Contents

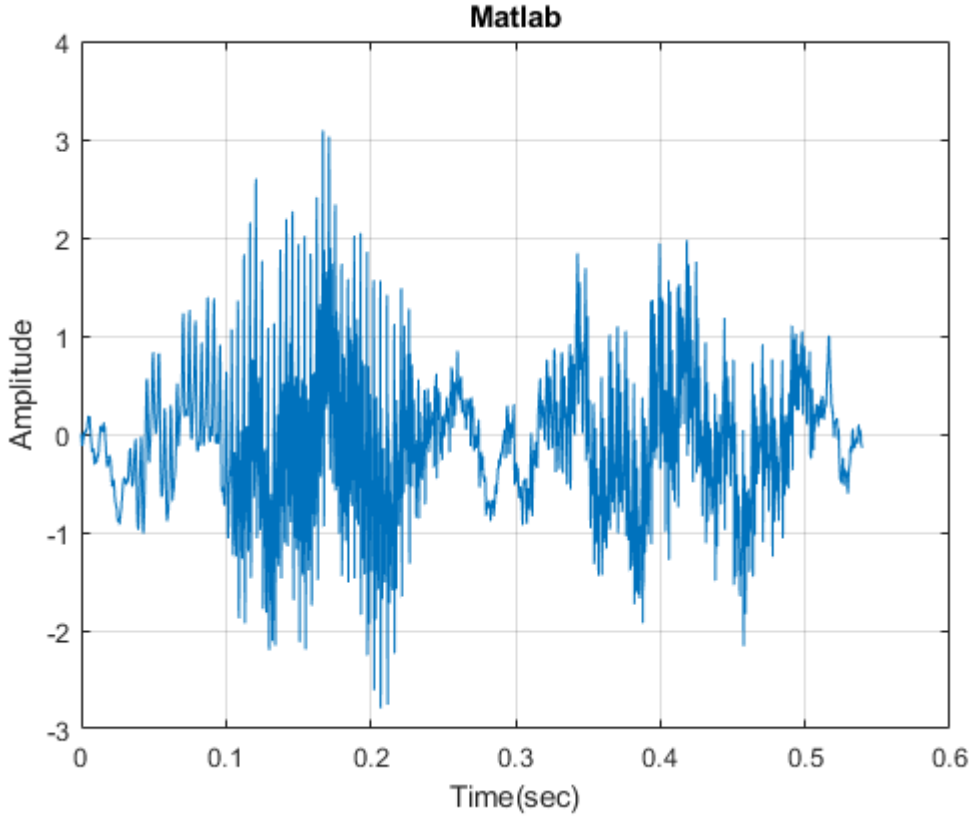
Create the Echo Signal

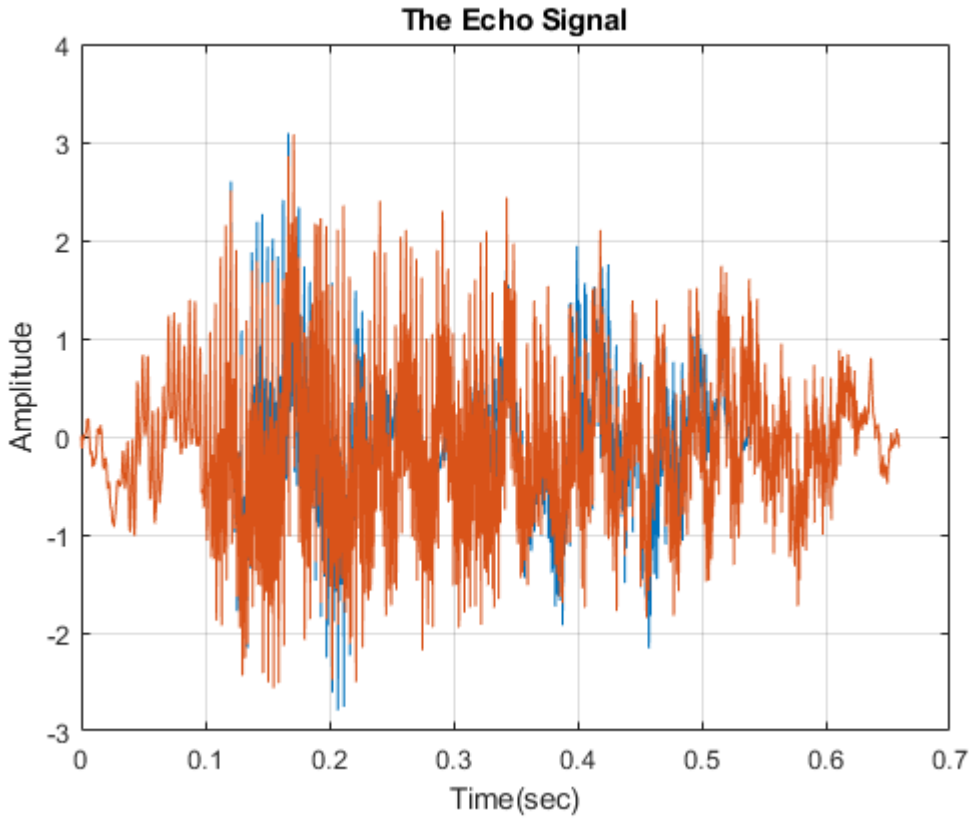
```
load mtlb

soundsc(mtlb)

who

L = length(mtlb)-1;

t = 0:1/Fs:L/Fs;



figure()

plot(t,mtlb);

grid;

ylabel('Amplitude');

xlabel('Time(sec)');

title('Matlab');









load mtlb;

L = length(mtlb)-1;

t = 0:1/Fs:L/Fs;
```

```
t0 = 0.12;

a = 0.8;

N = floor(t0*Fs);



h = [1, zeros(1,N-1), a];



y = conv(mtlb,h);

L1 = length(y)-1;

t1 = 0:1/Fs:L1/Fs;



figure()

plot(t,mtlb);

hold on

plot(t1,y);

grid;

xlabel('Time(sec)');

ylabel('Amplitude');

title('The Echo Signal');
```

```
Your variables are:


Fs     L1     a      alpha  b1     i      mtlb   t      t1     y
```

L N a1 b h id n t0 x z



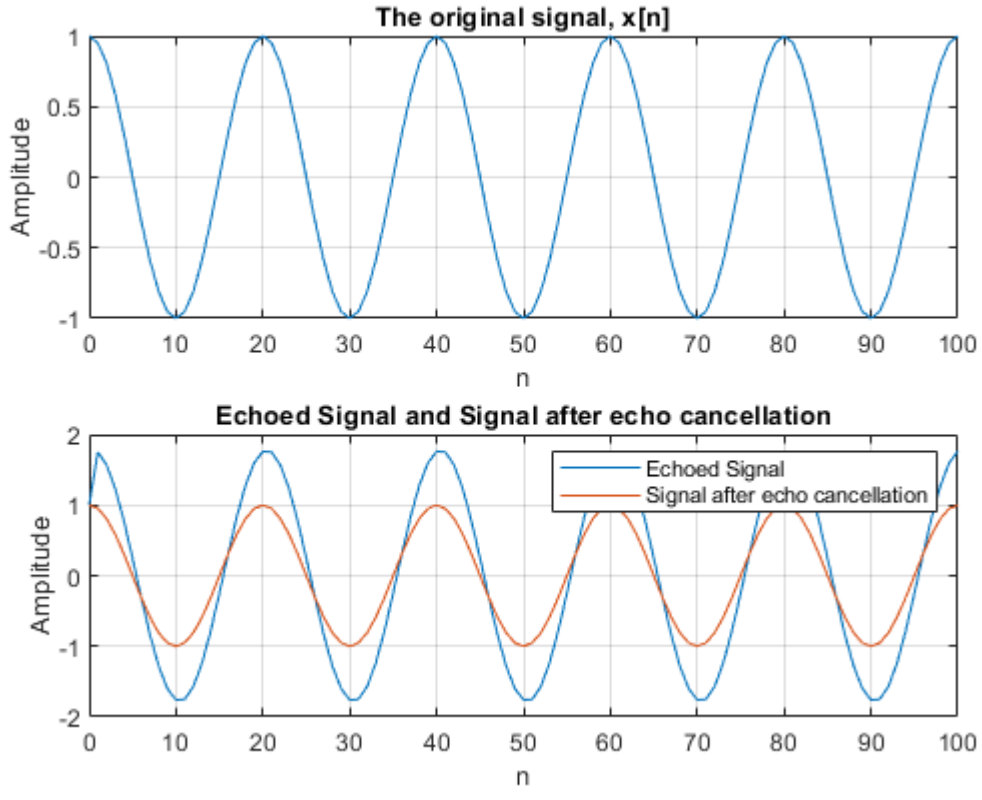


Remove the Echo

```
n = 0:100;
```

```
x = cos(0.1*pi*n);

alpha = a;

N = 0.12;




b1 = [1, zeros(1,N-1), alpha];

a1 = [1];



y = filter(b1,a1,x);



b = [1];

a = [1, zeros(1,N-1), alpha];



z = filter(b,a,y);



figure()

subplot(2,1,1);

plot(n,x);

grid;

xlabel('n');

ylabel('Amplitude');

title('The original signal, x[n]');
```

```
subplot(2,1,2)
plot(n,y);
hold on
plot(n,z);
xlabel('n');
ylabel('Amplitude');
title('Echoed Signal and Signal after echo cancellation');
legend('Echoed Signal', 'Signal after echo cancellation');
hold off
grid
```



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