**1 - Write a program to implement DDA Line drawing algorithm.**

(i ) Calculate dx , dy

dx = X1 - X0;

dy = Y1 - Y0;

(ii) Depending upon absolute value of dx & dy

-> choose number of steps to put pixel as

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

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

(iii) Calculate increment in x & y for each steps

Xinc = dx / (float) steps;

Yinc = dy / (float) steps;

(iv) Put pixel for each step

X = X0;

Y = Y0;

for (int i = 0; i <= steps; i++)

{

putpixel (X,Y,WHITE);

X += Xinc;

Y += Yinc;

}

**Program in C:-**

#include<stdio.h>

#include<graphics.h>

int abs (int n)

{

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

}

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

{

int dx = X1 - X0;

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

float Xinc = dx / (float) steps;

float Yinc = dy / (float) steps;

float X = X0;

float Y = Y0;

for (int i = 0; i <= steps; i++)

{

putpixel (X,Y,RED);

X += Xinc;

Y += Yinc;

delay(100);

}

}

int main()

{

int gd = DETECT, gm;

initgraph (&gd, &gm, "");

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

DDA(2, 2, 14, 16);

return 0;

}

**Output:-**

