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```
%affine 2-tap
display('affine 2-tap')
[u,y] = systemid;
t = linspace(1,1,99)';

A = [ones(99,1) u(2:100) u(1:99)];
b = y(2:100);
x = A\b;

y_hat = A*x;
figure
bar(y_hat,'w');
title('Plot for  $\hat{y}$ ','interpreter','Latex')

figure
plot(y_hat)
hold on
plot(y(2:100))
title('Plot for  $\hat{y}$  and y','interpreter','Latex')

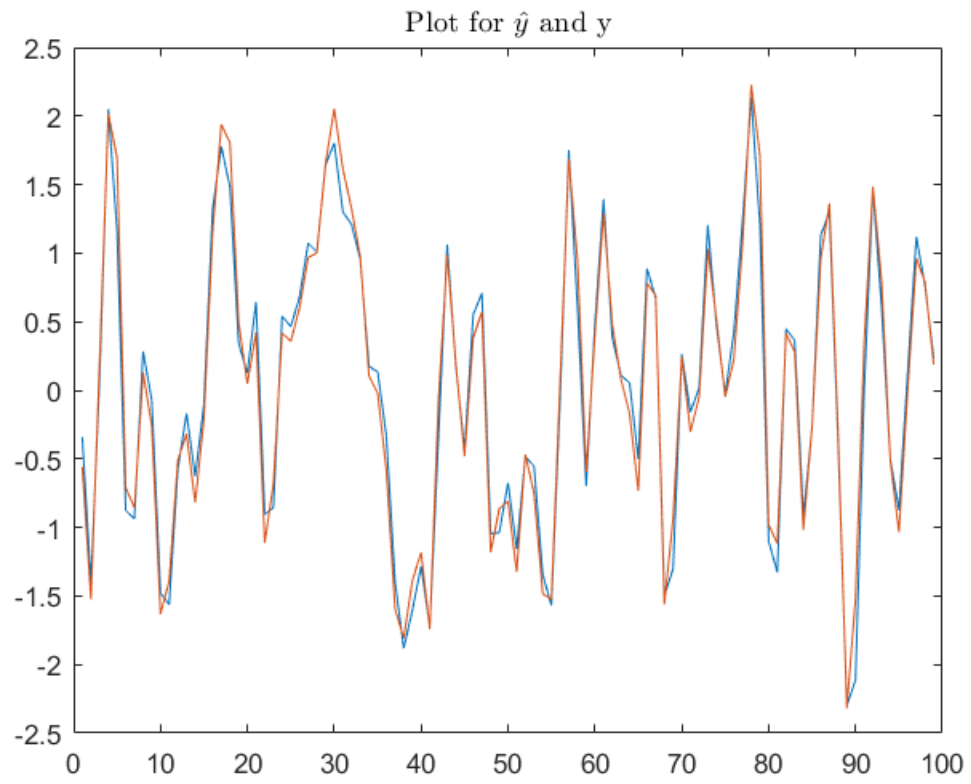
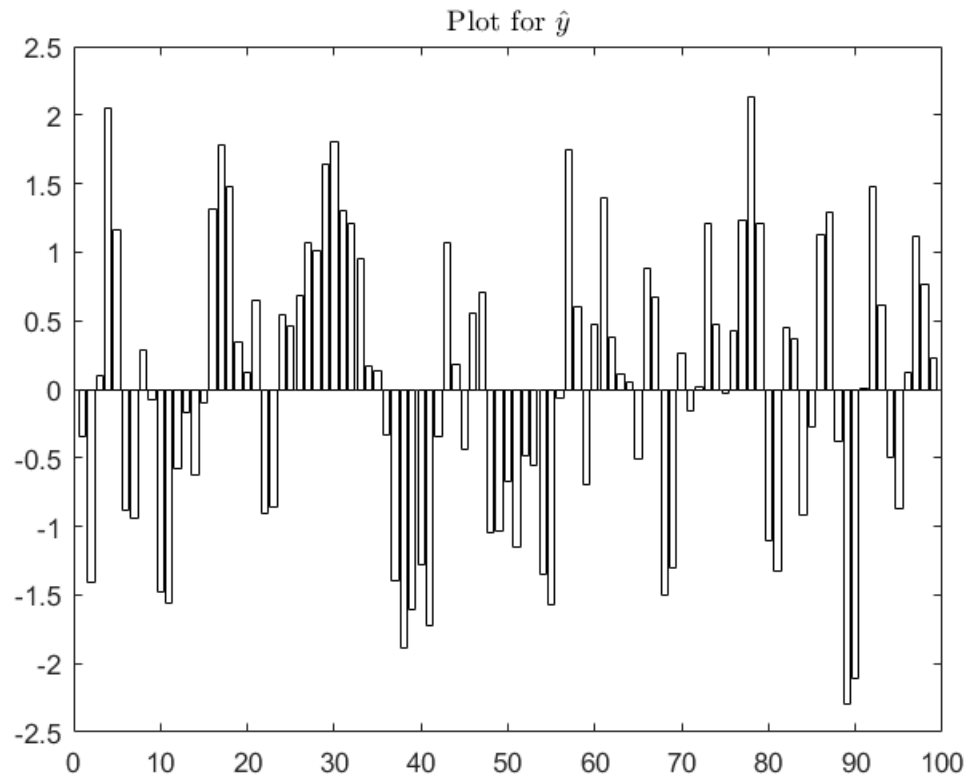
r = y_hat - b;
figure
bar(r,'w');
title('Graph for residual')
Rrms = sqrt(r'*r/99);

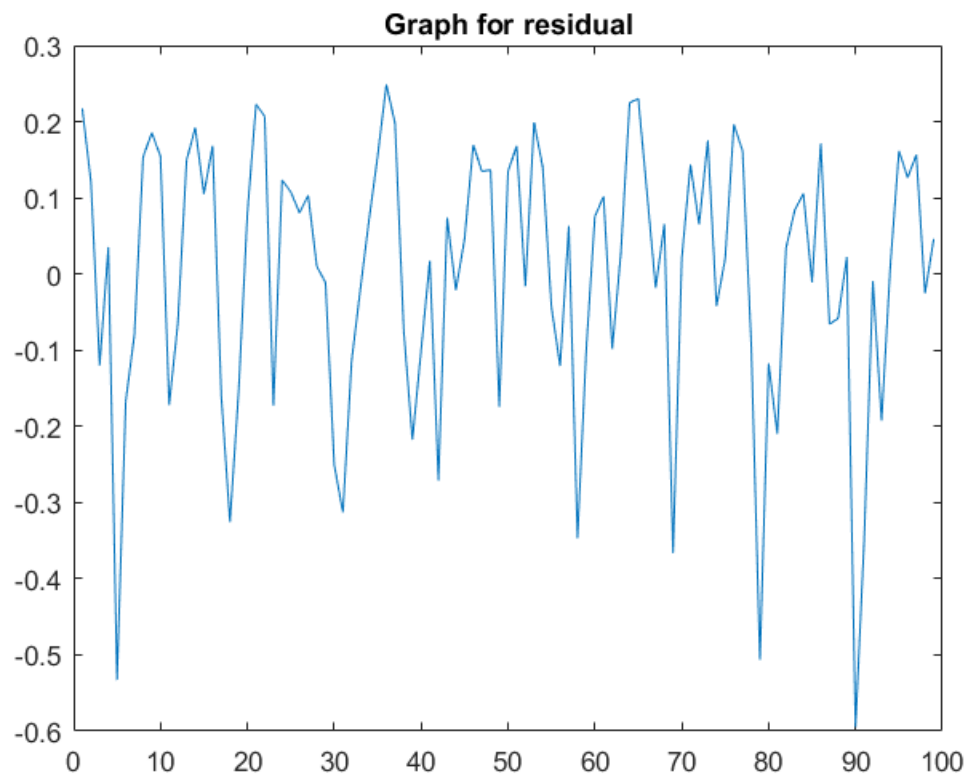
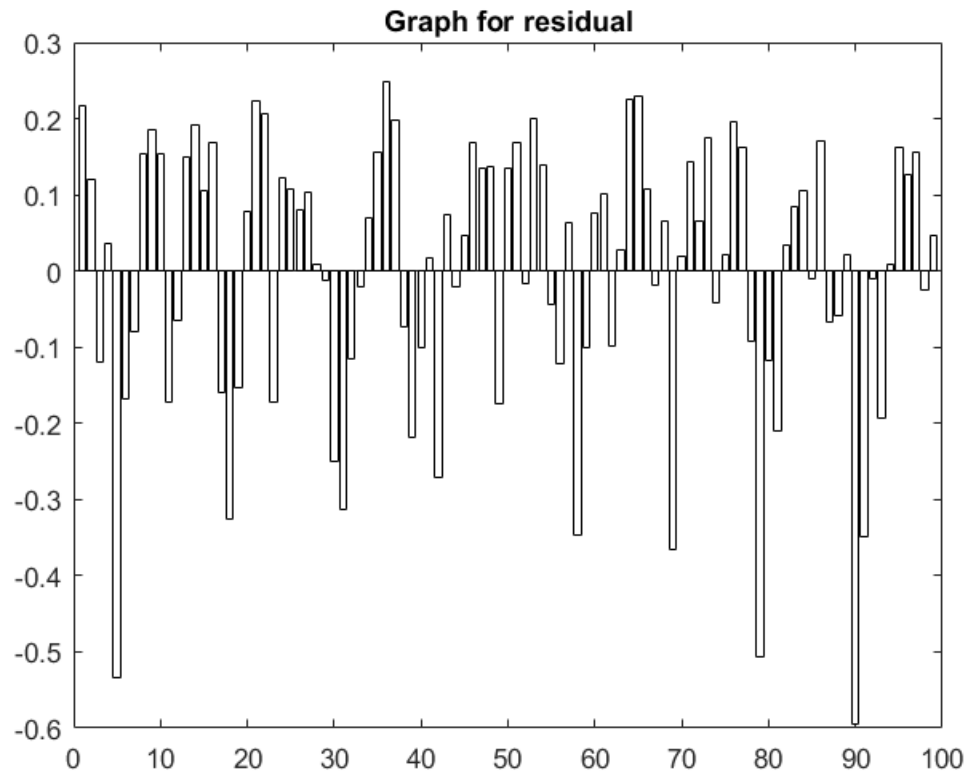
figure
plot(r)
title('Graph for residual')
Rrms = sqrt(r'*r/99)

affine 2-tap

Rrms =

    0.1770
```





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```

display('quadratic 2-tap')
A = [ones(99,1) u(2:100) u(2:100).^2 u(1:99) u(1:99).^2
      u(2:100).*u(1:99)];
b = y(2:100);
x = A\b;

y_hat = A*x;
figure
bar(y_hat, 'w');
title('Plot for  $\hat{y}$ ', 'interpreter', 'Latex')

figure
plot(y_hat, '-')
hold on
plot(y(2:100), '--')
title('Plot for  $\hat{y}$  and y', 'interpreter', 'Latex')

r = y_hat - b;
figure
bar(r, 'w');
title('Graph for residual')
Rrms = sqrt(r'*r/99)

figure
plot(r)
title('Graph for residual')
Rrms = sqrt(r'*r/99)

quadratic 2-tap

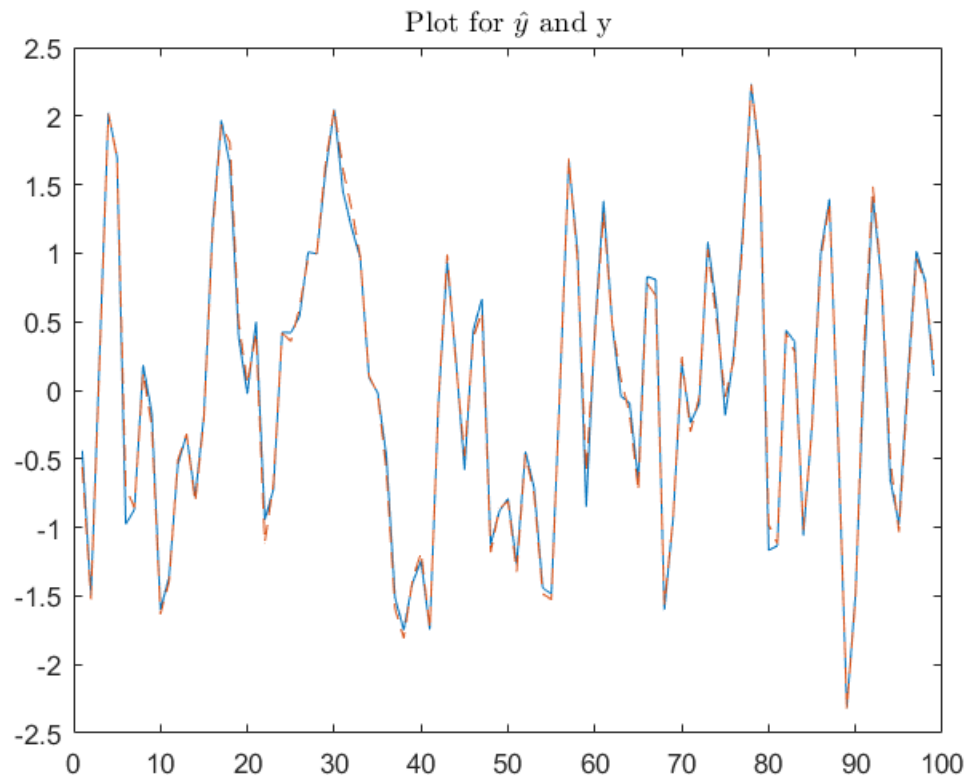
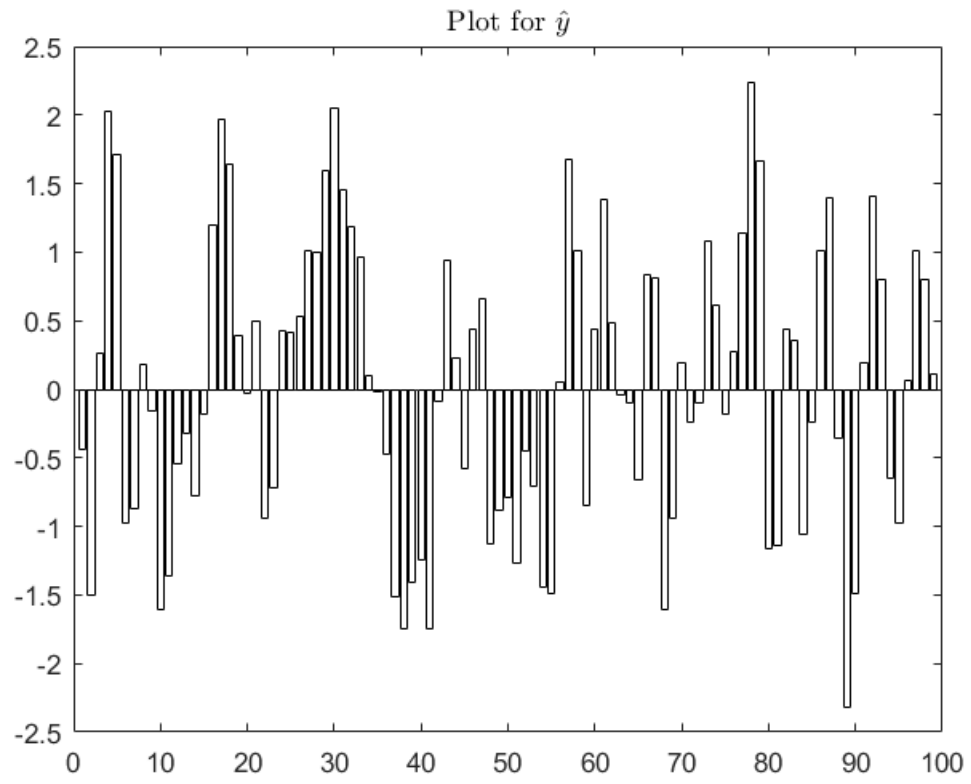
Rrms =

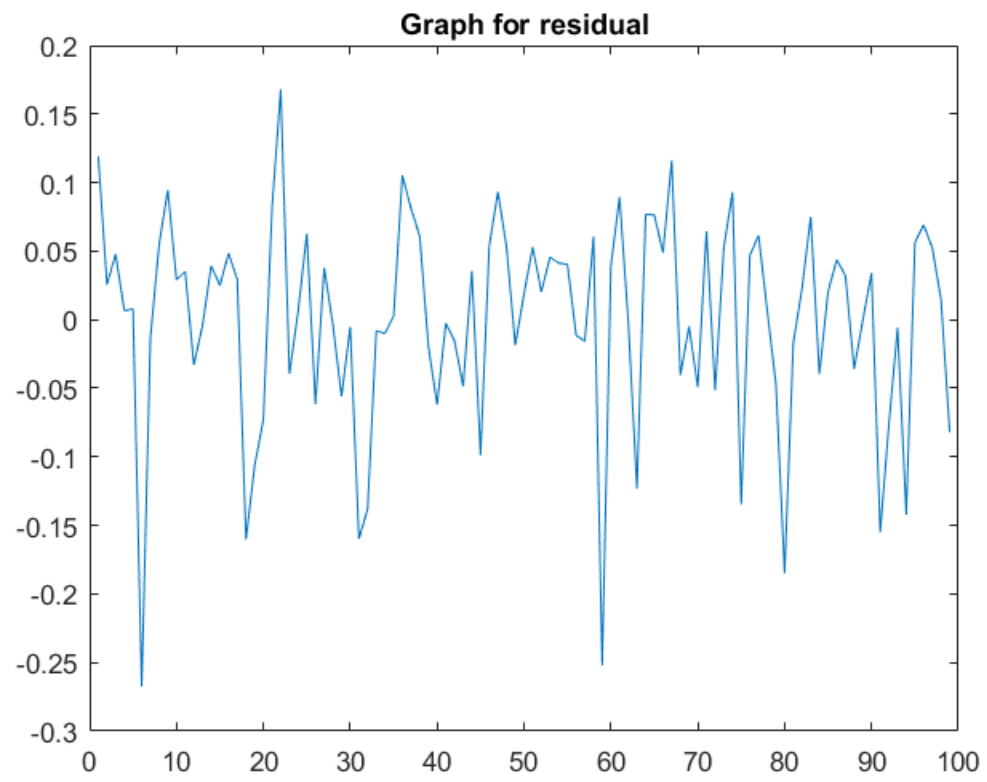
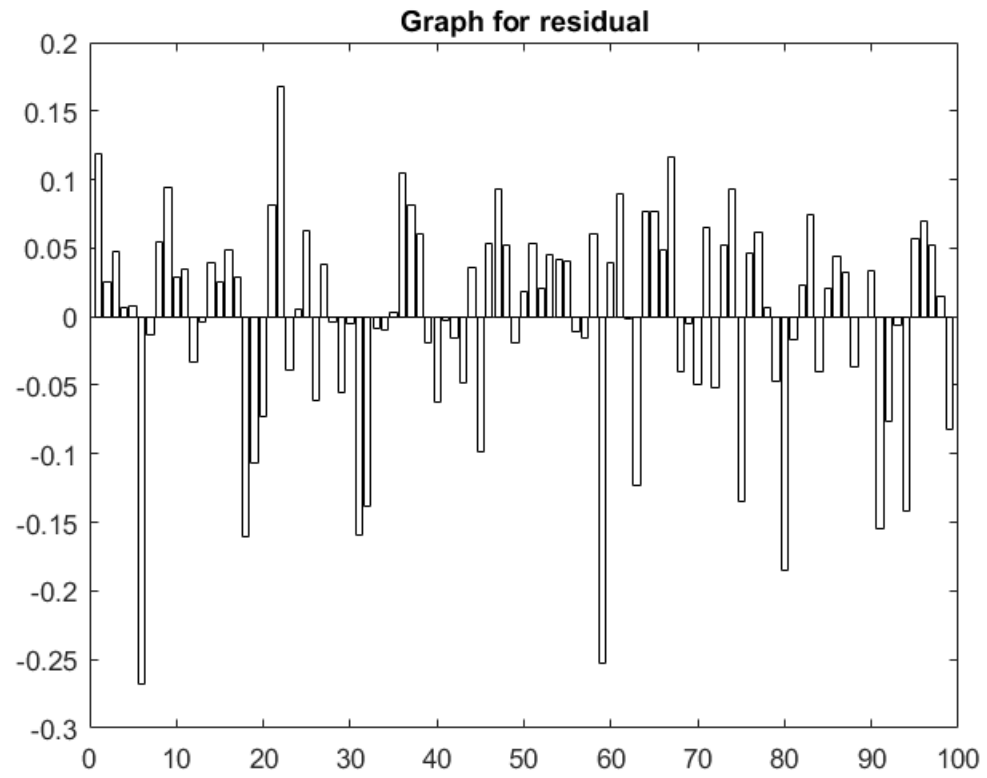
    0.0774

Rrms =

    0.0774

```





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*Published with MATLAB® R2015b*