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Class Roll. No. - 43 Subject - Computer Graphics Lab

Subject Code - PBC 602 Section - C

Set - C

Q1 =) Algorithm

Step 1 :- Start

Step 2 :- Input two end points (x_0, y_0) and (x_1, y_1).

Step 3 :- Calculate dx, dy and slope m.

Step 4 :- If $m < 1$ then

initial parameter, $P_k = 2dy - dx$

otherwise ~~$P_k = 2dx - dy$~~ print slope not less than 1.

Step 5 :- If $P_k > 0$ then

$x_{new} = x_{old} + 1$

$y_{new} = y_{old} + 1$

$P_{k+1} = P_k + 2dy - 2dx$

If $P_k < 0$ then, $x_{new} = x_{old} + 1$, $y_{new} = y$

and $P_{k+1} = P_k + 2dy$.

Step 6 :- Step 5 will continue until number of iteration i become greater than dx.

Step 7 :- Stop.

Source Code :-

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

int main() {
    int i, xo, yo, x1, y1, dx, dy, P, x, y;
    printf(" Enter first end point :");
    scanf(" %d  %d", &xo, &yo);

    printf(" Enter second end point :");
    scanf(" %d %d", &x1, &x2);

    int gd = DETECT, gm;
    initgraph(&gd, &gm, " ");

            dx = x1 - xo;
            dy = y1 - yo;
            x = xo;
            y = yo;
        float m = dy / dx;
        if (m < 1)
            p = 2 * dy - dx;

        else
            printf(" slope not less than 1");
    i = 1;
    while (i <= dx)
        {
            putpixel(x, y, CYAN);
```

```c
if (p >= 0)
{
    x = x+1;
    y = y+1;
    p = p +2*dy - 2*dx ;
}

if (p < 0)
{
    x = x+1;
    p = p+ 2*dy;
}

i = i +1;
delay (50);
}
getch ();
closegraph();
return 0;
}
```