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Course - BCA Sec. A

Subject - Computer graphics

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Pro ⇒ 1⇒ DDA Algorithm :

Step 1- Start Algorithm

Step 2- Declare $x_1, y_1, x_2, y_2, dx, x, y$ as integer variables.

Step 3 - Enter value of x_1, y_1, x_2, y_2

Step 4 - Calculate $dx = x_2 - x_1$

Step 5 - Calculate $dy = y_2 - y_1$

Step 6 - If ABS (dx) > ABS (dy)
Then Step = abs (dx)
Else

Step 7 - $x_{inc} = dx / Step$
$y_{inc} = dy / Step$
assign $x = x_1$
assign $y = y_1$

Step 8 - Set pixel (x, y)

Step 9 - $x = x + x_{inc}$
$y = y + y_{inc}$
Set pixels (Round (x), Round (y))

Step 10 : Repeat Step 9 until $x = x_2$

Step 11 : End Algorithm.

Program to implement DDA line Algorithm:

```
#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);
 setbkcolor (WHITE);
 x0 = 100, y0 = 200, x1 = 500, y1 = 300;
 dx = (float)(x1 - x0);
 dy = (float)(y1 - y0);
 if (dx >= dy)
  {
   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 :