
```
%Given values
k = 500; %m
m = 5; %N/m
h = .3; %m
L0 = .5; %m

%Timesteps
dt = 0.01;
t = 0:dt:10;
n = length(t); %Number of iterations

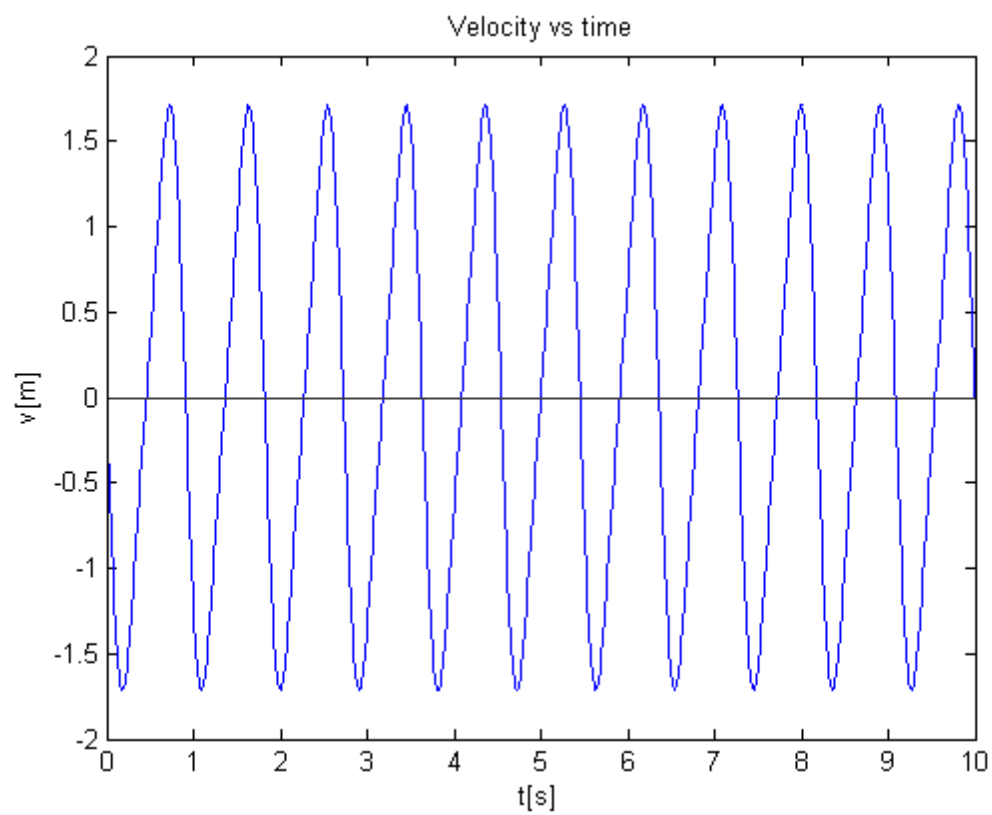
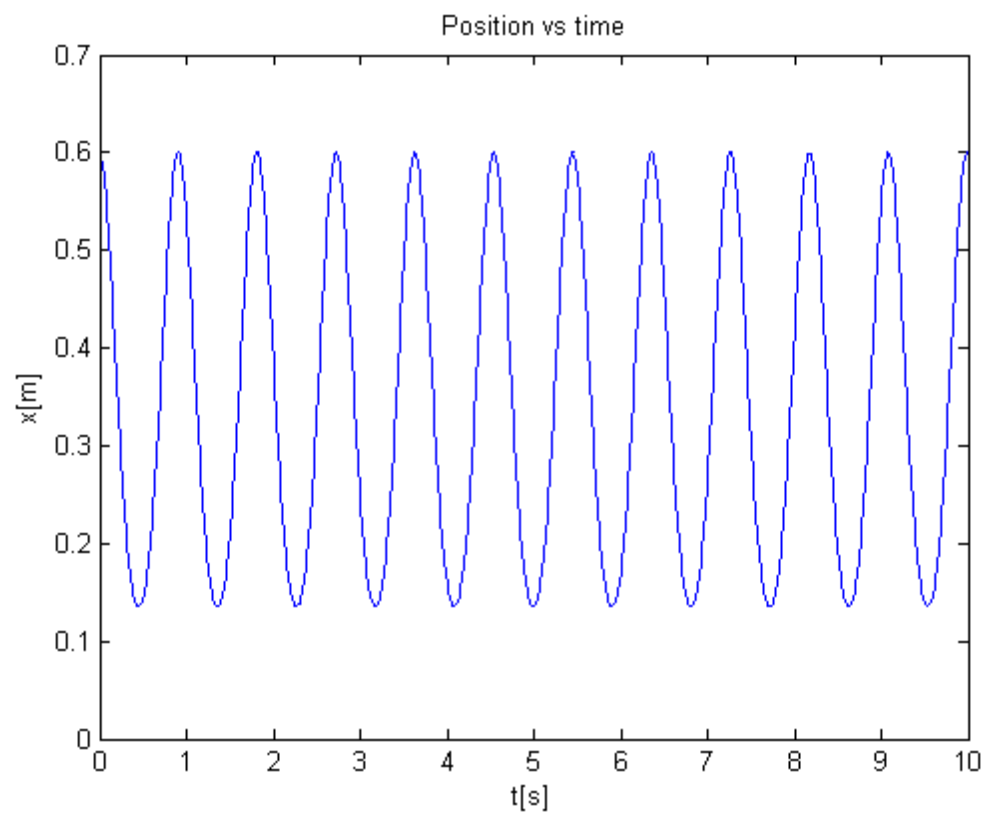
%Prepare arrays
Fx = zeros(n);
a = zeros(n); %Acceleration in horizontal direction
v = zeros(n); %Velocity in horizontal direction
x = zeros(n); %Position in horizontal direction

%Initial values
x(1) = 0.6; %Initial position
y(1) = 0.3; %Initial position

%Euler method
for i = 1:n
    Fx(i) = -k*x(i)*(1-L0/sqrt(x(i)^2+h^2)); %Spring force horizontal
    a(i+1) = Fx(i)/m; %Acceleration in horizontal direction
    v(i+1) = v(i) + dt*a(i+1); %Velocity in horizontal direction
    x(i+1) = x(i) + dt*v(i+1); %Position in horizontal direction
end

%Plot
figure(1)
plot(t,x)
xlabel('t[s]')
ylabel('x[m]')
title('Position vs time')

figure(2)
plot(t,v)
xlabel('t[s]')
ylabel('v[m]')
title('Velocity vs time')
```



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