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Subject \rightarrow Computer Graphics Practical
Sub. code \rightarrow PBC-602

Ques \rightarrow Ans \rightarrow

Algorithm \rightarrow

- Step 1 \rightarrow start
- Step 2 \rightarrow Declare variable $x_1, x_2, y_1, y_2, d, i_1, i_2, dx, dy$
- Step 3 \rightarrow Enter value of x_1, y_1, x_2, y_2
- Step 4 \rightarrow Calculate $dx = x_2 - x_1$
Calculate $dy = y_2 - y_1$
Calculate $i_1 = 2 * dy$
Calculate $d = i_1 - dx$
- Step 5 \rightarrow Consider (x, y) as starting point and x_{end} as maximum possible value of x .
- if $dx < 0$
Then $x = x_2$
 $y = y_2$
 $x_{end} = x_1$
- if $dx > 0$
then $x = x_1$
 $y = y_1$
 $x_{end} = x_2$
- Step 6 \rightarrow Generate point at (x, y) coordinates.
- Step 7 \rightarrow check if whole line is generated
if $x > x_{end}$
stop.

(H)

Step 8 → calculate co-ordinates of the next pixel

if $d < 0$

Then $d = d + i_1$,

if $d \geq 0$

Then $d = d + i_2$

increment $y = y + 1$

Step 9 → increment $x = x + 1$

Step 10 → Draw a point of latest (x, y) coordinates

Step 11 → Go to step-7

Step 12 → End.

Program →

```
#include <stdio.h>
```

```
#include <graphics.h>
```

```
void drawline (int x0, int y0, int x1, int y1)
```

```
{
```

```
int dx, dy, P, x, y;
```

```
dx = x1 - x0;
```

```
dy = y1 - y0;
```

```
x = x0;
```

```
y = y0;
```

```
P = 2 * dx - dy;
```

```
while (x < x1)
```

```
{
```

```
if (P >= 0)
```

```
{
```

```
putpixel (x, y, 7);
```

```
y = y + 1;
```

```
P = P + 2 * dy - 2 * dx;
```

```
}
```

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else

{ putpixel(x, y, 7);

p = p + 2 * dy;

y

x = x + 1

}

}

int main()

{

int gd = DETECT, gm, x0, y0, x1, y1;

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

printf("Enter coordinates of first point:");

scanf("%d %d", &x0, &y0);

printf("Enter coordinates of second point:");

scanf("%d %d", &y1, &y1);

drawline(x0, y0, x1, y1);

return 0;

}

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Enter co-ordinates of first point: 100

100

Enter co-ordinates of second point: 200

200

