# **LAB 2: Implementation of line drawing algorithms – DDA(Digital Differential Algorithm)**

**Algorithm:**

Step 1. Declare the variables, x1,y1 and x2 , y2 dx, dy ,del x, del y as real and k as integer.

Step 2. Perform

dx = x2-x1

dy = y2 – y1

Step 3. Test if |dy|<|dx| then

Steps = |dx|

Else steps = |dy|

Step 4. set del x = dx/steps

del y = dy/steps

x= x1

y = y1

Step 5. Plot (x, y)

Step 6. Do for k = 1 to steps

x = x+ delx

y = y +del y

Plot (x,y)

# **Program using C language:**

#include<graphics.h>

#include<conio.h>

#include<stdio.h>

void main()

{

int gd = DETECT ,gm, i;

float x, y,dx,dy,steps;

int x0, x1, y0, y1;

initgraph(&gd, &gm, "C:\\TURBOC3\\BGI");

setbkcolor(WHITE);

x0 = 100 , y0 = 200, x1 = 500, y1 = 300;

dx = (float)(x1 - x0);

dy = (float)(y1 - y0);

if(dx>=dy)

{

steps = dx;

}

else

{

steps = dy;

}

dx = dx/steps;

dy = dy/steps;

x = x0;

y = y0;

i = 1;

while(i<= steps)

{

putpixel(x, y, RED);

x += dx;

y += dy;

i=i+1;

}

getch();

closegraph();

}

**Output:**