```
clear

m1 = 1;  % initialize first mass-spring-damper
k1 = .5;
c1 = .1;

m2 = 1;   % initialize second mass-spring-damper
k2 = .5;
c2 = .05;

a = 5;  % initialize rest positions of system
b = 10;
d0 = b - a;



dt = 0.1;
n=300;

p1(1) = 3;  % initialize system state
v1(1) = 0;  % i.e. mass positions and velocities
p2(1) = 10;
v2(1) = 0;


t(1) = 0;

for i=2:n+1
 t(i) = t(i - 1) + dt;

 d = p2(i - 1) - p1(i - 1);  % distance between mass 1 and mass 2
 dv = v2(i - 1) - v1(i - 1);  % rate of change of d


 p1(i) = p1(i - 1) + v1(i - 1)*dt;  % project position and velocity for mass 1
 v1(i) = v1(i - 1) + (-k1*(p1(i - 1) - a) - c1*v1(i - 1) + k2*(d - d0) + c2*dv)*dt /
m1;

 p2(i) = p2(i - 1) + v2(i - 1)*dt;    % project position and velocity for mass 2
 v2(i) = v2(i - 1) + (- k2*(d - d0) - c2*dv)*dt / m2;

end

plot(t, p1)      % plot position of mass 1
hold on
plot(t, p2, 'r')   % plot position of mass 2
hold off
```