Experiment 1

Submitted by,
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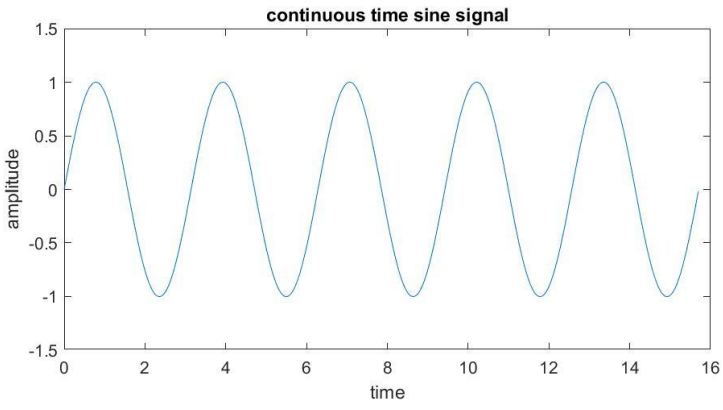
Aim: Generate Continuous Time Sine, Cos, Rising and Decay Exponential, Square, Triangular and Unit Step Function

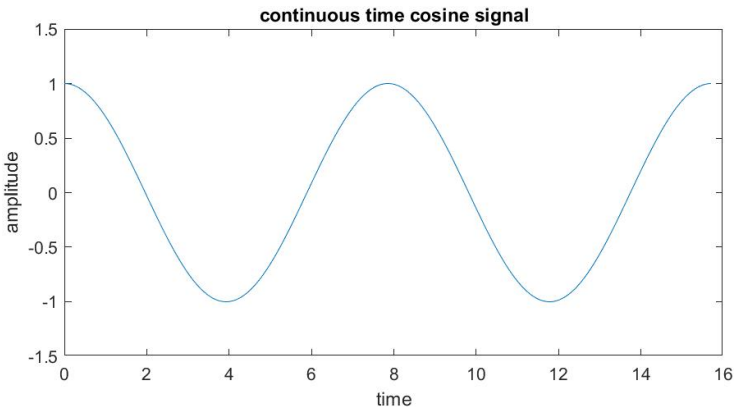
MATLAB Code:

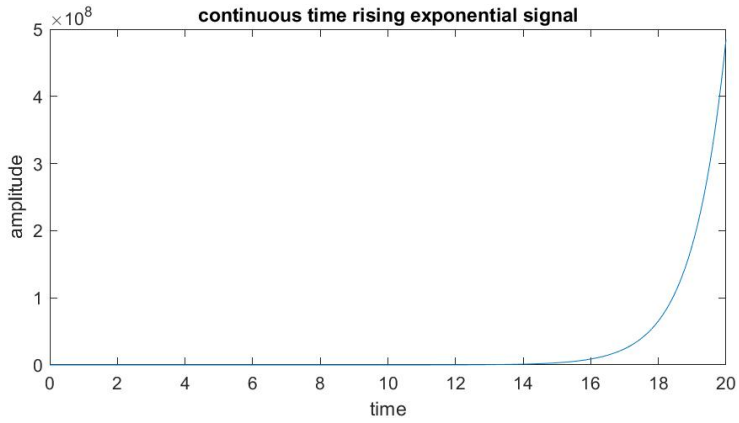
```
x=0:0.01:5*pi;
data= sin(2*x);
subplot(2,4, 1);

plot(x, data); xlabel('time'); ylabel('amplitude');
title('continuous time sine signal');
ylim([-1.5,1.5]);

x=0:0.01:5*pi;
data= cos(0.8*x);
subplot(2,4, 2);
plot(x, data);
ylim([-1.5,1.5]);
xlabel('time');
ylabel('amplitude');
title('continuous time cosine signal');

t=(0:0.01:20);
data=exp(t);
subplot(2,4, 3);
plot(t, data);
ylim([0,1*10^5]);
xlabel('time');
ylabel('amplitude');
title('continuous time rising exponential signal');

t=(0:0.01:10);
data=exp((-1)*t);
subplot(2,4, 4);
plot(t, data);
xlabel('time');
ylabel('amplitude');
title('continuous time damping exponential signal');

t=(0:0.01:15);
data=square(t,30);
subplot(2,4, 5);
plot(t,data);
```

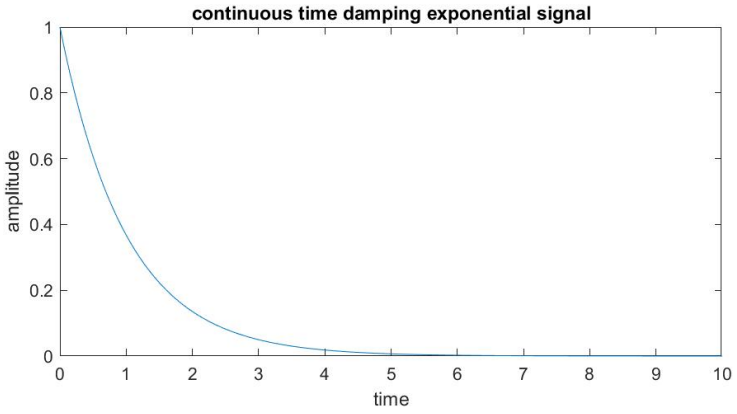
```
ylim([-1.5,1.5]);
xlabel('time');
ylabel('amplitude');
title('continuous time square wave signal');

T=10*(1/50);
fs=1000;
t=0:1/fs:T-1/fs;
x=sawtooth(2*pi*25*t, 1/2);
subplot(2,4, 6);
plot(t, x);
ylim([-1.5,1.5]);
grid on;
xlabel('time');
ylabel('amplitude');
title('continuous time triangular wave signal');

t=(-2:0.01:5);
unitstep=zeros(size(t));
unitstep(t>=0)=1;
subplot(2,4, 7);
plot(t, unitstep, 'b');
grid on;
ylim([-0.5,1.5]);
xlim([-2,4]);
xlabel('time');
ylabel('amplitude');
title("Unit Step Signal");
```

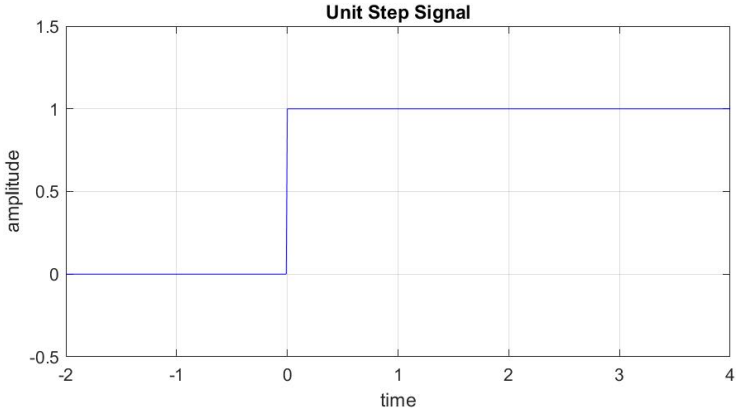
OUTPUT:

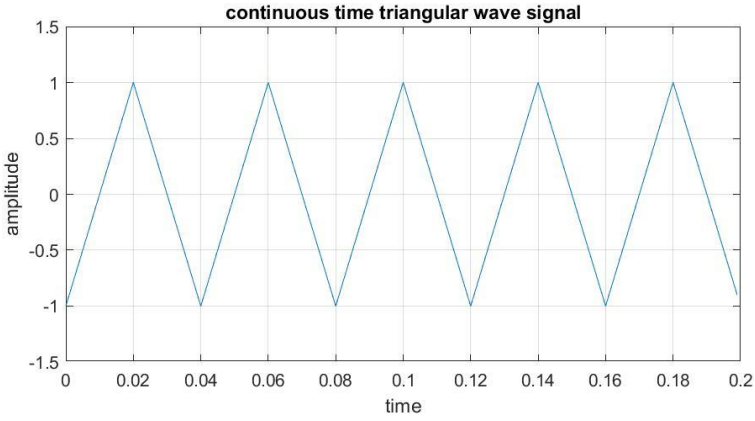


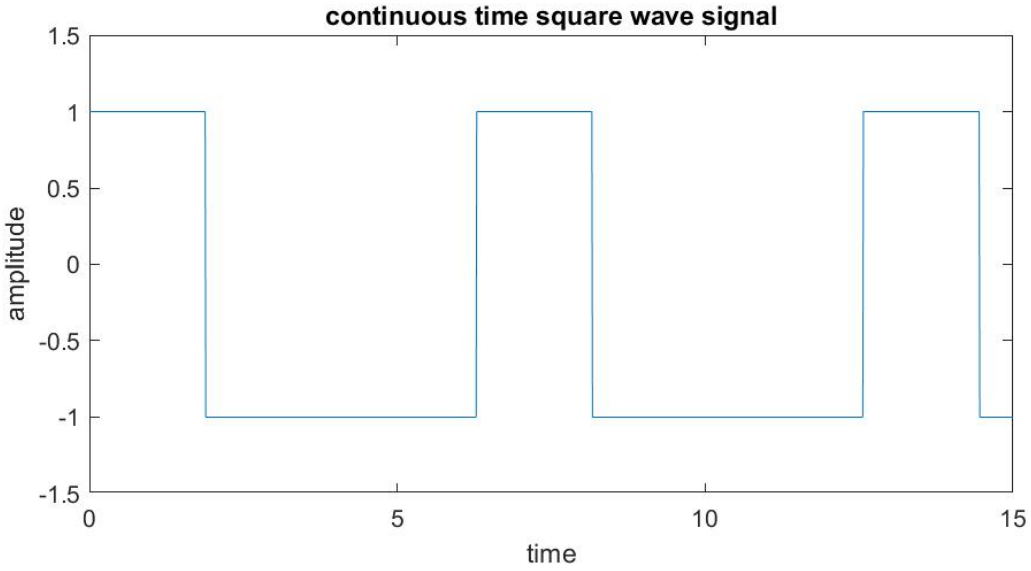



continuous time rising exponential signal
×10^8
amplitude
time


continuous time damping exponential signal
amplitude
time


Unit Step Signal
amplitude
time


continuous time triangular wave signal
amplitude
time


continuous time square wave signal
amplitude
time