

```
commandwindow  
clear  
clc
```

```
c=2.2;  
x0=0;  
xf=6;  
t0=0;  
tf=0.3;  
dx=0.3;  
dt=0.02;  
n=(xf-x0)/dx  
m=(tf-t0)/dt  
r=c*dt/(dx^2);
```

```
t=[t0:dt:tf]  
x=[x0:dx:xf]  
u=zeros(m+1,n+1)  
u(1:m+1,1)=0  
u(1,1:n+1)=3*(x.^2)  
u(1:m+1,n+1)=u(1,n+1)  
for j=1:m  
    i=2:n  
        u(j+1,i)=(r*u(j,i-1))+((1-(2*r))*u(j,i))+(r*u(j,i+1))  
end  
u  
mesh(x,t,u)  
xlabel('distance')  
ylabel('time')
```