Back-Propagation Algorithm

```
clc;
clear all;
close all;
x=[0.6 0.8 0];
v=[2 1 0;1 2 2;0 3 1];
v0=[0 0 -1];
w=[-1 1 2];
w0=-1;
t=0.9;
n=3;
alpha=0.3;
Zin=x*v+v0;
disp('Zin=');
disp(Zin);
Z=1./(1+exp(-Zin));
disp('Z=');
disp(Z);
p=Z*w';
Yin1=p+w0;
disp('Yin1=');
disp(Yin1);
y=1./(1+exp(-Yin1));
disp('y=');
disp(y);
del1=(t-y)*(y*(1-y));
disp('del1=');
disp(del1);
DelW0=(alpha)*del1;
disp('DelW0=');
disp(DelW0);
for i=1:n
DelW(1,i)=DelW0*Z(1,i);
end
disp('DelW=');
disp(DelW);
Wnew=w+DelW;
disp('Wnew=');
disp(Wnew);
delIN=del1*w;
disp('delIN=');
disp(delIN);

for i=1:3
    delj(i)=delIN(i)*((Z(i)*(1-(Z(i)))));
end
disp('delj=');
disp(delj);

for i=1:3
    for j=1:3
        delVij(i,j)=alpha*delj(i)*x(j);
    end
end
disp('delVij=');
```

```
delVij=delVij';
disp(delVij);

for i=1:3
    delV0i(i)=alpha*delj(i);
end

Vnew=delVij+v;
disp('Vnew=');
disp(Vnew);
V0new=v0+delV0i;
disp('V0new=');
disp(V0new);
Wnew=w+DelW;
W0new=DelW0+w0;
disp('Wnew=');
disp(Wnew);
disp('W0new');
disp(W0new);
```

OUTPUT:

Zin= 2.0000 2.2000 0.6000

Z= 0.8808 0.9002 0.6457

Yin1= 0.3108

y= 0.5771

del1= 0.0788

DelW0= 0.0236

DelW= 0.0208 0.0213 0.0153

Wnew= -0.9792 1.0213 2.0153

delIN= -0.0788 0.0788 0.1576

delj= -0.0083 0.0071 0.0361

delVij=

-0.0015 0.0013 0.0065

-0.0020 0.0017 0.0087

0 0 0

Vnew=

1.9985 1.0013 0.0065

0.9980 2.0017 2.0087

0 3.0000 1.0000

V0new=

-0.0025 0.0021 -0.9892

Wnew=

-0.9792 1.0213 2.0153

W0new

-0.9764