

Ch\_7\_Lesson\_9\_Ex\_1.m

```
clear

C = .2;
L = .2;
R = .2;
VR = 0;
VB = 10;
VL = VB;
dt = 0.001;
vc(1) = 0;
I(1) = 0;
Ip(1)=0;
t=0;
tt(1) = 0;
vs=zeros(1,10001);
vs(1001)=1000;

for i=2:10001

    vc(i) = vc(i-1) + I(i-1)/C*dt;
    I(i) = I(i-1) + (vs(i-1) - (vc(i-1) + I(i-1)*R)/L)*dt;
    t = t + dt;
    tt(i) = t;

    Ip(i) = (vs(i-1) - (vc(i-1) + I(i-1)*R)/L);

end

plot(tt,vc)
```