Lab5 : ScanLine Filling Algorithm

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**BRANCH:** SE Comps A Batch C

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**CODE:**

#include <stdio.h>

#include <conio.h>

#include <graphics.h>

void main()

{

int n, i, j, k, gd, gm, dy, dx;

int x, y, temp;

int a[20][2], xi[20];

float slope[20];

clrscr();

printf("\n\n\tEnter the no. of edges of polygon : ");

scanf("%d", &n);

printf("\n\n\tEnter the cordinates of polygon :\n\n\n ");

for (i = 0; i < n; i++)

{

printf("\tX%d Y%d : ", i, i);

scanf("%d %d", &a[i][0], &a[i][1]);

}

a[n][0] = a[0][0];

a[n][1] = a[0][1];

detectgraph(&gd, &gm);

initgraph(&gd, &gm, "c:\\tc\\bgi");

*/\*- draw polygon -\*/*

for (i = 0; i < n; i++)

{

line(a[i][0], a[i][1], a[i + 1][0], a[i + 1][1]);

}

getch();

for (i = 0; i < n; i++)

{

dy = a[i + 1][1] - a[i][1];

dx = a[i + 1][0] - a[i][0];

if (dy == 0)

slope[i] = 1.0;

if (dx == 0)

slope[i] = 0.0;

if ((dy != 0) && (dx != 0)) */\*- calculate inverse slope -\*/*

{

slope[i] = (float)dx / dy;

}

}

for (y = 0; y < 480; y++)

{

k = 0;

for (i = 0; i < n; i++)

{

if (((a[i][1] <= y) && (a[i + 1][1] > y)) ||

((a[i][1] > y) && (a[i + 1][1] <= y)))

{

xi[k] = (int)(a[i][0] + slope[i] \* (y - a[i][1]));

k++;

}

}

for (j = 0; j < k - 1; j++) */\*- Arrange x-intersections in order -\*/*

for (i = 0; i < k - 1; i++)

{

if (xi[i] > xi[i + 1])

{

temp = xi[i];

xi[i] = xi[i + 1];

xi[i + 1] = temp;

}

}

setcolor(35);

for (i = 0; i < k; i += 2)

{

line(xi[i], y, xi[i + 1] + 1, y);

}

}

getch();

}

**OUTPUT:**

