C program for DDA line generation

#include<stdio.h>

#include<graphics.h>

#include<math.h>

//Function for finding absolute value

int abs (int n)

{

    return ( (n>0) ? n : ( n \* (-1)));

}

//DDA Function for line generation

void DDA(int X0, int Y0, int X1, int Y1)

{

    // calculate dx & dy

    int dx = X1 - X0;

    int dy = Y1 - Y0;

    // calculate steps required for generating pixels

    int steps = abs(dx) > abs(dy) ? abs(dx) : abs(dy);

    // calculate increment in x & y for each steps

    float Xinc = dx / (float) steps;

    float Yinc = dy / (float) steps;

    // Put pixel for each step

    float X = X0;

    float Y = Y0;

    for (int i = 0; i <= steps; i++)

    {

        putpixel (round(X),round(Y),RED);  // put pixel at (X,Y)

        X += Xinc;           // increment in x at each step

        Y += Yinc;           // increment in y at each step

        delay(100);          // for visualization of line-

                             // generation step by step

    }

}

// Driver program

int main()

{

    int gd = DETECT, gm;

    // Initialize graphics function

    initgraph (&gd, &gm, "");

    int X0 = 2, Y0 = 2, X1 = 14, Y1 = 16;

    DDA(2, 2, 14, 16);

    return 0;

}