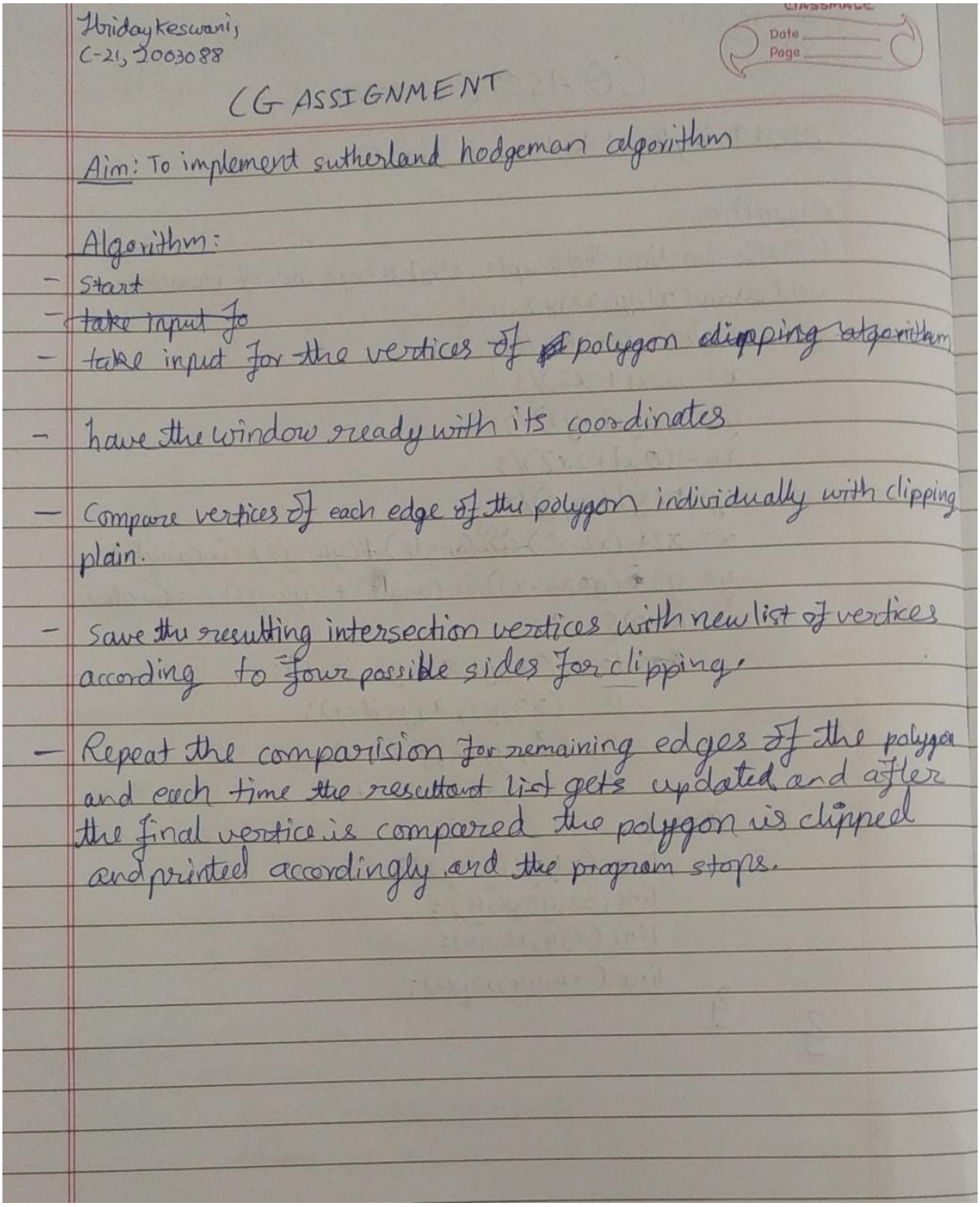
CG-Assignment
Polygon Clipping

Program:
Writing a program to implement Sutherland Hodgeman Polygon Clipping algorithm



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CG ASSIGNMENT

Aim: To implement sutherland hodgeman algorithm

Algorithm:

- Start
- ~~take input fo~~
- take input for the vertices of ~~a~~ polygon ~~clipping algorithm~~
- have the window ready with its coordinates
- Compare vertices of each edge of the polygon individually with clipping plain.
- Save the resulting intersection vertices with new list of vertices according to four possible sides for clipping.
- Repeat the comparision for remaining edges of the polygon and each time the resultant list gets updated and after the final vertice is compared the polygon is clipped and printed accordingly and the program stops.

Code:

```
#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 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..");
```

```
printf("\n\nHriday Keswani\n2003088\nC-21");
getch();
cleardevice();
closegraph();
return 0;
}
```

Output: