School: SCOPE Semester: WIN 2022-23

Subject: Computer Graphics (Lab) Subject Code: CSE2006

Assignment 6

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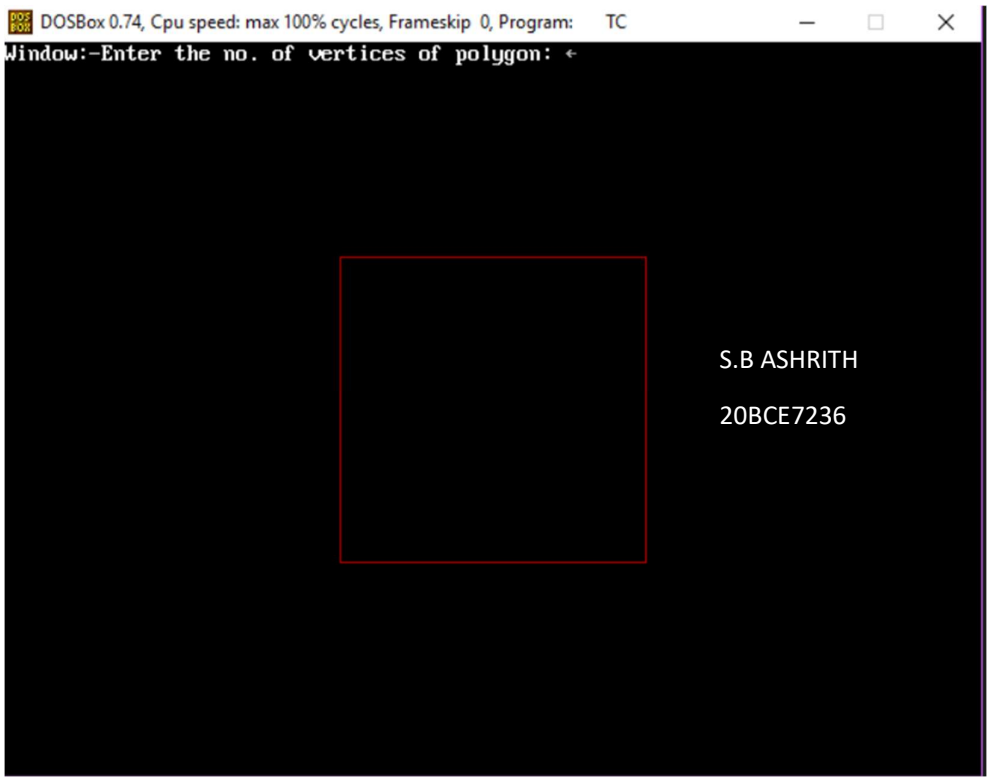
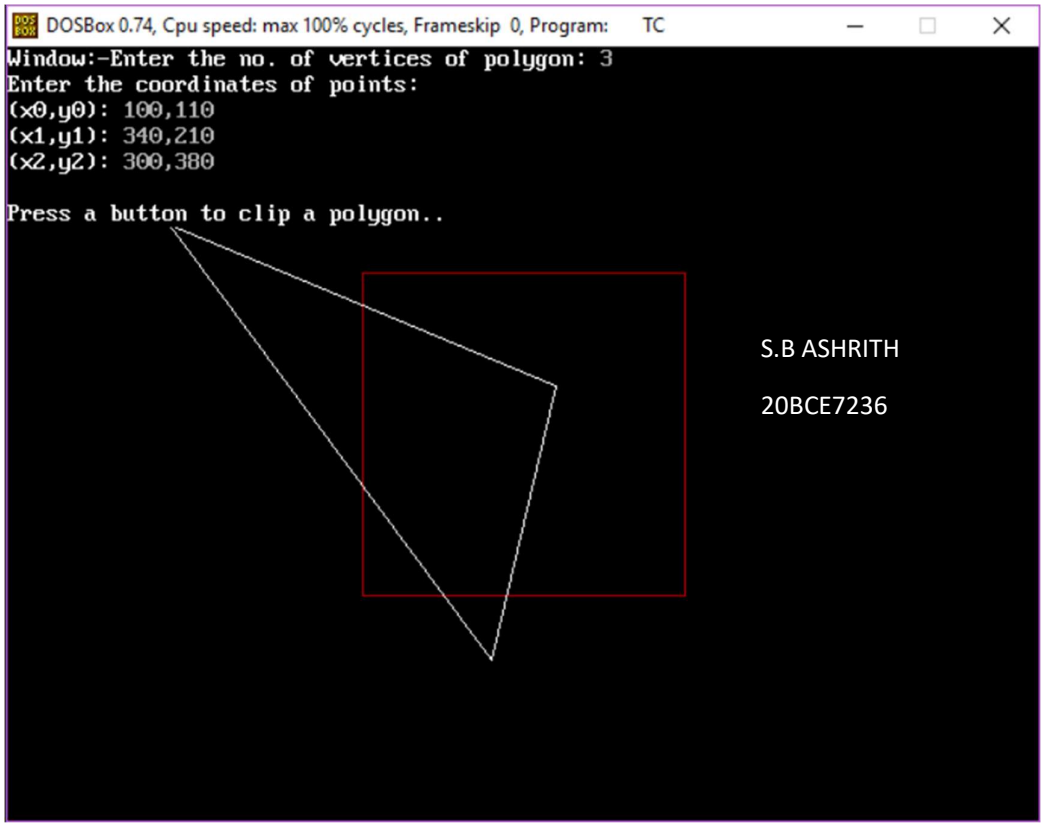
1. Write a program to implement Polygon Clipping Algorithm.

```
#include<stdio.h>
                    #include<graphics.h>
                    #include<conio.h>
                    #include<stdlib.h>
                    int main()
                    {
                            int gd,gm,n,*x,i,k=0;
                            //window coordinates int
                    wx1=220,wy1=140,wx2=420,wy2=140,wx3=420,wy3=340,wx4=220,wy4=340;
                            int w[]={220,140,420,140,420,340,220,340,220,140};//array
                    for drawing window
                            detectgraph(&gd,&gm);
                            initgraph(&gd,&gm,"c:\\turboc3\\bgi"); //initializing
                    graphics
                            printf("Window:-");
                            setcolor(RED); //red colored window
                            drawpoly(5,w); //window drawn
                            printf("Enter the no. of vertices of polygon: ");
                            scanf("%d",&n);
                            x = malloc(n*2+1);
                            printf("Enter the coordinates of points:\n");
                            k=0;
                            for(i=0;i<n*2;i+=2) //reading vertices of polygon
                            {
                                    printf("(x%d,y%d): ",k,k);
                                    scanf("%d,%d",&x[i],&x[i+1]);
                                    k++;
```

```
        }
        x[n*2]=x[0]; //assigning the coordinates of first vertex to
last additional vertex for drawpoly method.
        x[n*2+1]=x[1];
        setcolor(WHITE);
        drawpoly(n+1,x);
        printf("\nPress a button to clip a polygon..");
        getch();
        setcolor(RED);
        drawpoly(5,w);
        setfillstyle(SOLID_FILL,BLACK);
        floodfill(2,2,RED);
        gotoxy(1,1); //bringing cursor at starting position
        printf("\nThis is the clipped polygon..");
        getch();

        cleardevice();
        closegraph();
        return 0;
}
```




DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC
Window:-Enter the no. of vertices of polygon: 3
Enter the coordinates of points:
(x0,y0): 100,110
(x1,y1): 340,210
(x2,y2): 300,380
Press a button to clip a polygon..
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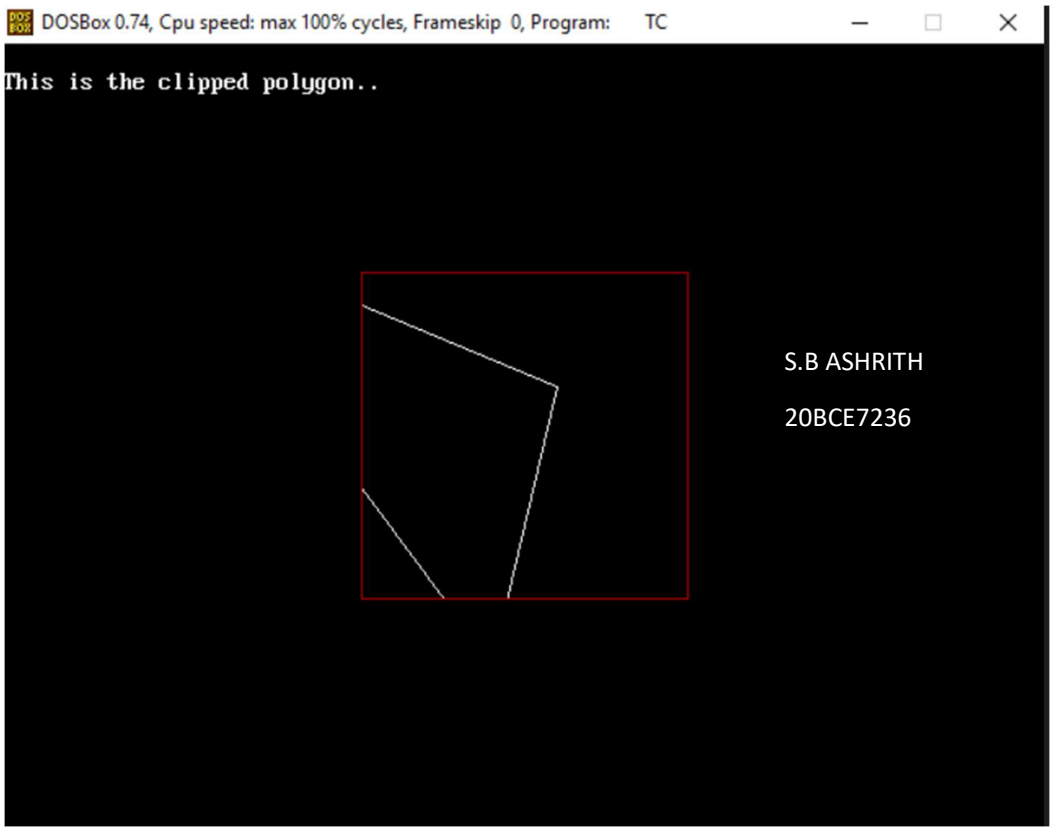
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC
This is the clipped polygon..
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Expected Output: