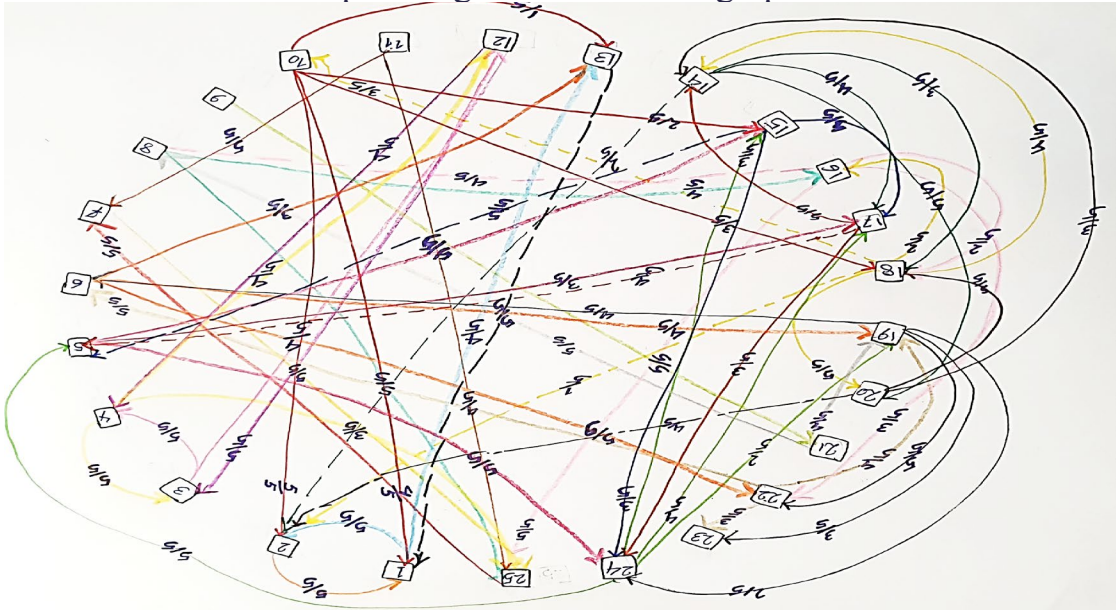


Spreading Information on graph



```
#include <fstream>
```

```
#include <iostream>
```

```
#include <cstdlib>
```

```
#include <ctime>
```

```
using namespace std;
```

```
int main() {
```

```
    ofstream out("dataa.gnumeric");
```

```
    srand(time(NULL));
```

```
    int G = 25;
```

```
    int i, j;
```

```
    float a[G][G];
```

```
    int M[G] = {0,0,1,1,0,1,1,1,0,0,1,1,0,0,0,1,0,0,1,0,1,1,1,1,1};
```

```
    float alpha = 0.1;
```

```
    for(i = 0; i < G; i++){
```

```
for(j = 0; j < G; j++){  
    a[i][j] = 0.0;  
}  
}
```

```
a[0][1]=1;a[0][12]=0.8;  
a[1][0]=1;  
a[2][3]=1;a[2][11]=0.8;  
a[3][2]=1;a[3][11]=0.8;a[3][24]=0.6;  
a[4][23]=1;a[4][14]=0.8;a[4][16]=0.6;  
a[5][21]=1;a[5][18]=0.8;a[5][22]=0.6;  
a[6][24]=1;  
a[7][24]=1;a[7][15]=0.8;  
a[8][20]=1;  
a[9][1]=1;a[9][0]=0.8;a[9][17]=0.4;a[9][14]=0.4;a[9][12]=0.2;  
a[10][6]=1;a[10][24]=0.8;  
a[11][2]=1;a[11][3]=0.8;  
a[12][0]=1;  
a[13][19]=1;a[13][16]=0.8;a[13][17]=0.6;a[13][1]=0.4;  
a[14][4]=1;a[14][16]=0.8;a[14][23]=0.6;  
a[15][24]=1;a[15][7]=0.8;a[15][21]=0.6;a[15][17]=0.4;  
a[16][13]=1;a[16][4]=0.8;a[16][23]=0.6;  
a[17][19]=1;a[17][13]=0.8;a[17][9]=0.6;a[17][15]=0.4;a[17][1]=0.2;  
a[18][21]=1;a[18][5]=0.8;a[18][22]=0.6;a[18][23]=0.4;  
a[19][17]=1;a[19][1]=0.8;a[19][13]=0.6;  
a[20][7]=1;a[20][18]=0.8;  
a[21][5]=1;a[21][18]=0.8;a[21][22]=0.6;  
a[22][21]=1;a[22][18]=0.8;a[22][5]=0.6;
```

```

a[23][4]=1;a[23][16]=0.8;a[23][14]=0.6;a[23][18]=0.4;
a[24][6]=1;
int pi, pf;
float p, r;
float pave;
float initial_pave;
initial_pave = 0.0;
for(j=0;j<G;j++)initial_pave+=M[j];
initial_pave/=G;
for(int n=0;n<100;n++){
    pave=0.0;
    for(j=0;j<G;j++)pave+=M[j];
    pave/=G;
    out<<n<<'t'<<pave<<'n';
    pi=rand()%G;
    while(true){
        pf=rand()%G;
        if(a[pi][pf]!=0)break;

        p=alpha*a[pi][pf];
        r=(rand()/(RAND_MAX+1.0));
        if(r<p){
            M[pi]=M[pf];
        }else M[pf]=M[pi];
    }
}
return 0;
}

```

