

```

Ch_4_Lesson_6_Ex_3
clear      % clear all variables
% set subinterval length, number of iterations and start time
dt = 0.1;   % subinterval length = 1 second
n = 100;    % plot 10 seconds of the trajectory
t(1) = 0;

% initialize apple state, i.e. position and velocity
x(1) = 0;   % initial x position at 0,
vx(1) = 0;  % initial x velocity, 0

% do calculations for each subinterval
for i=2:n+1
    t(i) = t(i-1) + dt;      % time at start of ith subinterval
    % project position
        x(i) = x(i-1) + vx(i-1)*dt; % x at start of interval i
    % project velocity, acceleration is always -10
        vx(i)= vx(i-1) - 10*dt; % x velocity at start of interval i
end
plot(t,x)      % plot trajectory

```