

NAVLAKHI'S

Navlakhi's



Liang Barsky

Methodology and Program

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Semester 4: Computer Graphics

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¹
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```
#include<graphics.h>
#include<dos.h>
#include<conio.h>
#include<stdlib.h>
#include<iostream.h>

void main()
{
    int  gd=VGA, gm=VGAHI ;
    int  x1 , y1 , x2 , y2 ;

    int  wxmin , wymin , wxmax , wymax ;
    float u1 = 0.0 , u2 = 1.0 ;

    int  p1 , q1 , p2 , q2 , p3 , q3 , p4 , q4 ;
    float r1 , r2 , r3 , r4 ;
    int  x11 , y11 , x22 , y22 ;

    clrscr();
    cout<<"Enter the windows left , bottom boundry\n";
    cin>>wxmin>>wymin;
    cout<<"Enter the windows right ,bottom boundry\n";
    cin>>wxmax>>wymax;

    cout<<"Enter line x1 , y1 co-ordinate\n";
    cin>>x1>>y1;

    cout<<"Enter line x2 , y2 co-ordinate\n";
    cin>>x2>>y2;
```

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p1 = -(x2 - x1); q1 = x1 - wxmin ;
p2 = ( x2 - x1 ); q2 = wxmax - x1 ;
p3 = - ( y2 - y1 ); q3 = y1 - wymin ;
p4 = ( y2 - y1 ); q4 = wymax - y1 ;

if( ( ( p1 == 0.0 ) && ( q1 < 0.0 ) ) || ( ( p2 == 0.0 ) && ( q2 < 0.0 ) ) ||
    ( ( p3 == 0.0 ) && ( q3 < 0.0 ) ) || ( ( p4 == 0.0 ) && ( q4 < 0.0 ) ) )
{
    cout<<"Line is rejected\n";
    initgraph(&gd,&gm,"d:\\tc\\bgi");
    setcolor(2);
    rectangle(wxmin,wymax,wxmax,wymin);
    setcolor(1);
    line(x1,y1,x2,y2);
    getch();
    setcolor(0);
    line(x1,y1,x2,y2);
    getch();
}
else
{
    if( p1 != 0.0 )
    {
        r1 =(float) q1 /p1 ;
        if( p1 < 0 )
            u1 = r1>u1?r1:u1;
        else
            u2 =r1>u2?u2:r1;
    }
    if( p2 != 0.0 )
    {
        r2 = (float ) q2 /p2 ;
        if( p2 < 0 )
            u1 = r2>u1?r2:u1;
        else
            u2 = r2>u2?u2:r2;
    }
}
```

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```
if( p3 != 0.0 )
{
    r3 = (float )q3 /p3 ;
    if( p3 < 0 )
        u1 = r3>u1?r3:u1;
    else
        u2 = r3>u2?u2:r3;
}
if( p4 != 0.0 )
{
    r4 = (float )q4 /p4 ;
    if( p4 < 0 )
        u1 = r4>u1?r4:u1;
    else
        u2 = r4>u2?u2:r4;
}

if( u1 > u2 )
    cout<<("line rejected\n");
else
{
    x11 = x1 + u1 * ( x2 - x1 );
    y11 = y1 + u1 * ( y2 - y1 );

    x22 = x1 + u2 * ( x2 - x1 );
    y22 = y1 + u2 * ( y2 - y1 );

    cout<<"Original line cordinates\n";
    cout<<"x1 ="<<x1<<","y1="<<y1<<","x2 ="<<x2<<","y2="<<y2<<endl;

    cout<<"Windows coordiante are \n";
    cout<<"wxmin ="<<wxmin<<","wymn ="<<wymn<<","wxmax ="<<wxmax<<","wymax
="<<wymax<<endl;

    cout<<"New coordinates are \n";
    cout<<"x1 ="<<x11<<","y1 ="<<y11<<","x2 ="<<x22<<","y2 ="<<y22<<endl;
```

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```
initgraph(&gd,&gm,"d:\\tc\\bgi");
setcolor(2);
rectangle(wxmin,wymax,wxmax,wymin);
setcolor(1);
line(x1,y1,x2,y2);
getch();
setcolor(0);
line(x1,y1,x2,y2);

setcolor(3);
line(x11,y11,x22,y22);
getch();

}
}
}
/*_*****_*/
```

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