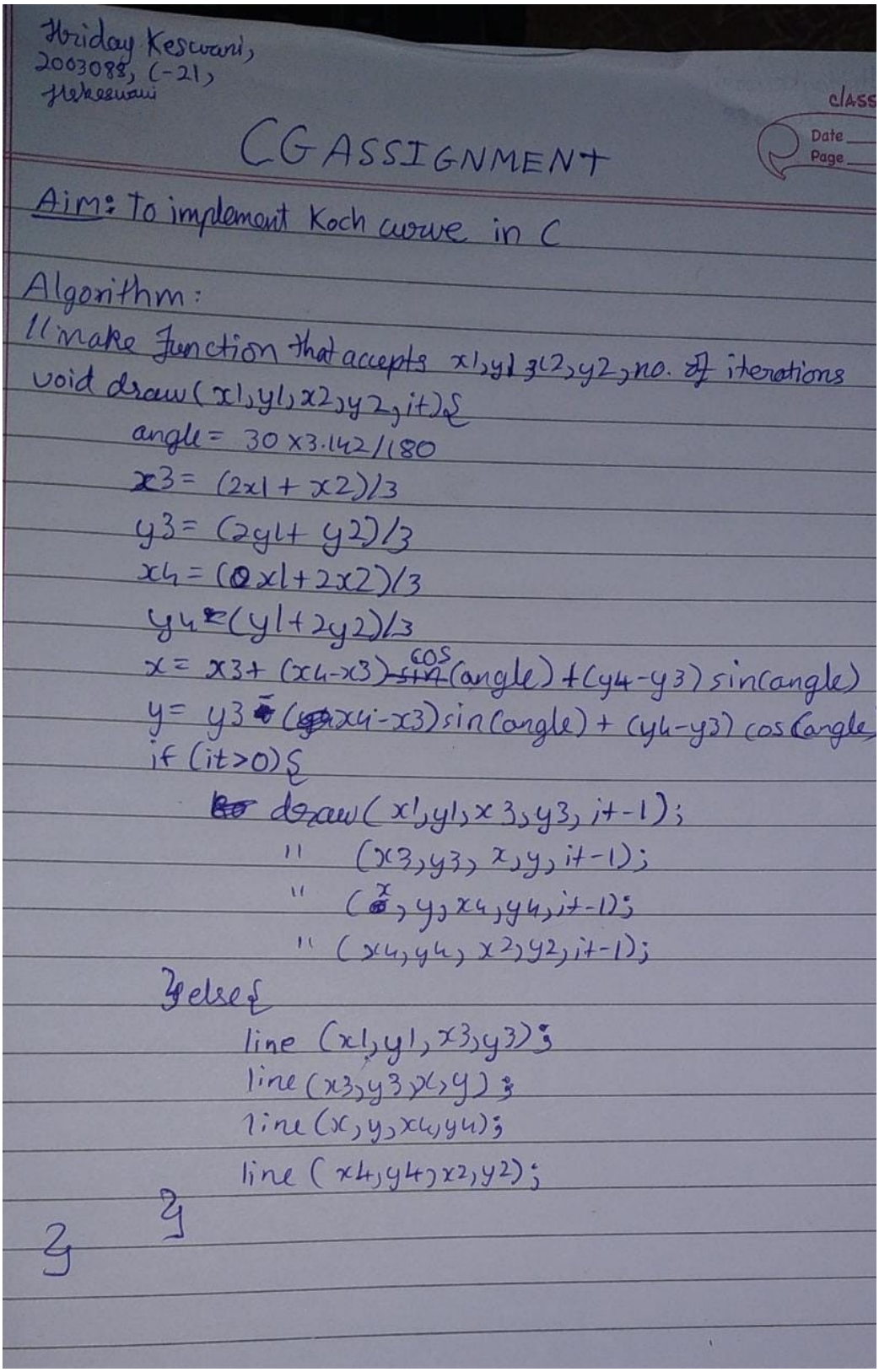
CG-Assignment
Koch Curve

Program:
Writing a program to print Koch Curve



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CG ASSIGNMENT

Aim: To implement Koch curve in C

Algorithm:

```
//make function that accepts x1,y1,x2,y2,no. of iterations
void draw(x1,y1,x2,y2,it){
    angle = 30 x 3.142/180
    x3 = (2x1 + x2)/3
    y3 = (2y1 + y2)/3
    x4 = (x1 + 2x2)/3
    y4 = (y1 + 2y2)/3
    x = x3 + (x4-x3) cos(angle) + (y4-y3) sin(angle)
    y = y3 - (x4-x3) sin(angle) + (y4-y3) cos(angle)
    if (it>0){
        draw(x1,y1,x3,y3,it-1);
        //   (x3,y3,x,y,it-1);
        //   (x,y,x4,y4,it-1);
        //   (x4,y4,x2,y2,it-1);
    }else{
        line(x1,y1,x3,y3);
        line(x3,y3,x,y);
        line(x,y,x4,y4);
        line(x4,y4,x2,y2);
    }
}
```

Code:

```
#include<stdio.h>
#include<graphics.h>
#include<math.h>
#include<conio.h>

void koch(int x1, int y1, int x2, int y2, int iteration)
{
     float angle = 60*M_PI/180;
     int x3 = (2*x1+x2)/3;
     int y3 = (2*y1+y2)/3;
     int x4 = (x1+2*x2)/3;
     int y4 = (y1+2*y2)/3;
     int x = x3 + (x4-x3)*cos(angle)+(y4-y3)*sin(angle);
     int y = y3 - (x4-x3)*sin(angle)+(y4-y3)*cos(angle);
if(iteration > 0)
{
     koch(x1, y1, x3, y3, iteration-1);
     koch(x3, y3, x, y, iteration-1);
     koch(x, y, x4, y4, iteration-1);
     koch(x4, y4, x2, y2, iteration-1);
}
else
{
     line(x1, y1, x3, y3);
     line(x3, y3, x, y);
     line(x, y, x4, y4);
     line(x4, y4, x2, y2);
}
}

void main(){
int gd = DETECT,gm;
int x1,y1,x2,y2;
initgraph(&gd,&gm,"c:\\turboc3\\bgi");
printf("Enter the starting and ending coordinates:\n");
scanf("%d%d%d%d",&x1,&y1,&x2,&y2);
koch(x1, y1, x2, y2, 3);
printf("\n\n\nHriday Keswani\nC-21\n2003088\n");
getch();
closegraph();
}
```

Output:


Enter the starting and ending coordinates:
100
100
300
300
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