八数码A\*算法程序

function [a1,b1]=shang(a)

[x,y]=find(a==0);

a1=a;

a1(x,y)=a(x-1,y);

a1(x-1,y)=0;

b1=zhao(a1);

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

function [a1,b1]=xia(a)

[x,y]=find(a==0);

a1=a;

a1(x,y)=a(x+1,y);

a1(x+1,y)=0;

b1=zhao(a1);

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

function [a1,b1]=zuo(a)

[x,y]=find(a==0);

a1=a;

a1(x,y)=a(x,y-1);

a1(x,y-1)=0;

b1=zhao(a1);

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

function [a1,b1]=you(a)

[x,y]=find(a==0);

a1=a;

a1(x,y)=a(x,y+1);

a1(x,y+1)=0;

b1=zhao(a1);

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

function z=panduan(a)

global E;

global I;

I=2;

[x,y]=size(E);

z=1;

for i=1:y

b=E{i};

v=(b-a).^2;

if sum(sum(v))==0

z=0;

break;

end

end

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

function y=zhao(a)

wan=[1 2 3;8 0 4;7 6 5];

y=0;

b=a-wan;

for i=1:3

for j=1:3

if b(i,j)~=0

y=y+1;

end

end

end

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

global E

global I

a=[2 8 3;1 0 4;7 6 5];

b=[1 2 3;8 0 4;7 6 5];

I=1;

E(1)={a};

for i=2:20

q=b-E{i};

if sum(sum(q.^2))

E(i)={kaka(E{i-1})};

celldisp(E(i))

else

break;

end

end

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

function [a1]=kaka(a)

global I;

global E;

c=[2 8 3;1 0 4;7 6 5];

E(1)={c};

[x,y]=find(a==0);

z=9;

if x==1

if y==1

[x1,y1]=xia(a);

if y1<z

if panduan(x1)

b=x1;

z=y1;

end

end

[x2,y2]=you(a);

if y2<z

if panduan(x2)

b=x2;

z=y2;

end

end

a1=b;

end

if y==2

[x1,y1]=xia(a);

if y1<z

if panduan(x1)

b=x1;

z=y1;

end

end

[x2,y2]=zuo(a);

if y2<z

if panduan(x2)

b=x2;

z=y2;

end

end

[x3,y3]=you(a);

if y3<z

if panduan(x3)

b=x3;

z=y3;

end

end

a1=b;

end

if y==3

[x1,y1]=xia(a);

if y1<z

if panduan(x1)

b=x1;

z=y1;

end

end

[x2,y2]=zuo(a);

if y2<z

if panduan(x2)

b=x2;

z=y2;

end

end

a1=b;

end

end

if x==2

if y==1

[x1,y1]=shang(a);

if y1<z

if panduan(x1)

b=x1;

z=y1;

end

end

[x2,y2]=xia(a);

if y2<z

if panduan(x2)

b=x2;

z=y2;

end

end

[x3,y3]=you(a);

if y3<z

if panduan(x3)

b=x3;

z=y3;

end

end

a1=b;

end

if y==2

[x1,y1]=shang(a);

if y1<z

if panduan(x1);

b=x1;

z=y1;

end

end

[x2,y2]=xia(a);

if y2<z

if panduan(x2);

b=x2;

z=y2;

end

end

[x3,y3]=zuo(a);

if y3<z

if panduan(x3);

b=x3;

z=y3;

end

end

[x4,y4]=you(a);

if y4<z;

if panduan(x4)

b=x4;

z=y4;

end

end

a1=b;

end

if y==3

[x1,y1]=shang(a);

if y1<z

if panduan(x1)

b=x1;

z=y1;

end

end

[x2,y2]=xia(a);

if y2<z

if panduan(x2)

b=x2;

z=y2;

end

end

[x3,y3]=zuo(a);

if y3<z

if panduan(x3)

b=x3;

z=y3;

end

end

a1=b;

end

end

if x==3

if y==1

[x1,y1]=shang(a);

if y1<z

if panduan(x1)

b=x1;

z=y1;

end

end

[x4,y4]=you(a);

if y4<z;

if panduan(x4)

b=x4;

z=y4;

end

end

a1=b;

end

if y==2

[x1,y1]=shang(a);

if y1<z

if panduan(x1)

b=x1;

z=y1;

end

end

[x3,y3]=zuo(a);

if y3<z

if panduan(x3)

b=x3;

z=y3;

end

end

[x4,y4]=you(a);

if y4<z;

if panduan(x4)

b=x4;

z=y4;

end

end

a1=b;

end

if y==3

[x1,y1]=shang(a);

if y1<z

if panduan(x1)

b=x1;

z=y1;

end

end

[x3,y3]=zuo(a);

if y3<z

if panduan(x3)

b=x3;

z=y3;

end

end

a1=b;

end

end

E(I)={a1};