```
for u=1:1000

%randomly generate 60 emission enterprises, among which the first 50 are normal and the last 10 are malicious
%randomly generate 60 fluctuating reputation values among which the first 50 are reputation values of normal emission enterprises and the last 10 are reputation values of malicious emission enterprises
%The first 50 are reputation values of normal emission enterprises, and range is from 0.02-0.1
FRV_normal=rand(1,50)/12.5+0.02;

%The last 10 are reputation values of malicious emission enterprises, and range is from 0.01-0.5
FRV_malicious=rand(1,10)/25+0.01;

%All fluctuating reputation values of 60 emission enterprises
FRV=[FRV_normal FRV_malicious];

%Caculate the voting power of each emission enterprises
for i=1:60
    voting_power(1,i)=FRV(1,i)./(sum(sum(FRV(1,1:60))));
end

%The number of interactions between all emission enterprises and malicious miner
for j=1:14
    for i=1:60
        if i<=50
            inter_num(j,i)=round(rand()*10+20);
        else
            inter_num(j,i)=round(rand()*10+30);
        end
    end
end

%The range of effective rate of interactions is from [0.9-1.0]
certainty=rand(1,60)*0.1+0.9;

%The range of uneffective rate of interactions is from [0.0-0.1]
uncertainty=1-certainty;



%The malicious miner starts to propagate wrong information in the network
```

```
%Caculate the initial reputation value of malicious miner

%Caculate the number of different kinds of interactions between emission enterprises and
malicious miner
for i=1:60
    inter_num_pos_rece_t0(1,i)=sum(sum(inter_num(3:5,i)));
    inter_num_pos_past_t0(1,i)=sum(sum(inter_num(1:2,i)));
    inter_num_neg_rece_t0(1,i)=0;
    inter_num_neg_past_t0(1,i)=0;
end

%Caculate the weighted number of interactions
inter_num_pos_t0=0.24.*inter_num_pos_rece_t0+0.16.*inter_num_pos_past_t0;
inter_num_neg_t0=0.36.*inter_num_neg_rece_t0+0.24.*inter_num_neg_past_t0;
inter_num_t0=inter_num_pos_t0+inter_num_neg_t0;

%Caculate local opinions of emission enterprises to malicious miner
beli_local_t0=certainty(1,1:60).*(inter_num_pos_t0./inter_num_t0);
disb_local_t0=0.*ones(1,60).*(inter_num_neg_t0./inter_num_t0);
unce_local_t0=uncertainty(1,1:60);

%Caculate the frequency of interactions
for i=1:60
    inter_freq_t0(1,i)=inter_num_t0(1,i)./(sum(sum(inter_num_t0)));
end

%Caculate recommended opinions for each emission enterprises
for i=1:60
    beli_rec_t0_eDPOS(1,i)=(sum(sum(inter_freq_t0.*beli_local_t0))-
inter_freq_t0(1,i)*beli_local_t0(1,i))/(sum(sum(inter_freq_t0))-inter_freq_t0(1,i));
    disb_rec_t0_eDPOS(1,i)=(sum(sum(inter_freq_t0.*disb_local_t0))-
inter_freq_t0(1,i)*disb_local_t0(1,i))/(sum(sum(inter_freq_t0))-inter_freq_t0(1,i));
    unce_rec_t0_eDPOS(1,i)=(sum(sum(inter_freq_t0.*unce_local_t0))-
inter_freq_t0(1,i)*unce_local_t0(1,i))/(sum(sum(inter_freq_t0))-inter_freq_t0(1,i));

    beli_rec_t0_DPOR(1,i)=(sum(sum(voting_power.*beli_local_t0))-
voting_power(1,i)*beli_local_t0(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    disb_rec_t0_DPOR(1,i)=(sum(sum(voting_power.*disb_local_t0))-
voting_power(1,i)*disb_local_t0(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    unce_rec_t0_DPOR(1,i)=(sum(sum(voting_power.*unce_local_t0))-
voting_power(1,i)*unce_local_t0(1,i))/(sum(sum(voting_power))-voting_power(1,i));
end

%Caculate final opinions of emission enterprises to malicious miner
```

```
for i=1:60
    beli_final_t0_eDPOS(1,i)=(beli_local_t0(1,i)*unce_rec_t0_eDPOS(1,i)+beli_rec_t0_eDPOS(1,i)*unce_local_t0(1,i))/(unce_local_t0(1,i)+unce_rec_t0_eDPOS(1,i)+unce_rec_t0_eDPOS(1,i)*unce_local_t0(1,i));

disb_final_t0_eDPOS(1,i)=(disb_local_t0(1,i)*unce_rec_t0_eDPOS(1,i)+disb_rec_t0_eDPOS(1,i)*unce_local_t0(1,i))/(unce_local_t0(1,i)+unce_rec_t0_eDPOS(1,i)+unce_rec_t0_eDPOS(1,i)*unce_local_t0(1,i));

unce_final_t0_eDPOS(1,i)=(unce_rec_t0_eDPOS(1,i)*unce_local_t0(1,i))/(unce_local_t0(1,i)+unce_rec_t0_eDPOS(1,i)+unce_rec_t0_eDPOS(1,i)*unce_local_t0(1,i));


beli_final_t0_DPOR(1,i)=(beli_local_t0(1,i)*unce_rec_t0_DPOR(1,i)+beli_rec_t0_DPOR(1,i)*unce_local_t0(1,i))/(unce_local_t0(1,i)+unce_rec_t0_DPOR(1,i)+unce_rec_t0_DPOR(1,i)*unce_local_t0(1,i));

disb_final_t0_DPOR(1,i)=(disb_local_t0(1,i)*unce_rec_t0_DPOR(1,i)+disb_rec_t0_DPOR(1,i)*unce_local_t0(1,i))/(unce_local_t0(1,i)+unce_rec_t0_DPOR(1,i)+unce_rec_t0_DPOR(1,i)*unce_local_t0(1,i));

unce_final_t0_DPOR(1,i)=(unce_rec_t0_DPOR(1,i)*unce_local_t0(1,i))/(unce_local_t0(1,i)+unce_rec_t0_DPOR(1,i)+unce_rec_t0_DPOR(1,i)*unce_local_t0(1,i));
end
for i=1:60
    opin_final_t0_eDPOS(1,i)=beli_final_t0_eDPOS(1,i)+0.5*unce_final_t0_eDPOS(1,i);
    opin_final_t0_DPOR(1,i)=beli_final_t0_DPOR(1,i)+0.5*unce_final_t0_DPOR(1,i);
end

%Caculate reputation value of malicious miner in t0
repu_value_t0_eDPOS=sum(sum(opin_final_t0_eDPOS))/60;
repu_value_t0_DPOR=sum(sum(opin_final_t0_DPOR.*voting_power))/sum(sum(voting_power));


%Caculate the reputation value of malicious miner in t1

%Caculate the number of different kinds of interactions between emission enterprises and malicious miner
for i=1:60
    inter_num_pos_rece_t1(1,i)=sum(sum(inter_num(4:6,i)));
    inter_num_pos_past_t1(1,i)=sum(sum(inter_num(2:3,i)));
    inter_num_neg_rece_t1(1,i)=0;
    inter_num_neg_past_t1(1,i)=0;
```

```
end

%Caculate the weighted number of interactions
inter_num_pos_t1=0.*inter_num_pos_rece_t1+0.16.*inter_num_pos_past_t1;
inter_num_neg_t1=0.36.*inter_num_neg_rece_t1+0.24.*inter_num_neg_past_t1;
inter_num_t1=inter_num_pos_t1+inter_num_neg_t1;

%Caculate local opinions of emission enterprises to malicious miner
beli_local_t1=certainty(1,1:60).*(inter_num_pos_t1./inter_num_t1);
disb_local_t1=0.*ones(1,60).*(inter_num_neg_t1./inter_num_t1);
unce_local_t1=uncertainty(1,1:60);

%Caculate the frequency of interactions
for i=1:60
    inter_freq_t1(1,i)=inter_num_t1(1,i)./(sum(sum(inter_num_t1)));
end

%Caculate recommended opinions for each emission enterprises
for i=1:60
    beli_rec_t1_eDPOS(1,i)=(sum(sum(inter_freq_t1.*beli_local_t1))-
inter_freq_t1(1,i)*beli_local_t1(1,i))/(sum(sum(inter_freq_t1))-inter_freq_t1(1,i));
    disb_rec_t1_eDPOS(1,i)=(sum(sum(inter_freq_t1.*disb_local_t1))-
inter_freq_t1(1,i)*disb_local_t1(1,i))/(sum(sum(inter_freq_t1))-inter_freq_t1(1,i));
    unce_rec_t1_eDPOS(1,i)=(sum(sum(inter_freq_t1.*unce_local_t1))-
inter_freq_t1(1,i)*unce_local_t1(1,i))/(sum(sum(inter_freq_t1))-inter_freq_t1(1,i));

    beli_rec_t1_DPOR(1,i)=(sum(sum(voting_power.*beli_local_t1))-
voting_power(1,i)*beli_local_t1(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    disb_rec_t1_DPOR(1,i)=(sum(sum(voting_power.*disb_local_t1))-
voting_power(1,i)*disb_local_t1(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    unce_rec_t1_DPOR(1,i)=(sum(sum(voting_power.*unce_local_t1))-
voting_power(1,i)*unce_local_t1(1,i))/(sum(sum(voting_power))-voting_power(1,i));
end

%Caculate final opinions of emission enterprises to malicious miner
for i=1:60
    beli_final_t1_eDPOS(1,i)=(beli_local_t1(1,i)*unce_rec_t1_eDPOS(1,i)+beli_rec_t1_eDPOS(
1,i)*unce_local_t1(1,i))/(unce_local_t1(1,i)+unce_rec_t1_eDPOS(1,i)+unce_rec_t1_eDPOS(1,i)*u
nce_local_t1(1,i));

disb_final_t1_eDPOS(1,i)=(disb_local_t1(1,i)*unce_rec_t1_eDPOS(1,i)+disb_rec_t1_eDPOS(1,i)*
unce_local_t1(1,i))/(unce_local_t1(1,i)+unce_rec_t1_eDPOS(1,i)+unce_rec_t1_eDPOS(1,i)*unce
_local_t1(1,i));
```

```
unce_final_t1_eDPOS(1,i)=(unce_rec_t1_eDPOS(1,i)*unce_local_t1(1,i))/(unce_local_t1(1,i)+unce_rec_t1_eDPOS(1,i)+unce_rec_t1_eDPOS(1,i)*unce_local_t1(1,i));


beli_final_t1_DPOR(1,i)=(beli_local_t1(1,i)*unce_rec_t1_DPOR(1,i)+beli_rec_t1_DPOR(1,i)*unce_local_t1(1,i))/(unce_local_t1(1,i)+unce_rec_t1_DPOR(1,i)+unce_rec_t1_DPOR(1,i)*unce_local_t1(1,i));

disb_final_t1_DPOR(1,i)=(disb_local_t1(1,i)*unce_rec_t1_DPOR(1,i)+disb_rec_t1_DPOR(1,i)*unce_local_t1(1,i))/(unce_local_t1(1,i)+unce_rec_t1_DPOR(1,i)+unce_rec_t1_DPOR(1,i)*unce_local_t1(1,i));

unce_final_t1_DPOR(1,i)=(unce_rec_t1_DPOR(1,i)*unce_local_t1(1,i))/(unce_local_t1(1,i)+unce_rec_t1_DPOR(1,i)+unce_rec_t1_DPOR(1,i)*unce_local_t1(1,i));
end
for i=1:60
    opin_final_t1_eDPOS(1,i)=beli_final_t1_eDPOS(1,i)+0.5*unce_final_t1_eDPOS(1,i);
    opin_final_t1_DPOR(1,i)=beli_final_t1_DPOR(1,i)+0.5*unce_final_t1_DPOR(1,i);
end

%Caculate reputation value of malicious miner in t1
repu_value_t1_eDPOS=sum(sum(opin_final_t1_eDPOS))/60;
repu_value_t1_DPOR=sum(sum(opin_final_t1_DPOR.*voting_power))/sum(sum(voting_power));


%Caculate the reputation value of malicious miner in t2

%Caculate the number of different kinds of interactions between emission enterprises and malicious miner
for i=1:60
    inter_num_pos_rece_t2(1,i)=sum(sum(inter_num(5:7,i)));
    inter_num_pos_past_t2(1,i)=sum(sum(inter_num(3:4,i)));
    inter_num_neg_rece_t2(1,i)=0;
    inter_num_neg_past_t2(1,i)=0;
end

%Caculate the weighted number of interactions
inter_num_pos_t2=0.24.*inter_num_pos_rece_t2+0.16.*inter_num_pos_past_t2;
inter_num_neg_t2=0.36.*inter_num_neg_rece_t2+0.24.*inter_num_neg_past_t2;
inter_num_t2=inter_num_pos_t2+inter_num_neg_t2;

%Caculate local opinions of emission enterprises to malicious miner
beli_local_t2=certainty(1,1:60).*(inter_num_pos_t2./inter_num_t2);
```

```
disb_local_t2=0.*ones(1,60).*(inter_num_neg_t2./inter_num_t2);
unce_local_t2=uncertainty(1,1:60);

%Caculate the frequency of interactions
for i=1:60
    inter_freq_t2(1,i)=inter_num_t2(1,i)./(sum(sum(inter_num_t2)));
end

%Caculate recommended opinions for each emission enterprises
for i=1:60
    beli_rec_t2_eDPOS(1,i)=(sum(sum(inter_freq_t2.*beli_local_t2))-
inter_freq_t2(1,i)*beli_local_t2(1,i))/(sum(sum(inter_freq_t2))-inter_freq_t2(1,i));
    disb_rec_t2_eDPOS(1,i)=(sum(sum(inter_freq_t2.*disb_local_t2))-
inter_freq_t2(1,i)*disb_local_t2(1,i))/(sum(sum(inter_freq_t2))-inter_freq_t2(1,i));
    unce_rec_t2_eDPOS(1,i)=(sum(sum(inter_freq_t2.*unce_local_t2))-
inter_freq_t2(1,i)*unce_local_t2(1,i))/(sum(sum(inter_freq_t2))-inter_freq_t2(1,i));

    beli_rec_t2_DPOR(1,i)=(sum(sum(voting_power.*beli_local_t2))-
voting_power(1,i)*beli_local_t2(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    disb_rec_t2_DPOR(1,i)=(sum(sum(voting_power.*disb_local_t2))-
voting_power(1,i)*disb_local_t2(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    unce_rec_t2_DPOR(1,i)=(sum(sum(voting_power.*unce_local_t2))-
voting_power(1,i)*unce_local_t2(1,i))/(sum(sum(voting_power))-voting_power(1,i));
end

%Caculate final opinions of emission enterprises to malicious miner
for i=1:60
    beli_final_t2_eDPOS(1,i)=(beli_local_t2(1,i)*unce_rec_t2_eDPOS(1,i)+beli_rec_t2_eDPOS(
1,i)*unce_local_t2(1,i))/(unce_local_t2(1,i)+unce_rec_t2_eDPOS(1,i)+unce_rec_t2_eDPOS(1,i)*u
nce_local_t2(1,i));

disb_final_t2_eDPOS(1,i)=(disb_local_t2(1,i)*unce_rec_t2_eDPOS(1,i)+disb_rec_t2_eDPOS(1,i)*
unce_local_t2(1,i))/(unce_local_t2(1,i)+unce_rec_t2_eDPOS(1,i)+unce_rec_t2_eDPOS(1,i)*unce
_local_t2(1,i));

unce_final_t2_eDPOS(1,i)=(unce_rec_t2_eDPOS(1,i)*unce_local_t2(1,i))/(unce_local_t2(1,i)+un
ce_rec_t2_eDPOS(1,i)+unce_rec_t2_eDPOS(1,i)*unce_local_t2(1,i));


beli_final_t2_DPOR(1,i)=(beli_local_t2(1,i)*unce_rec_t2_DPOR(1,i)+beli_rec_t2_DPOR(1,i)*unce
_local_t2(1,i))/(unce_local_t2(1,i)+unce_rec_t2_DPOR(1,i)+unce_rec_t2_DPOR(1,i)*unce_local_t
2(1,i));

disb_final_t2_DPOR(1,i)=(disb_local_t2(1,i)*unce_rec_t2_DPOR(1,i)+disb_rec_t2_DPOR(1,i)*un
```

```
ce_local_t2(1,i))/(unce_local_t2(1,i)+unce_rec_t2_DPOR(1,i)+unce_rec_t2_DPOR(1,i)*unce_loc
al_t2(1,i));

unce_final_t2_DPOR(1,i)=(unce_rec_t2_DPOR(1,i)*unce_local_t2(1,i))/(unce_local_t2(1,i)+unce
_rec_t2_DPOR(1,i)+unce_rec_t2_DPOR(1,i)*unce_local_t2(1,i));
end
for i=1:60
    opin_final_t2_eDPOS(1,i)=beli_final_t2_eDPOS(1,i)+0.5*unce_final_t2_eDPOS(1,i);
    opin_final_t2_DPOR(1,i)=beli_final_t2_DPOR(1,i)+0.5*unce_final_t2_DPOR(1,i);
end

%Caculate reputation value of malicious miner in t2
repu_value_t2_eDPOS=sum(sum(opin_final_t2_eDPOS))/60;
repu_value_t2_DPOR=sum(sum(opin_final_t2_DPOR.*voting_power))/sum(sum(voting_power
));



%Caculate the reputation value of malicious miner in t3

%Caculate the number of different kinds of interactions between emission enterprises and
malicious miner
for i=1:50
    inter_num_norm_pos_rece_t3(1,i)=sum(sum(inter_num(6:7,i)));
    inter_num_norm_pos_past_t3(1,i)=sum(sum(inter_num(4:5,i)));
    inter_num_norm_neg_rece_t3(1,i)=inter_num(8,i);
    inter_num_norm_neg_past_t3(1,i)=0;
end
for i=1:10
  inter_num_mali_pos_rece_t3(1,i)=sum(sum(inter_num(6:8,i+50)));
  inter_num_mali_pos_past_t3(1,i)=sum(sum(inter_num(4:5,i+50)));
  inter_num_mali_neg_rece_t3(1,i)=0;
  inter_num_mali_neg_past_t3(1,i)=0;
end
inter_num_pos_rece_t3=[inter_num_norm_pos_rece_t3,inter_num_mali_pos_rece_t3];
inter_num_pos_past_t3=[inter_num_norm_pos_past_t3,inter_num_mali_pos_past_t3];
inter_num_neg_rece_t3=[inter_num_norm_neg_rece_t3,inter_num_mali_neg_rece_t3];
inter_num_neg_past_t3=[inter_num_norm_neg_past_t3,inter_num_mali_neg_past_t3];

%Caculate the weighted number of interactions
inter_num_pos_t3=0.24.*inter_num_pos_rece_t3+0.16.*inter_num_pos_past_t3;
inter_num_neg_t3=0.36.*inter_num_neg_rece_t3+0.24.*inter_num_neg_past_t3;
inter_num_t3=inter_num_pos_t3+inter_num_neg_t3;

%Caculate local opinions of emission enterprises to malicious miner
```

```
beli_local_t3=certainty(1,1:60).*(inter_num_pos_t3./inter_num_t3);
disb_local_t3=0.*ones(1,60).*(inter_num_neg_t3./inter_num_t3);
unce_local_t3=uncertainty(1,1:60);

%Caculate the frequency of interactions
for i=1:60
    inter_freq_t3(1,i)=inter_num_t3(1,i)./(sum(sum(inter_num_t3)));
end

%Caculate recommended opinions for each emission enterprises
for i=1:60
    beli_rec_t3_eDPOS(1,i)=(sum(sum(inter_freq_t3.*beli_local_t3))-
inter_freq_t3(1,i)*beli_local_t3(1,i))/(sum(sum(inter_freq_t3))-inter_freq_t3(1,i));
    disb_rec_t3_eDPOS(1,i)=(sum(sum(inter_freq_t3.*disb_local_t3))-
inter_freq_t3(1,i)*disb_local_t3(1,i))/(sum(sum(inter_freq_t3))-inter_freq_t3(1,i));
    unce_rec_t3_eDPOS(1,i)=(sum(sum(inter_freq_t3.*unce_local_t3))-
inter_freq_t3(1,i)*unce_local_t3(1,i))/(sum(sum(inter_freq_t3))-inter_freq_t3(1,i));

    beli_rec_t3_DPOR(1,i)=(sum(sum(voting_power.*beli_local_t3))-
voting_power(1,i)*beli_local_t3(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    disb_rec_t3_DPOR(1,i)=(sum(sum(voting_power.*disb_local_t3))-
voting_power(1,i)*disb_local_t3(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    unce_rec_t3_DPOR(1,i)=(sum(sum(voting_power.*unce_local_t3))-
voting_power(1,i)*unce_local_t3(1,i))/(sum(sum(voting_power))-voting_power(1,i));
end

%Caculate final opinions of emission enterprises to malicious miner
for i=1:60
    beli_final_t3_eDPOS(1,i)=(beli_local_t3(1,i)*unce_rec_t3_eDPOS(1,i)+beli_rec_t3_eDPOS(
1,i)*unce_local_t3(1,i))/(unce_local_t3(1,i)+unce_rec_t3_eDPOS(1,i)+unce_rec_t3_eDPOS(1,i)*u
nce_local_t3(1,i));

disb_final_t3_eDPOS(1,i)=(disb_local_t3(1,i)*unce_rec_t3_eDPOS(1,i)+disb_rec_t3_eDPOS(1,i)*
unce_local_t3(1,i))/(unce_local_t3(1,i)+unce_rec_t3_eDPOS(1,i)+unce_rec_t3_eDPOS(1,i)*unce
_local_t3(1,i));

unce_final_t3_eDPOS(1,i)=(unce_rec_t3_eDPOS(1,i)*unce_local_t3(1,i))/(unce_local_t3(1,i)+un
ce_rec_t3_eDPOS(1,i)+unce_rec_t3_eDPOS(1,i)*unce_local_t3(1,i));


beli_final_t3_DPOR(1,i)=(beli_local_t3(1,i)*unce_rec_t3_DPOR(1,i)+beli_rec_t3_DPOR(1,i)*unce
_local_t3(1,i))/(unce_local_t3(1,i)+unce_rec_t3_DPOR(1,i)+unce_rec_t3_DPOR(1,i)*unce_local_t
3(1,i));
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```
disb_final_t3_DPOR(1,i)=(disb_local_t3(1,i)*unce_rec_t3_DPOR(1,i)+disb_rec_t3_DPOR(1,i)*unce_local_t3(1,i))/(unce_local_t3(1,i)+unce_rec_t3_DPOR(1,i)+unce_rec_t3_DPOR(1,i)*unce_local_t3(1,i));

unce_final_t3_DPOR(1,i)=(unce_rec_t3_DPOR(1,i)*unce_local_t3(1,i))/(unce_local_t3(1,i)+unce_rec_t3_DPOR(1,i)+unce_rec_t3_DPOR(1,i)*unce_local_t3(1,i));
end
for i=1:60
    opin_final_t3_eDPOS(1,i)=beli_final_t3_eDPOS(1,i)+0.5*unce_final_t3_eDPOS(1,i);
    opin_final_t3_DPOR(1,i)=beli_final_t3_DPOR(1,i)+0.5*unce_final_t3_DPOR(1,i);
end

%Caculate reputation value of malicious miner in t3
repu_value_t3_eDPOS=sum(sum(opin_final_t3_eDPOS))/60;
repu_value_t3_DPOR=sum(sum(opin_final_t3_DPOR.*voting_power))/sum(sum(voting_power));


%Caculate the reputation value of malicious miner in t4

%Caculate the number of different kinds of interactions between emission enterprises and malicious miner
for i=1:50
    inter_num_norm_pos_rece_t4(1,i)=sum(sum(inter_num(7,i)));
    inter_num_norm_pos_past_t4(1,i)=sum(sum(inter_num(5:6,i)));
    inter_num_norm_neg_rece_t4(1,i)=sum(sum(inter_num(8:9,i)));
    inter_num_norm_neg_past_t4(1,i)=0;
end
for i=1:10
  inter_num_mali_pos_rece_t4(1,i)=sum(sum(inter_num(7:9,i+50)));
  inter_num_mali_pos_past_t4(1,i)=sum(sum(inter_num(5:6,i+50)));
  inter_num_mali_neg_rece_t4(1,i)=0;
  inter_num_mali_neg_past_t4(1,i)=0;
end
inter_num_pos_rece_t4=[inter_num_norm_pos_rece_t4,inter_num_mali_pos_rece_t4];
inter_num_pos_past_t4=[inter_num_norm_pos_past_t4,inter_num_mali_pos_past_t4];
inter_num_neg_rece_t4=[inter_num_norm_neg_rece_t4,inter_num_mali_neg_rece_t4];
inter_num_neg_past_t4=[inter_num_norm_neg_past_t4,inter_num_mali_neg_past_t4];

%Caculate the weighted number of interactions
inter_num_pos_t4=0.24.*inter_num_pos_rece_t4+0.16.*inter_num_pos_past_t4;
inter_num_neg_t4=0.36.*inter_num_neg_rece_t4+0.24.*inter_num_neg_past_t4;
inter_num_t4=inter_num_pos_t4+inter_num_neg_t4;
```

```
%Caculate local opinions of emission enterprises to malicious miner
beli_local_t4=certainty(1,1:60).*(inter_num_pos_t4./inter_num_t4);
disb_local_t4=0.*ones(1,60).*(inter_num_neg_t4./inter_num_t4);
unce_local_t4=uncertainty(1,1:60);

%Caculate the frequency of interactions
for i=1:60
    inter_freq_t4(1,i)=inter_num_t4(1,i)./(sum(sum(inter_num_t4)));
end

%Caculate recommended opinions for each emission enterprises
for i=1:60
    beli_rec_t4_eDPOS(1,i)=(sum(sum(inter_freq_t4.*beli_local_t4))-
inter_freq_t4(1,i)*beli_local_t4(1,i))/(sum(sum(inter_freq_t4))-inter_freq_t4(1,i));
    disb_rec_t4_eDPOS(1,i)=(sum(sum(inter_freq_t4.*disb_local_t4))-
inter_freq_t4(1,i)*disb_local_t4(1,i))/(sum(sum(inter_freq_t4))-inter_freq_t4(1,i));
    unce_rec_t4_eDPOS(1,i)=(sum(sum(inter_freq_t4.*unce_local_t4))-
inter_freq_t4(1,i)*unce_local_t4(1,i))/(sum(sum(inter_freq_t4))-inter_freq_t4(1,i));

    beli_rec_t4_DPOR(1,i)=(sum(sum(voting_power.*beli_local_t4))-
voting_power(1,i)*beli_local_t4(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    disb_rec_t4_DPOR(1,i)=(sum(sum(voting_power.*disb_local_t4))-
voting_power(1,i)*disb_local_t4(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    unce_rec_t4_DPOR(1,i)=(sum(sum(voting_power.*unce_local_t4))-
voting_power(1,i)*unce_local_t4(1,i))/(sum(sum(voting_power))-voting_power(1,i));
end

%Caculate final opinions of emission enterprises to malicious miner
for i=1:60
    beli_final_t4_eDPOS(1,i)=(beli_local_t4(1,i)*unce_rec_t4_eDPOS(1,i)+beli_rec_t4_eDPOS(
1,i)*unce_local_t4(1,i))/(unce_local_t4(1,i)+unce_rec_t4_eDPOS(1,i)+unce_rec_t4_eDPOS(1,i)*u
nce_local_t4(1,i));

disb_final_t4_eDPOS(1,i)=(disb_local_t4(1,i)*unce_rec_t4_eDPOS(1,i)+disb_rec_t4_eDPOS(1,i)*
unce_local_t4(1,i))/(unce_local_t4(1,i)+unce_rec_t4_eDPOS(1,i)+unce_rec_t4_eDPOS(1,i)*unce
_local_t4(1,i));

unce_final_t4_eDPOS(1,i)=(unce_rec_t4_eDPOS(1,i)*unce_local_t4(1,i))/(unce_local_t4(1,i)+un
ce_rec_t4_eDPOS(1,i)+unce_rec_t4_eDPOS(1,i)*unce_local_t4(1,i));


beli_final_t4_DPOR(1,i)=(beli_local_t4(1,i)*unce_rec_t4_DPOR(1,i)+beli_rec_t4_DPOR(1,i)*unce
_local_t4(1,i))/(unce_local_t4(1,i)+unce_rec_t4_DPOR(1,i)+unce_rec_t4_DPOR(1,i)*unce_local_t
4(1,i));
```

```
disb_final_t4_DPOR(1,i)=(disb_local_t4(1,i)*unce_rec_t4_DPOR(1,i)+disb_rec_t4_DPOR(1,i)*unce_local_t4(1,i))/(unce_local_t4(1,i)+unce_rec_t4_DPOR(1,i)+unce_rec_t4_DPOR(1,i)*unce_local_t4(1,i));

unce_final_t4_DPOR(1,i)=(unce_rec_t4_DPOR(1,i)*unce_local_t4(1,i))/(unce_local_t4(1,i)+unce_rec_t4_DPOR(1,i)+unce_rec_t4_DPOR(1,i)*unce_local_t4(1,i));
end
for i=1:60
    opin_final_t4_eDPOS(1,i)=beli_final_t4_eDPOS(1,i)+0.5*unce_final_t4_eDPOS(1,i);
    opin_final_t4_DPOR(1,i)=beli_final_t4_DPOR(1,i)+0.5*unce_final_t4_DPOR(1,i);
end

%Caculate reputation value of malicious miner in t4
repu_value_t4_eDPOS=sum(sum(opin_final_t4_eDPOS))/60;
repu_value_t4_DPOR=sum(sum(opin_final_t4_DPOR.*voting_power))/sum(sum(voting_power));


%Caculate the reputation value of malicious miner in t5

%Caculate the number of different kinds of interactions between emission enterprises and malicious miner
for i=1:50
    inter_num_norm_pos_rece_t5(1,i)=0;
    inter_num_norm_pos_past_t5(1,i)=sum(sum(inter_num(6:7,i)));
    inter_num_norm_neg_rece_t5(1,i)=sum(sum(inter_num(8:10,i)));
    inter_num_norm_neg_past_t5(1,i)=0;
end
for i=1:10
 inter_num_mali_pos_rece_t5(1,i)=sum(sum(inter_num(8:10,i+50)));
 inter_num_mali_pos_past_t5(1,i)=sum(sum(inter_num(6:7,i+50)));
 inter_num_mali_neg_rece_t5(1,i)=0;
 inter_num_mali_neg_past_t5(1,i)=0;
end
inter_num_pos_rece_t5=[inter_num_norm_pos_rece_t5,inter_num_mali_pos_rece_t5];
inter_num_pos_past_t5=[inter_num_norm_pos_past_t5,inter_num_mali_pos_past_t5];
inter_num_neg_rece_t5=[inter_num_norm_neg_rece_t5,inter_num_mali_neg_rece_t5];
inter_num_neg_past_t5=[inter_num_norm_neg_past_t5,inter_num_mali_neg_past_t5];

%Caculate the weighted number of interactions
inter_num_pos_t5=0.24.*inter_num_pos_rece_t5+0.16.*inter_num_pos_past_t5;
inter_num_neg_t5=0.36.*inter_num_neg_rece_t5+0.24.*inter_num_neg_past_t5;
inter_num_t5=inter_num_pos_t5+inter_num_neg_t5;
```

```
%Caculate local opinions of emission enterprises to malicious miner
beli_local_t5=certainty(1,1:60).*(inter_num_pos_t5./inter_num_t5);
disb_local_t5=0.*ones(1,60).*(inter_num_neg_t5./inter_num_t5);
unce_local_t5=uncertainty(1,1:60);

%Caculate the frequency of interactions
for i=1:60
    inter_freq_t5(1,i)=inter_num_t5(1,i)./(sum(sum(inter_num_t5)));
end

%Caculate recommended opinions for each emission enterprises
for i=1:60
    beli_rec_t5_eDPOS(1,i)=(sum(sum(inter_freq_t5.*beli_local_t5))-
inter_freq_t5(1,i)*beli_local_t5(1,i))/(sum(sum(inter_freq_t5))-inter_freq_t5(1,i));
    disb_rec_t5_eDPOS(1,i)=(sum(sum(inter_freq_t5.*disb_local_t5))-
inter_freq_t5(1,i)*disb_local_t5(1,i))/(sum(sum(inter_freq_t5))-inter_freq_t5(1,i));
    unce_rec_t5_eDPOS(1,i)=(sum(sum(inter_freq_t5.*unce_local_t5))-
inter_freq_t5(1,i)*unce_local_t5(1,i))/(sum(sum(inter_freq_t5))-inter_freq_t5(1,i));

    beli_rec_t5_DPOR(1,i)=(sum(sum(voting_power.*beli_local_t5))-
voting_power(1,i)*beli_local_t5(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    disb_rec_t5_DPOR(1,i)=(sum(sum(voting_power.*disb_local_t5))-
voting_power(1,i)*disb_local_t5(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    unce_rec_t5_DPOR(1,i)=(sum(sum(voting_power.*unce_local_t5))-
voting_power(1,i)*unce_local_t5(1,i))/(sum(sum(voting_power))-voting_power(1,i));
end

%Caculate final opinions of emission enterprises to malicious miner
for i=1:60
    beli_final_t5_eDPOS(1,i)=(beli_local_t5(1,i)*unce_rec_t5_eDPOS(1,i)+beli_rec_t5_eDPOS(
1,i)*unce_local_t5(1,i))/(unce_local_t5(1,i)+unce_rec_t5_eDPOS(1,i)+unce_rec_t5_eDPOS(1,i)*u
nce_local_t5(1,i));

disb_final_t5_eDPOS(1,i)=(disb_local_t5(1,i)*unce_rec_t5_eDPOS(1,i)+disb_rec_t5_eDPOS(1,i)*
unce_local_t5(1,i))/(unce_local_t5(1,i)+unce_rec_t5_eDPOS(1,i)+unce_rec_t5_eDPOS(1,i)*unce
_local_t5(1,i));

unce_final_t5_eDPOS(1,i)=(unce_rec_t5_eDPOS(1,i)*unce_local_t5(1,i))/(unce_local_t5(1,i)+un
ce_rec_t5_eDPOS(1,i)+unce_rec_t5_eDPOS(1,i)*unce_local_t5(1,i));


beli_final_t5_DPOR(1,i)=(beli_local_t5(1,i)*unce_rec_t5_DPOR(1,i)+beli_rec_t5_DPOR(1,i)*unce
_local_t5(1,i))/(unce_local_t5(1,i)+unce_rec_t5_DPOR(1,i)+unce_rec_t5_DPOR(1,i)*unce_local_t
```

```
5(1,i));

disb_final_t5_DPOR(1,i)=(disb_local_t5(1,i)*unce_rec_t5_DPOR(1,i)+disb_rec_t5_DPOR(1,i)*unce_local_t5(1,i))/(unce_local_t5(1,i)+unce_rec_t5_DPOR(1,i)+unce_rec_t5_DPOR(1,i)*unce_local_t5(1,i));

unce_final_t5_DPOR(1,i)=(unce_rec_t5_DPOR(1,i)*unce_local_t5(1,i))/(unce_local_t5(1,i)+unce_rec_t5_DPOR(1,i)+unce_rec_t5_DPOR(1,i)*unce_local_t5(1,i));
end
for i=1:60
    opin_final_t5_eDPOS(1,i)=beli_final_t5_eDPOS(1,i)+0.5*unce_final_t5_eDPOS(1,i);
    opin_final_t5_DPOR(1,i)=beli_final_t5_DPOR(1,i)+0.5*unce_final_t5_DPOR(1,i);
end

%Caculate reputation value of malicious miner in t5
repu_value_t5_eDPOS=sum(sum(opin_final_t5_eDPOS))/60;
repu_value_t5_DPOR=sum(sum(opin_final_t5_DPOR.*voting_power))/sum(sum(voting_power));


%Caculate the reputation value of malicious miner in t6

%Caculate the number of different kinds of interactions between emission enterprises and malicious miner
for i=1:50
    inter_num_norm_pos_rece_t6(1,i)=0;
    inter_num_norm_pos_past_t6(1,i)=sum(sum(inter_num(7,i)));
    inter_num_norm_neg_rece_t6(1,i)=sum(sum(inter_num(9:11,i)));
    inter_num_norm_neg_past_t6(1,i)=inter_num(8,i);
end
for i=1:10
  inter_num_mali_pos_rece_t6(1,i)=sum(sum(inter_num(9:11,i+50)));
  inter_num_mali_pos_past_t6(1,i)=sum(sum(inter_num(7:8,i+50)));
  inter_num_mali_neg_rece_t6(1,i)=0;
  inter_num_mali_neg_past_t6(1,i)=0;
end
inter_num_pos_rece_t6=[inter_num_norm_pos_rece_t6,inter_num_mali_pos_rece_t6];
inter_num_pos_past_t6=[inter_num_norm_pos_past_t6,inter_num_mali_pos_past_t6];
inter_num_neg_rece_t6=[inter_num_norm_neg_rece_t6,inter_num_mali_neg_rece_t6];
inter_num_neg_past_t6=[inter_num_norm_neg_past_t6,inter_num_mali_neg_past_t6];

%Caculate the weighted number of interactions
inter_num_pos_t6=0.24.*inter_num_pos_rece_t6+0.16.*inter_num_pos_past_t6;
inter_num_neg_t6=0.36.*inter_num_neg_rece_t6+0.24.*inter_num_neg_past_t6;
```

```
inter_num_t6=inter_num_pos_t6+inter_num_neg_t6;

%Caculate local opinions of emission enterprises to malicious miner
beli_local_t6=certainty(1,1:60).*(inter_num_pos_t6./inter_num_t6);
disb_local_t6=0.*ones(1,60).*(inter_num_neg_t6./inter_num_t6);
unce_local_t6=uncertainty(1,1:60);

%Caculate the frequency of interactions
for i=1:60
    inter_freq_t6(1,i)=inter_num_t6(1,i)./(sum(sum(inter_num_t6)));
end

%Caculate recommended opinions for each emission enterprises
for i=1:60
    beli_rec_t6_eDPOS(1,i)=(sum(sum(inter_freq_t6.*beli_local_t6))-
inter_freq_t6(1,i)*beli_local_t6(1,i))/(sum(sum(inter_freq_t6))-inter_freq_t6(1,i));
    disb_rec_t6_eDPOS(1,i)=(sum(sum(inter_freq_t6.*disb_local_t6))-
inter_freq_t6(1,i)*disb_local_t6(1,i))/(sum(sum(inter_freq_t6))-inter_freq_t6(1,i));
    unce_rec_t6_eDPOS(1,i)=(sum(sum(inter_freq_t6.*unce_local_t6))-
inter_freq_t6(1,i)*unce_local_t6(1,i))/(sum(sum(inter_freq_t6))-inter_freq_t6(1,i));

    beli_rec_t6_DPOR(1,i)=(sum(sum(voting_power.*beli_local_t6))-
voting_power(1,i)*beli_local_t6(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    disb_rec_t6_DPOR(1,i)=(sum(sum(voting_power.*disb_local_t6))-
voting_power(1,i)*disb_local_t6(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    unce_rec_t6_DPOR(1,i)=(sum(sum(voting_power.*unce_local_t6))-
voting_power(1,i)*unce_local_t6(1,i))/(sum(sum(voting_power))-voting_power(1,i));
end

%Caculate final opinions of emission enterprises to malicious miner
for i=1:60
    beli_final_t6_eDPOS(1,i)=(beli_local_t6(1,i)*unce_rec_t6_eDPOS(1,i)+beli_rec_t6_eDPOS(
1,i)*unce_local_t6(1,i))/(unce_local_t6(1,i)+unce_rec_t6_eDPOS(1,i)+unce_rec_t6_eDPOS(1,i)*u
nce_local_t6(1,i));

disb_final_t6_eDPOS(1,i)=(disb_local_t6(1,i)*unce_rec_t6_eDPOS(1,i)+disb_rec_t6_eDPOS(1,i)*
unce_local_t6(1,i))/(unce_local_t6(1,i)+unce_rec_t6_eDPOS(1,i)+unce_rec_t6_eDPOS(1,i)*unce
_local_t6(1,i));

unce_final_t6_eDPOS(1,i)=(unce_rec_t6_eDPOS(1,i)*unce_local_t6(1,i))/(unce_local_t6(1,i)+un
ce_rec_t6_eDPOS(1,i)+unce_rec_t6_eDPOS(1,i)*unce_local_t6(1,i));


beli_final_t6_DPOR(1,i)=(beli_local_t6(1,i)*unce_rec_t6_DPOR(1,i)+beli_rec_t6_DPOR(1,i)*unce
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```
_local_t6(1,i))/(unce_local_t6(1,i)+unce_rec_t6_DPOR(1,i)+unce_rec_t6_DPOR(1,i)*unce_local_t
6(1,i));

disb_final_t6_DPOR(1,i)=(disb_local_t6(1,i)*unce_rec_t6_DPOR(1,i)+disb_rec_t6_DPOR(1,i)*un
ce_local_t6(1,i))/(unce_local_t6(1,i)+unce_rec_t6_DPOR(1,i)+unce_rec_t6_DPOR(1,i)*unce_loc
al_t6(1,i));

unce_final_t6_DPOR(1,i)=(unce_rec_t6_DPOR(1,i)*unce_local_t6(1,i))/(unce_local_t6(1,i)+unce
_rec_t6_DPOR(1,i)+unce_rec_t6_DPOR(1,i)*unce_local_t6(1,i));
end
for i=1:60
    opin_final_t6_eDPOS(1,i)=beli_final_t6_eDPOS(1,i)+0.5*unce_final_t6_eDPOS(1,i);
    opin_final_t6_DPOR(1,i)=beli_final_t6_DPOR(1,i)+0.5*unce_final_t6_DPOR(1,i);
end

%Caculate reputation value of malicious miner in t6
repu_value_t6_eDPOS=sum(sum(opin_final_t6_eDPOS))/60;
repu_value_t6_DPOR=sum(sum(opin_final_t6_DPOR.*voting_power))/sum(sum(voting_power
));


%Caculate the reputation value of malicious miner in t7

%Caculate the number of different kinds of interactions between emission enterprises and
malicious miner
for i=1:50
    inter_num_norm_pos_rece_t7(1,i)=0;
    inter_num_norm_pos_past_t7(1,i)=0;
    inter_num_norm_neg_rece_t7(1,i)=sum(sum(inter_num(10:12,i)));
    inter_num_norm_neg_past_t7(1,i)=sum(sum(inter_num(8:9,i)));
end
for i=1:10
  inter_num_mali_pos_rece_t7(1,i)=sum(sum(inter_num(10:12,i+50)));
  inter_num_mali_pos_past_t7(1,i)=sum(sum(inter_num(8:9,i+50)));
  inter_num_mali_neg_rece_t7(1,i)=0;
  inter_num_mali_neg_past_t7(1,i)=0;
end
inter_num_pos_rece_t7=[inter_num_norm_pos_rece_t7,inter_num_mali_pos_rece_t7];
inter_num_pos_past_t7=[inter_num_norm_pos_past_t7,inter_num_mali_pos_past_t7];
inter_num_neg_rece_t7=[inter_num_norm_neg_rece_t7,inter_num_mali_neg_rece_t7];
inter_num_neg_past_t7=[inter_num_norm_neg_past_t7,inter_num_mali_neg_past_t7];

%Caculate the weighted number of interactions
inter_num_pos_t7=0.24.*inter_num_pos_rece_t7+0.16.*inter_num_pos_past_t7;
```

```
inter_num_neg_t7=0.36.*inter_num_neg_rece_t7+0.24.*inter_num_neg_past_t7;
inter_num_t7=inter_num_pos_t7+inter_num_neg_t7;

%Caculate local opinions of emission enterprises to malicious miner
beli_local_t7=certainty(1,1:60).*(inter_num_pos_t7./inter_num_t7);
disb_local_t7=0.*ones(1,60).*(inter_num_neg_t7./inter_num_t7);
unce_local_t7=uncertainty(1,1:60);

%Caculate the frequency of interactions
for i=1:60
    inter_freq_t7(1,i)=inter_num_t7(1,i)./(sum(sum(inter_num_t7)));
end

%Caculate recommended opinions for each emission enterprises
for i=1:60
    beli_rec_t7_eDPOS(1,i)=(sum(sum(inter_freq_t7.*beli_local_t7))-
inter_freq_t7(1,i)*beli_local_t7(1,i))/(sum(sum(inter_freq_t7))-inter_freq_t7(1,i));
    disb_rec_t7_eDPOS(1,i)=(sum(sum(inter_freq_t7.*disb_local_t7))-
inter_freq_t7(1,i)*disb_local_t7(1,i))/(sum(sum(inter_freq_t7))-inter_freq_t7(1,i));
    unce_rec_t7_eDPOS(1,i)=(sum(sum(inter_freq_t7.*unce_local_t7))-
inter_freq_t7(1,i)*unce_local_t7(1,i))/(sum(sum(inter_freq_t7))-inter_freq_t7(1,i));

    beli_rec_t7_DPOR(1,i)=(sum(sum(voting_power.*beli_local_t7))-
voting_power(1,i)*beli_local_t7(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    disb_rec_t7_DPOR(1,i)=(sum(sum(voting_power.*disb_local_t7))-
voting_power(1,i)*disb_local_t7(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    unce_rec_t7_DPOR(1,i)=(sum(sum(voting_power.*unce_local_t7))-
voting_power(1,i)*unce_local_t7(1,i))/(sum(sum(voting_power))-voting_power(1,i));
end

%Caculate final opinions of emission enterprises to malicious miner
for i=1:60
    beli_final_t7_eDPOS(1,i)=(beli_local_t7(1,i)*unce_rec_t7_eDPOS(1,i)+beli_rec_t7_eDPOS(
1,i)*unce_local_t7(1,i))/(unce_local_t7(1,i)+unce_rec_t7_eDPOS(1,i)+unce_rec_t7_eDPOS(1,i)*u
nce_local_t7(1,i));

disb_final_t7_eDPOS(1,i)=(disb_local_t7(1,i)*unce_rec_t7_eDPOS(1,i)+disb_rec_t7_eDPOS(1,i)*
unce_local_t7(1,i))/(unce_local_t7(1,i)+unce_rec_t7_eDPOS(1,i)+unce_rec_t7_eDPOS(1,i)*unce
_local_t7(1,i));

unce_final_t7_eDPOS(1,i)=(unce_rec_t7_eDPOS(1,i)*unce_local_t7(1,i))/(unce_local_t7(1,i)+un
ce_rec_t7_eDPOS(1,i)+unce_rec_t7_eDPOS(1,i)*unce_local_t7(1,i));
```

```
beli_final_t7_DPOR(1,i)=(beli_local_t7(1,i)*unce_rec_t7_DPOR(1,i)+beli_rec_t7_DPOR(1,i)*unce_local_t7(1,i))/(unce_local_t7(1,i)+unce_rec_t7_DPOR(1,i)+unce_rec_t7_DPOR(1,i)*unce_local_t7(1,i));

disb_final_t7_DPOR(1,i)=(disb_local_t7(1,i)*unce_rec_t7_DPOR(1,i)+disb_rec_t7_DPOR(1,i)*unce_local_t7(1,i))/(unce_local_t7(1,i)+unce_rec_t7_DPOR(1,i)+unce_rec_t7_DPOR(1,i)*unce_local_t7(1,i));

unce_final_t7_DPOR(1,i)=(unce_rec_t7_DPOR(1,i)*unce_local_t7(1,i))/(unce_local_t7(1,i)+unce_rec_t7_DPOR(1,i)+unce_rec_t7_DPOR(1,i)*unce_local_t7(1,i));
end
for i=1:60
    opin_final_t7_eDPOS(1,i)=beli_final_t7_eDPOS(1,i)+0.5*unce_final_t7_eDPOS(1,i);
    opin_final_t7_DPOR(1,i)=beli_final_t7_DPOR(1,i)+0.5*unce_final_t7_DPOR(1,i);
end

%Caculate reputation value of malicious miner in t7
repu_value_t7_eDPOS=sum(sum(opin_final_t7_eDPOS))/60;
repu_value_t7_DPOR=sum(sum(opin_final_t7_DPOR.*voting_power))/sum(sum(voting_power));


%Caculate the reputation value of malicious miner in t8

%Caculate the number of different kinds of interactions between emission enterprises and malicious miner
for i=1:50
    inter_num_norm_pos_rece_t8(1,i)=0;
    inter_num_norm_pos_past_t8(1,i)=0;
    inter_num_norm_neg_rece_t8(1,i)=sum(sum(inter_num(11:13,i)));
    inter_num_norm_neg_past_t8(1,i)=sum(sum(inter_num(9:10,i)));
end
for i=1:10
  inter_num_mali_pos_rece_t8(1,i)=sum(sum(inter_num(11:13,i+50)));
  inter_num_mali_pos_past_t8(1,i)=sum(sum(inter_num(9:10,i+50)));
  inter_num_mali_neg_rece_t8(1,i)=0;
  inter_num_mali_neg_past_t8(1,i)=0;
end
inter_num_pos_rece_t8=[inter_num_norm_pos_rece_t8,inter_num_mali_pos_rece_t8];
inter_num_pos_past_t8=[inter_num_norm_pos_past_t8,inter_num_mali_pos_past_t8];
inter_num_neg_rece_t8=[inter_num_norm_neg_rece_t8,inter_num_mali_neg_rece_t8];
inter_num_neg_past_t8=[inter_num_norm_neg_past_t8,inter_num_mali_neg_past_t8];

%Caculate the weighted number of interactions
```

```
inter_num_pos_t8=0.24.*inter_num_pos_rece_t8+0.16.*inter_num_pos_past_t8;
inter_num_neg_t8=0.36.*inter_num_neg_rece_t8+0.24.*inter_num_neg_past_t8;
inter_num_t8=inter_num_pos_t8+inter_num_neg_t8;

%Caculate local opinions of emission enterprises to malicious miner
beli_local_t8=certainty(1,1:60).*(inter_num_pos_t8./inter_num_t8);
disb_local_t8=0.*ones(1,60).*(inter_num_neg_t8./inter_num_t8);
unce_local_t8=uncertainty(1,1:60);

%Caculate the frequency of interactions
for i=1:60
    inter_freq_t8(1,i)=inter_num_t8(1,i)./(sum(sum(inter_num_t8)));
end

%Caculate recommended opinions for each emission enterprises
for i=1:60
    beli_rec_t8_eDPOS(1,i)=(sum(sum(inter_freq_t8.*beli_local_t8))-
inter_freq_t8(1,i)*beli_local_t8(1,i))/(sum(sum(inter_freq_t8))-inter_freq_t8(1,i));
    disb_rec_t8_eDPOS(1,i)=(sum(sum(inter_freq_t8.*disb_local_t8))-
inter_freq_t8(1,i)*disb_local_t8(1,i))/(sum(sum(inter_freq_t8))-inter_freq_t8(1,i));
    unce_rec_t8_eDPOS(1,i)=(sum(sum(inter_freq_t8.*unce_local_t8))-
inter_freq_t8(1,i)*unce_local_t8(1,i))/(sum(sum(inter_freq_t8))-inter_freq_t8(1,i));

    beli_rec_t8_DPOR(1,i)=(sum(sum(voting_power.*beli_local_t8))-
voting_power(1,i)*beli_local_t8(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    disb_rec_t8_DPOR(1,i)=(sum(sum(voting_power.*disb_local_t8))-
voting_power(1,i)*disb_local_t8(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    unce_rec_t8_DPOR(1,i)=(sum(sum(voting_power.*unce_local_t8))-
voting_power(1,i)*unce_local_t8(1,i))/(sum(sum(voting_power))-voting_power(1,i));
end

%Caculate final opinions of emission enterprises to malicious miner
for i=1:60
    beli_final_t8_eDPOS(1,i)=(beli_local_t8(1,i)*unce_rec_t8_eDPOS(1,i)+beli_rec_t8_eDPOS(
1,i)*unce_local_t8(1,i))/(unce_local_t8(1,i)+unce_rec_t8_eDPOS(1,i)+unce_rec_t8_eDPOS(1,i)*u
nce_local_t8(1,i));

disb_final_t8_eDPOS(1,i)=(disb_local_t8(1,i)*unce_rec_t8_eDPOS(1,i)+disb_rec_t8_eDPOS(1,i)*
unce_local_t8(1,i))/(unce_local_t8(1,i)+unce_rec_t8_eDPOS(1,i)+unce_rec_t8_eDPOS(1,i)*unce
_local_t8(1,i));

unce_final_t8_eDPOS(1,i)=(unce_rec_t8_eDPOS(1,i)*unce_local_t8(1,i))/(unce_local_t8(1,i)+un
ce_rec_t8_eDPOS(1,i)+unce_rec_t8_eDPOS(1,i)*unce_local_t8(1,i));
```

```
beli_final_t8_DPOR(1,i)=(beli_local_t8(1,i)*unce_rec_t8_DPOR(1,i)+beli_rec_t8_DPOR(1,i)*unce_local_t8(1,i))/(unce_local_t8(1,i)+unce_rec_t8_DPOR(1,i)+unce_rec_t8_DPOR(1,i)*unce_local_t8(1,i));

disb_final_t8_DPOR(1,i)=(disb_local_t8(1,i)*unce_rec_t8_DPOR(1,i)+disb_rec_t8_DPOR(1,i)*unce_local_t8(1,i))/(unce_local_t8(1,i)+unce_rec_t8_DPOR(1,i)+unce_rec_t8_DPOR(1,i)*unce_local_t8(1,i));

unce_final_t8_DPOR(1,i)=(unce_rec_t8_DPOR(1,i)*unce_local_t8(1,i))/(unce_local_t8(1,i)+unce_rec_t8_DPOR(1,i)+unce_rec_t8_DPOR(1,i)*unce_local_t8(1,i));
end
for i=1:60
    opin_final_t8_eDPOS(1,i)=beli_final_t8_eDPOS(1,i)+0.5*unce_final_t8_eDPOS(1,i);
    opin_final_t8_DPOR(1,i)=beli_final_t8_DPOR(1,i)+0.5*unce_final_t8_DPOR(1,i);
end

%Caculate reputation value of malicious miner in t8
repu_value_t8_eDPOS=sum(sum(opin_final_t8_eDPOS))/60;
repu_value_t8_DPOR=sum(sum(opin_final_t8_DPOR.*voting_power))/sum(sum(voting_power));


%Caculate the reputation value of malicious miner in t9

%Caculate the number of different kinds of interactions between emission enterprises and malicious miner
for i=1:50
    inter_num_norm_pos_rece_t9(1,i)=0;
    inter_num_norm_pos_past_t9(1,i)=0;
    inter_num_norm_neg_rece_t9(1,i)=sum(sum(inter_num(12:14,i)));
    inter_num_norm_neg_past_t9(1,i)=sum(sum(inter_num(10:11,i)));
end
for i=1:10
  inter_num_mali_pos_rece_t9(1,i)=sum(sum(inter_num(12:14,i+50)));
  inter_num_mali_pos_past_t9(1,i)=sum(sum(inter_num(10:11,i+50)));
  inter_num_mali_neg_rece_t9(1,i)=0;
  inter_num_mali_neg_past_t9(1,i)=0;
end
inter_num_pos_rece_t9=[inter_num_norm_pos_rece_t9,inter_num_mali_pos_rece_t9];
inter_num_pos_past_t9=[inter_num_norm_pos_past_t9,inter_num_mali_pos_past_t9];
inter_num_neg_rece_t9=[inter_num_norm_neg_rece_t9,inter_num_mali_neg_rece_t9];
inter_num_neg_past_t9=[inter_num_norm_neg_past_t9,inter_num_mali_neg_past_t9];
```

```
%Caculate the weighted number of interactions
inter_num_pos_t9=0.24.*inter_num_pos_rece_t9+0.16.*inter_num_pos_past_t9;
inter_num_neg_t9=0.36.*inter_num_neg_rece_t9+0.24.*inter_num_neg_past_t9;
inter_num_t9=inter_num_pos_t9+inter_num_neg_t9;

%Caculate local opinions of emission enterprises to malicious miner
beli_local_t9=certainty(1,1:60).*(inter_num_pos_t9./inter_num_t9);
disb_local_t9=0.*ones(1,60).*(inter_num_neg_t9./inter_num_t9);
unce_local_t9=uncertainty(1,1:60);

%Caculate the frequency of interactions
for i=1:60
    inter_freq_t9(1,i)=inter_num_t9(1,i)./(sum(sum(inter_num_t9)));
end

%Caculate recommended opinions for each emission enterprises
for i=1:60
    beli_rec_t9_eDPOS(1,i)=(sum(sum(inter_freq_t9.*beli_local_t9))-
inter_freq_t9(1,i)*beli_local_t9(1,i))/(sum(sum(inter_freq_t9))-inter_freq_t9(1,i));
    disb_rec_t9_eDPOS(1,i)=(sum(sum(inter_freq_t9.*disb_local_t9))-
inter_freq_t9(1,i)*disb_local_t9(1,i))/(sum(sum(inter_freq_t9))-inter_freq_t9(1,i));
    unce_rec_t9_eDPOS(1,i)=(sum(sum(inter_freq_t9.*unce_local_t9))-
inter_freq_t9(1,i)*unce_local_t9(1,i))/(sum(sum(inter_freq_t9))-inter_freq_t9(1,i));

    beli_rec_t9_DPOR(1,i)=(sum(sum(voting_power.*beli_local_t9))-
voting_power(1,i)*beli_local_t9(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    disb_rec_t9_DPOR(1,i)=(sum(sum(voting_power.*disb_local_t9))-
voting_power(1,i)*disb_local_t9(1,i))/(sum(sum(voting_power))-voting_power(1,i));
    unce_rec_t9_DPOR(1,i)=(sum(sum(voting_power.*unce_local_t9))-
voting_power(1,i)*unce_local_t9(1,i))/(sum(sum(voting_power))-voting_power(1,i));
end

%Caculate final opinions of emission enterprises to malicious miner
for i=1:60
    beli_final_t9_eDPOS(1,i)=(beli_local_t9(1,i)*unce_rec_t9_eDPOS(1,i)+beli_rec_t9_eDPOS(
1,i)*unce_local_t9(1,i))/(unce_local_t9(1,i)+unce_rec_t9_eDPOS(1,i)+unce_rec_t9_eDPOS(1,i)*u
nce_local_t9(1,i));

disb_final_t9_eDPOS(1,i)=(disb_local_t9(1,i)*unce_rec_t9_eDPOS(1,i)+disb_rec_t9_eDPOS(1,i)*
unce_local_t9(1,i))/(unce_local_t9(1,i)+unce_rec_t9_eDPOS(1,i)+unce_rec_t9_eDPOS(1,i)*unce
_local_t9(1,i));

unce_final_t9_eDPOS(1,i)=(unce_rec_t9_eDPOS(1,i)*unce_local_t9(1,i))/(unce_local_t9(1,i)+un
ce_rec_t9_eDPOS(1,i)+unce_rec_t9_eDPOS(1,i)*unce_local_t9(1,i));
```

```
beli_final_t9_DPOR(1,i)=(beli_local_t9(1,i)*unce_rec_t9_DPOR(1,i)+beli_rec_t9_DPOR(1,i)*unce_local_t9(1,i))/(unce_local_t9(1,i)+unce_rec_t9_DPOR(1,i)+unce_rec_t9_DPOR(1,i)*unce_local_t9(1,i));

disb_final_t9_DPOR(1,i)=(disb_local_t9(1,i)*unce_rec_t9_DPOR(1,i)+disb_rec_t9_DPOR(1,i)*unce_local_t9(1,i))/(unce_local_t9(1,i)+unce_rec_t9_DPOR(1,i)+unce_rec_t9_DPOR(1,i)*unce_local_t9(1,i));

unce_final_t9_DPOR(1,i)=(unce_rec_t9_DPOR(1,i)*unce_local_t9(1,i))/(unce_local_t9(1,i)+unce_rec_t9_DPOR(1,i)+unce_rec_t9_DPOR(1,i)*unce_local_t9(1,i));
end
for i=1:60
    opin_final_t9_eDPOS(1,i)=beli_final_t9_eDPOS(1,i)+0.5*unce_final_t9_eDPOS(1,i);
    opin_final_t9_DPOR(1,i)=beli_final_t9_DPOR(1,i)+0.5*unce_final_t9_DPOR(1,i);
end

%Caculate reputation value of malicious miner in t9
repu_value_t9_eDPOS=sum(sum(opin_final_t9_eDPOS))/60;
repu_value_t9_DPOR=sum(sum(opin_final_t9_DPOR.*voting_power))/sum(sum(voting_power));



%Caculate reputation value line of the malicious miner
repu_value_eDPOS(u,:)=[repu_value_t0_eDPOS repu_value_t1_eDPOS repu_value_t2_eDPOS repu_value_t3_eDPOS repu_value_t4_eDPOS repu_value_t5_eDPOS repu_value_t6_eDPOS repu_value_t7_eDPOS repu_value_t8_eDPOS repu_value_t9_eDPOS];
repu_value_DPOR(u,:)=[repu_value_t0_DPOR repu_value_t1_DPOR repu_value_t2_DPOR repu_value_t3_DPOR repu_value_t4_DPOR repu_value_t5_DPOR repu_value_t6_DPOR repu_value_t7_DPOR repu_value_t8_DPOR repu_value_t9_DPOR];

end


%Covert the reputation values into the range of 0 to 1
Repu_value_eDPOS=sum(repu_value_eDPOS)/1000;
Repu_value_DPOR=sum(repu_value_DPOR)/1000;

%Draw the curve of malicious miner's reputation values with time
figure(1);
t=[0 1 2 3 4 5 6 7 8 9];
plot(t,Repu_value_eDPOS,'-g*',t,Repu_value_DPOR,'-b^');
```

```
axis([0,9,0,1]);
grid on;
legend('加强型股份授权证明','信誉授权证明');
xlabel('时间');
ylabel('矿工信誉值');
```