

Assignment4.m

```
1 %Given three points in a 2D plane find a quadratic curve that fits these points. Use Gauss method to find
  the solution. Extend the method to fit any arbitrary number of points.
2
3 clc
4
5 close all
6
7 clear all
8
9 X=input("Enter the values of 'X'");
10 Y=input("Enter the values of 'Y'");
11
12 n=length(X);
13 for i=1:n
14     A(i,1)=X(i,:).^2 ;
15     A(i,2)=X(i,:) ;
16     A(i,3) = 1;
17 end
18 A
19 B=Y
20
21 scatter(X,Y)
22 Aug = [A B];
23
24 [N,m] = size(Aug);
25
26 for i=1:N
27     Aug(i,:) = Aug(i,+)/Aug(i,i);
28     for j=1:N
29         if j~=i
30             Key = Aug(j,i);
31             Aug(j,:) = Aug(j,)-Key*Aug(i,);
32         end
33     end
34 end
35
36 r=(length(Aug)/2);
37 XW = Aug(:,r+2:end);
38
39 X=-5:0.2:5;
40
41 Y=XW(1,1)*X.^2+XW(2,1)*X+XW(3,1);
42
43
44 hold on;
45 plot(X,Y);
46 grid()
```

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