

Ch_7_Lesson_8_Ex_1.m

```
clear
```

```
C = .2; % initialize constants
```

```
L = .2;
```

```
R = 0;
```

```
VB = 10;
```

```
vc(1) = 0; % initialize state
```

```
I(1) = 0;
```

```
dt = 0.001;
```

```
t(1) = 0;
```

```
for i=2:10001
```

```
    vc(i) = vc(i-1) + I(i-1)/C*dt;
```

```
    I(i) = I(i-1) + (VB - (vc(i-1) - I(i-1)*R)/L)*dt;
```

```
    t(i) = t(i-1) + dt;
```

```
end
```

```
plot(t,vc)
```