

## Code:

```
#include <iostream>
#include <graphics.h>
using namespace std;

const int INSIDE = 0, LEFT = 1, RIGHT = 2,
BOTTOM = 4, TOP = 8;
const int X_MIN = 100, X_MAX = 500, Y_MIN =
100, Y_MAX = 500;

int computeCode(double x, double y)
{
    int code = INSIDE;
    if (x < X_MIN)
        code |= LEFT;
    else if (x > X_MAX)
        code |= RIGHT;
    if (y < Y_MIN)
        code |= BOTTOM;
    else if (y > Y_MAX)
        code |= TOP;
    return code;
}

void clipLine(double x1, double y1, double x2,
double y2)
{
    int code1 = computeCode(x1, y1);
    int code2 = computeCode(x2, y2);
    while (true)
    {
        if (!(code1 | code2))
        {
            line(x1, y1, x2, y2);
            break;
        }
        else if (code1 & code2) break;
        else
        {
            int code = code1 ? code1 : code2;
            double x, y;
            if (code & TOP)
            {

$$x = x1 + (x2 - x1) * (Y\_MAX - y1) / (y2 - y1);$$

y = Y_MAX;
            }
            else if (code & BOTTOM)

```

```

            {

$$x = x1 + (x2 - x1) * (Y\_MIN - y1) / (y2 - y1);$$

y = Y_MIN;
            }
            else if (code & RIGHT)
            {

$$y = y1 + (y2 - y1) * (X\_MAX - x1) / (x2 - x1);$$

x = X_MAX;
            }
            else // code & LEFT
            {

$$y = y1 + (y2 - y1) * (X\_MIN - x1) / (x2 - x1);$$

x = X_MIN;
            }
            if (code == code1)
            {
                x1 = x; y1 = y;
                code1 = computeCode(x1, y1);
            }
            else
            {
                x2 = x; y2 = y;
                code2 = computeCode(x2, y2);
            }
        }
    }
}

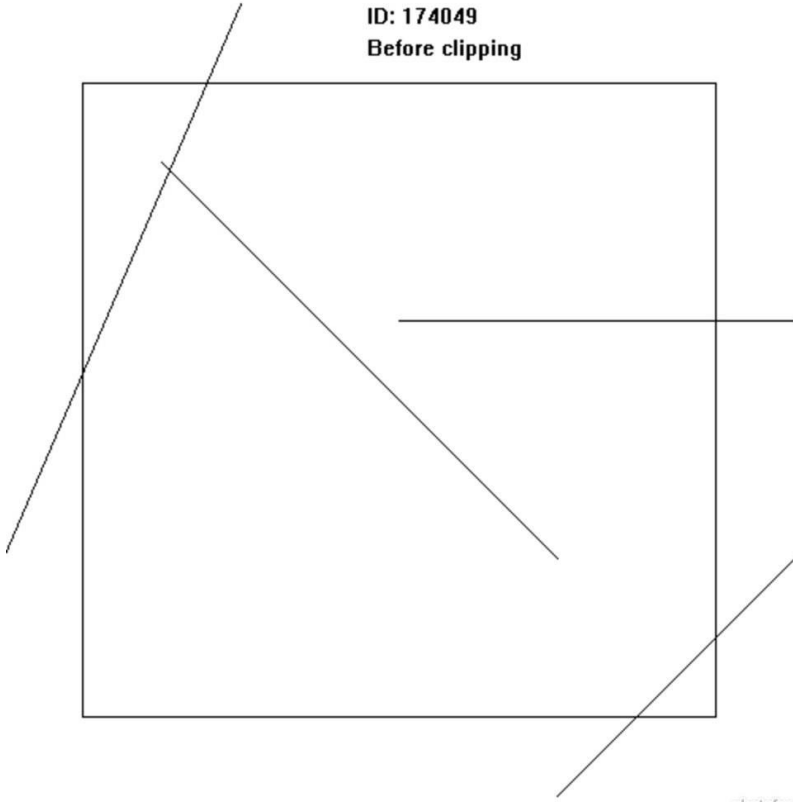
int main()
{
    initwindow(800,800);
    outtextxy(280,50,"ID: 174049");
    outtextxy(280,70,"Before clipping");
    line(150, 150, 400, 400);
    line(50, 400, 200, 50);
    line(300, 250, 550, 250);
    line(550, 400, 400, 550);

    outtextxy(280,80,"After clipping");
    clipLine(150, 150, 400, 400);
    clipLine(50, 400, 200, 50);
    clipLine(300, 250, 550, 250);
    clipLine(550, 400, 400, 550);

    while(!kbhit()){
        delay(100);
    }
}
```

## Result:

ID: 174049  
Before clipping



ID: 174049  
After clipping

