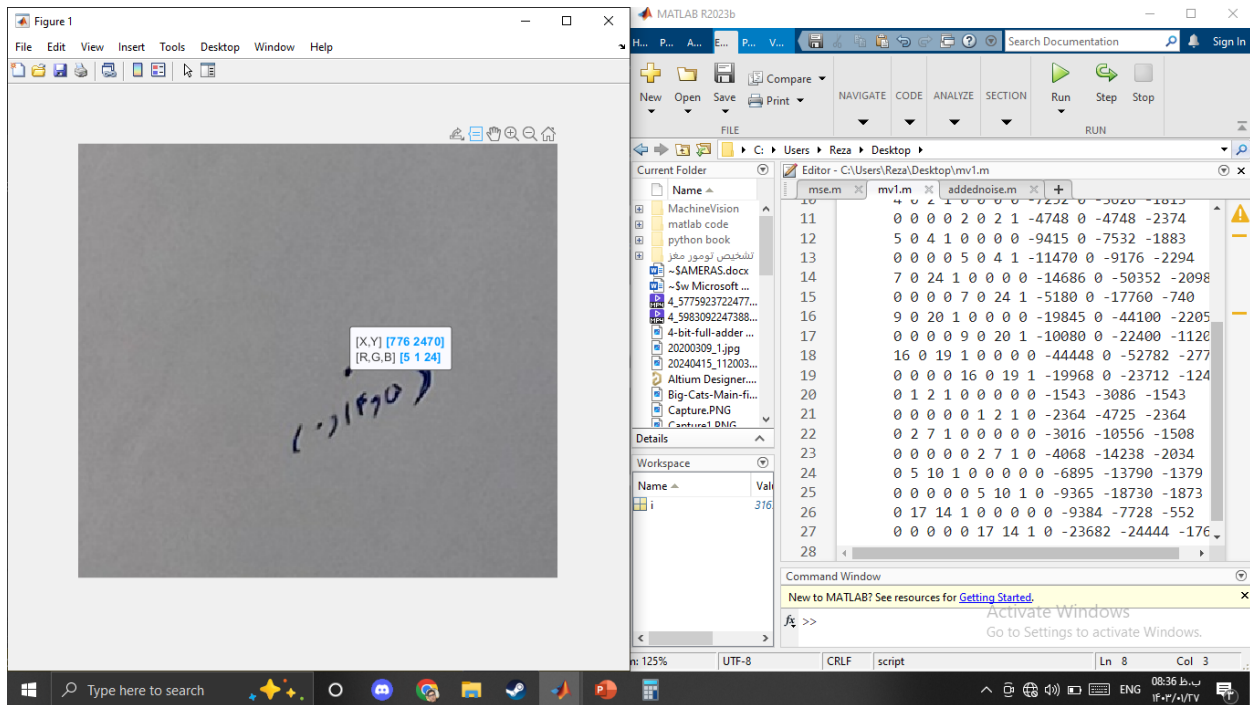
Editor - C:\Users\Reza\Desktop\mv1.m *

```
9 0 0 0 0 1 0 1 1 -2123 0 -2123 -2123
10 4 0 2 1 0 0 0 0 -7252 0 -3626 -1813
11 0 0 0 0 2 0 2 1 -4748 0 -4748 -2374
12 5 0 4 1 0 0 0 0 -9415 0 -7532 -1883
13 0 0 0 0 5 0 4 1 -11470 0 -9176 -2294
14 7 0 24 1 0 0 0 0 -14686 0 -50352 -2098
15 0 0 0 0 7 0 24 1 -5180 0 -17760 -740
16 9 0 20 1 0 0 0 0 -19845 0 -44100 -2205
17 0 0 0 0 9 0 20 1 -10080 0 -22400 -1120
18 16 0 19 1 0 0 0 0 -44448 0 -52782 -277
19 0 0 0 0 16 0 19 1 -19968 0 -23712 -124
20 0 1 2 1 0 0 0 0 0 -1543 -3086 -1543
21 0 0 0 0 0 1 2 1 0 -2364 -4725 -2364
22 0 2 7 1 0 0 0 0 0 -3016 -10556 -1508
23 0 0 0 0 0 2 7 1 0 -4068 -14238 -2034
24 0 0 0 0 0 5 10 1 0 0 -9365 -18730 -1873
25 0 17 14 1 0 0 0 0 0 -9384 -7728 -552
26 0 0 0 0 0 1
27 1
```

Command Window

New to MATLAB? See resources for [Getting Started](#).

Activate Windows
Go to Settings to activate Windows.



```
% taranahde matrix Q
TQ=Q';
%zarbe matrix Q va TQ
A=TQ*Q;
%be dast avardan meghdar vizhe va bordar vizhe
[U,R] = eig(A);
%be dast avardan kochak tarin
T=U(:, 1);
%be dast avardan matrix M
M = [T(1) T(2) T(3) T(4)
      T(5) T(6) T(7) T(8)
      T(9) T(10) T(11) T(12)];
```

%noghath ghermez baray test

```
R1 = M * [  
    1  
    0  
    13  
    1];  
R1 = [R1(1)/R1(3) R1(2)/R1(3)];
```

```
R2 = M* [5  
    0  
    5  
    1];  
R2 = [R2(1)/R2(3) R2(2)/R2(3)];
```

```
R3 = M * [4  
    0  
    16  
    1];  
R3 = [R3(1)/R3(3) R3(2)/R3(3)];
```

```
R4 =M * [10  
    0  
    18  
    1];  
R4 = [R4(1)/R4(3) R4(2)/R4(3)];
```

```
R5 =M * [14  
    0  
    7  
    1];  
R5 = [R5(1)/R5(3) R5(2)/R5(3)];
```

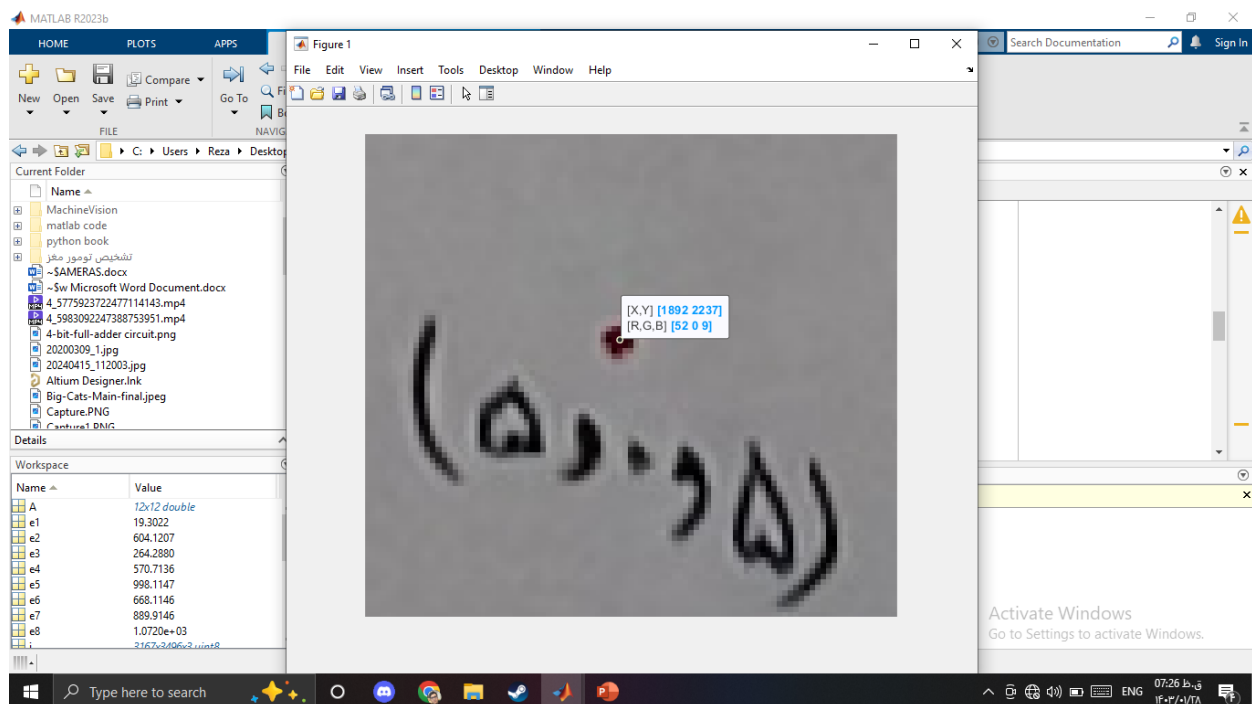
```
R6 =M * [0  
    11  
    15  
    1];  
R6 = [R6(1)/R6(3) R6(2)/R6(3)];
```

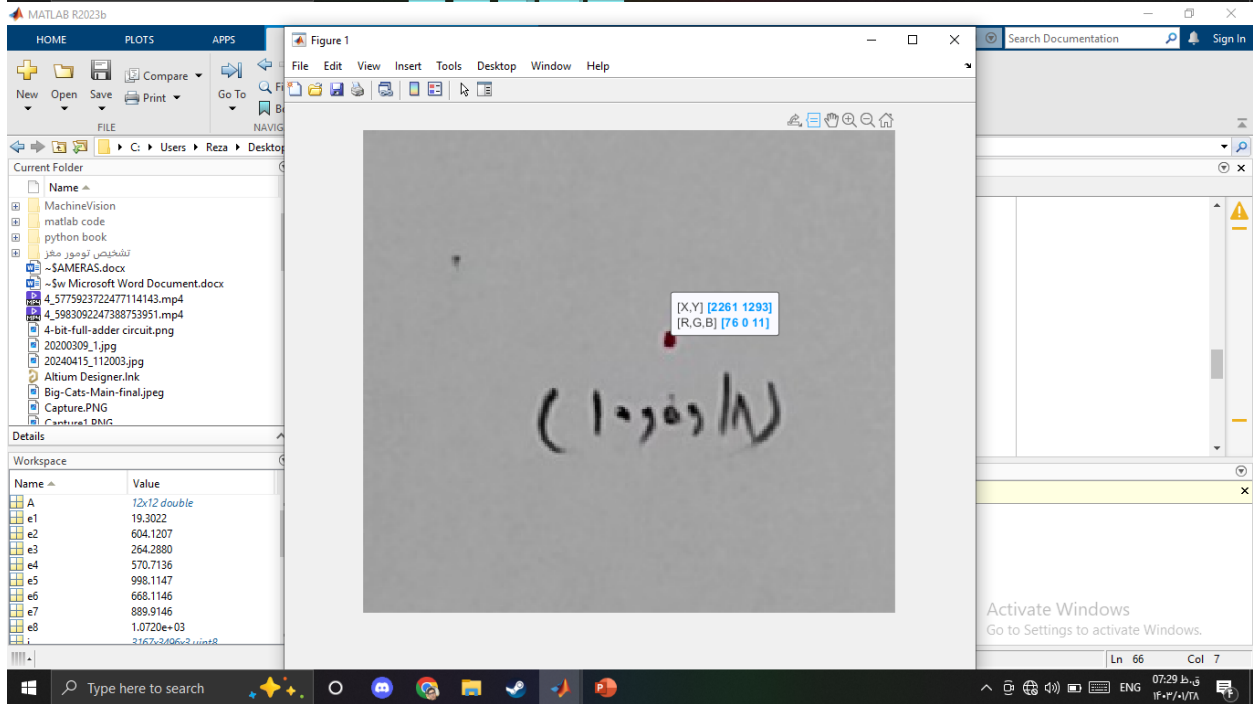
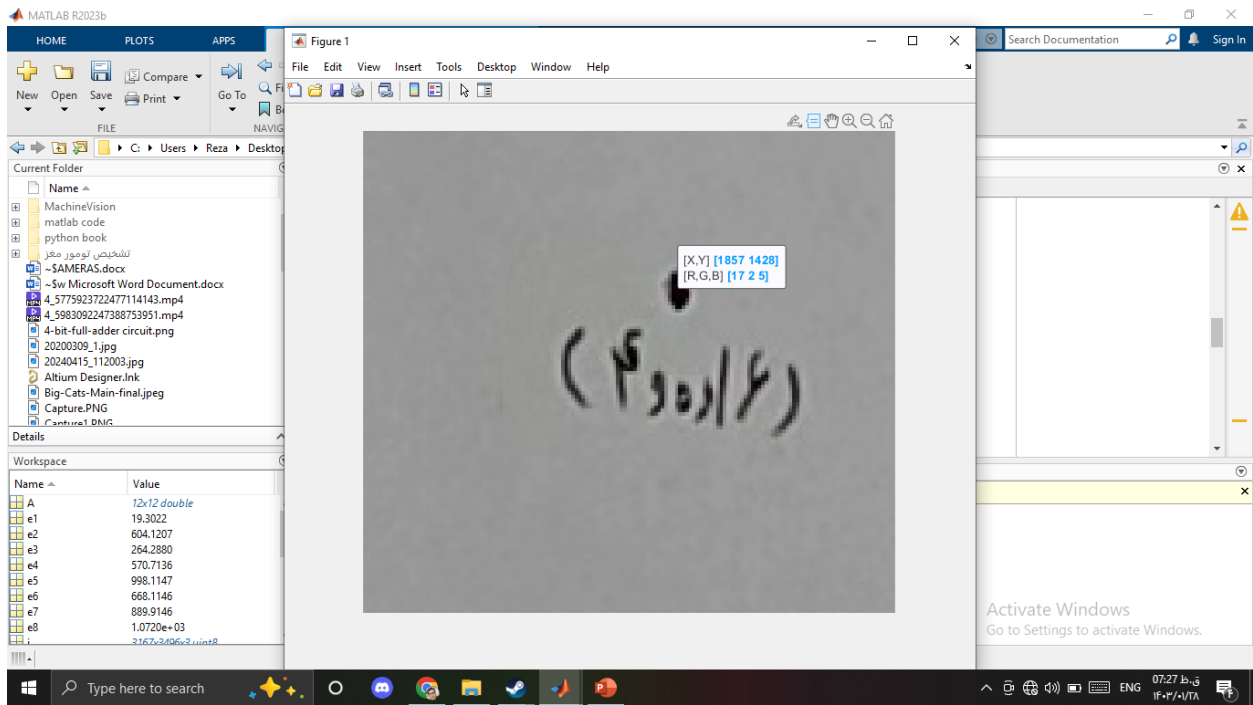
```

R7 =M * [0
          12
          9
          1];
R7 = [R7(1)/R7(3) R7(2)/R7(3)];

R8 =M * [0
          16
          16
          1];
R8 = [R8(1)/R8(3) R8(2)/R8(3)];

```





```

%bedast avardan error
e1 = sqrt ((R1(1)-1691).^2+(R1(2)-1607).^2);
e2 = sqrt ((R2(1)-1892).^2+(R2(2)-2237).^2);
e3 = sqrt ((R3(1)-1857).^2+(R3(2)-1428).^2);
e4 = sqrt ((R4(1)-2261).^2+(R4(2)-1293).^2);
e5 = sqrt ((R5(1)-2518).^2+(R5(2)-2280).^2);
e6 = sqrt ((R6(1)-1037).^2+(R6(2)-1568).^2);
e7 = sqrt ((R7(1)-934).^2+(R7(2)-2078).^2);
e8 = sqrt ((R8(1)-625).^2+(R8(2)-1518).^2);
|
mean_error = (e1+e2+e3+e4+e5+e6+e7+e8)/8

```

```

mean_error =

```

```

    49.9846

```