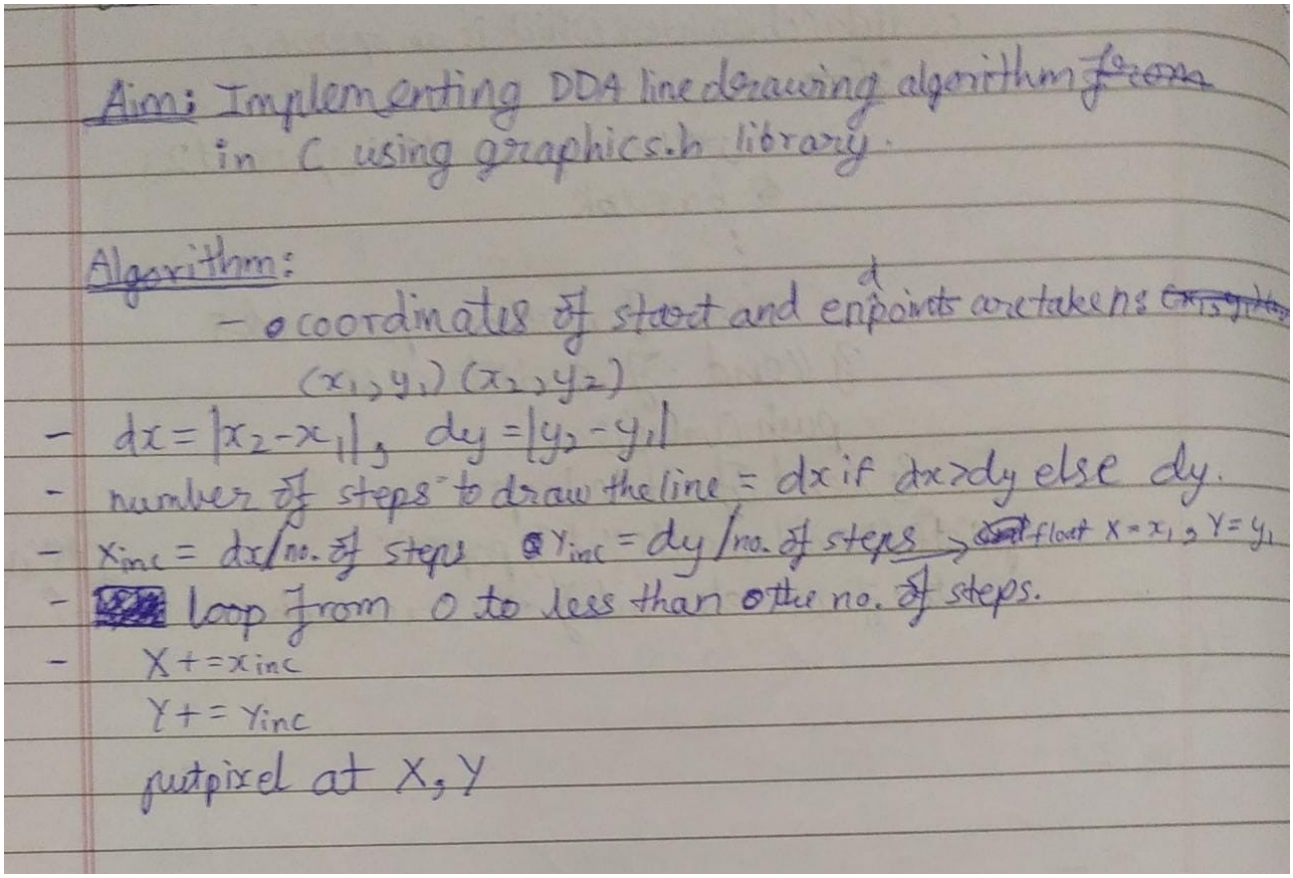
CG-Assignment
DDA Line Drawing



Program:
Drawing lines with DDA algorithm

Code:

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

int round(float x){
     return (int) x+0.5;
}

int abs(int x){
     int out;
     if(x>0)
          out=x;
     else
          out=x*(-1);
     return out;
}

void DDA(int x1, int y1, int x2, int y2){
```

```
     int dx,dy,steps,i;
     float X,Y,xi,yi;
     dx=x2-x1;
     dy=y2-y1;
     if(abs(dx)>abs(dy))
          steps=abs(dx);
     else
          steps=abs(dy);
     xi = dx/(float)steps;
     yi = dy/(float)steps;

     X=x1;
     Y=y1;

     for(i=0;i<steps;i++){
          X+=xi;
          Y+=yi;
          putpixel(round(X),round(Y),WHITE);
     }

}



void main()
{       int a,b,c,d;
     int gd = DETECT,gm;
     clrscr();
     initgraph(&gd,&gm,"C:\\turboc3\\bgi");
     printf("Enter the coordinates for start point\n");
     scanf("%d%d",&a,&b);
     printf("Enter the coordinates for the second point\n");
     scanf("%d%d",&c,&d);
     DDA(a,b,c,d);
     printf("Hriday Keswani\nRollno. 88\nC21");
     getch();
     closegraph();
}
```

Output:

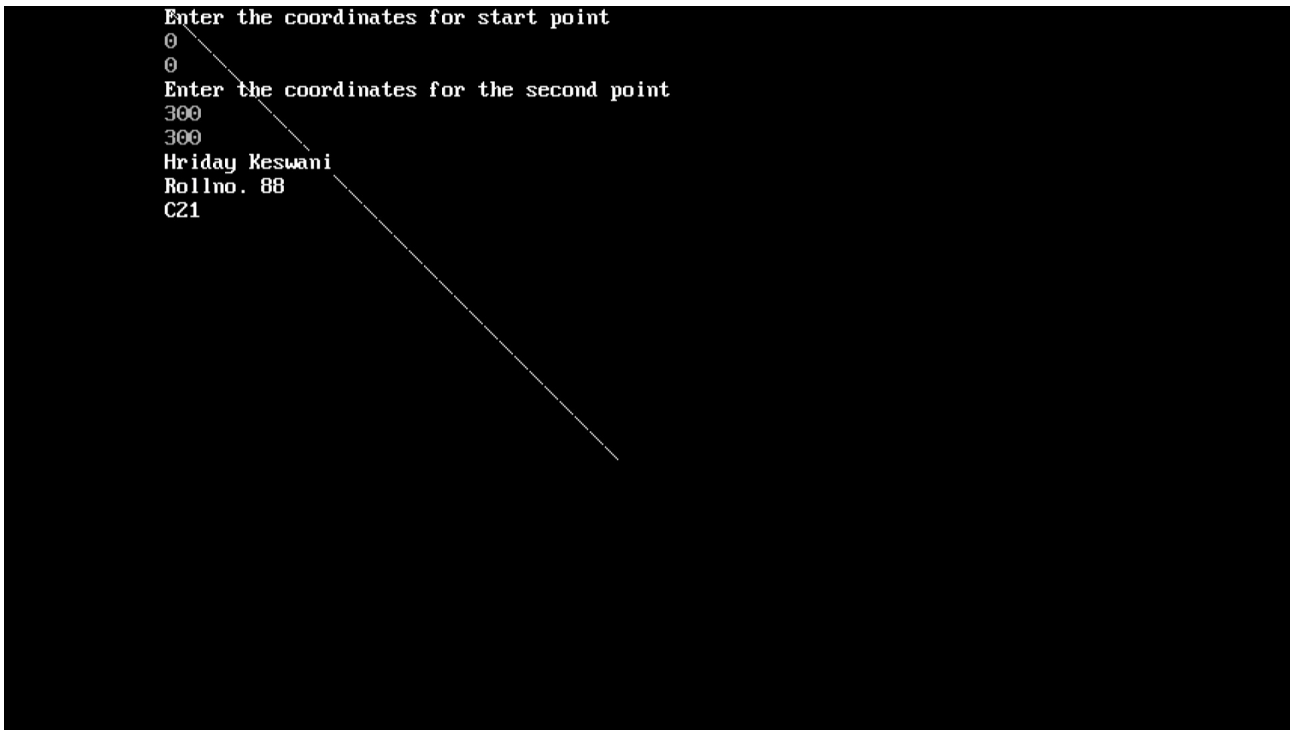
Program:
Drawing dashed lines with DDA algorithm

Code:

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

int round(float x){
     return (int) x+0.5;
}

int abs(int x){
     int out;
```

```
     if(x>0)
          out=x;
     else
          out=x*(-1);
     return out;
}

void DDA(int x1, int y1, int x2, int y2){
     int dx,dy,steps,i;
     float X,Y,xi,yi;
     dx=x2-x1;
     dy=y2-y1;
     if(abs(dx)>abs(dy))
          steps=abs(dx);
     else
          steps=abs(dy);
     xi = dx/(float)steps;
     yi = dy/(float)steps;

     X=x1;
     Y=y1;

     for(i=0;i<steps;i++){
          X+=xi;
          Y+=yi;
          if(i%4!=0)
               putpixel(round(X),round(Y),WHITE);
     }

}



void main()
{       int a,b,c,d;
     int gd = DETECT,gm;
     clrscr();
     initgraph(&gd,&gm,"C:\\turboc3\\bgi");
     printf("Enter the coordinates for start point\n");
     scanf("%d%d",&a,&b);
     printf("Enter the coordinates for the second point\n");
     scanf("%d%d",&c,&d);
     DDA(a,b,c,d);
     printf("Hriday Keswani\nRollno. 88\nC21");
     getch();
     closegraph();
}
```

Output:



Program:
Drawing dotted lines with DDA algorithm

Code:

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

int round(float x){
     return (int) x+0.5;
}
```

```
int abs(int x){
     int out;
     if(x>0)
          out=x;
     else
          out=x*(-1);
     return out;
}

void DDA(int x1, int y1, int x2, int y2){
     int dx,dy,steps,i;
     float X,Y,xi,yi;
     dx=x2-x1;
     dy=y2-y1;
     if(abs(dx)>abs(dy))
          steps=abs(dx);
     else
          steps=abs(dy);
     xi = dx/(float)steps;
     yi = dy/(float)steps;

     X=x1;
     Y=y1;

     for(i=0;i<steps;i++){
          X+=xi;
          Y+=yi;
          if(i%2!=0)
               putpixel(round(X),round(Y),WHITE);
     }

}



void main()
{       int a,b,c,d;
     int gd = DETECT,gm;
     clrscr();
     initgraph(&gd,&gm,"C:\\turboc3\\bgi");
     printf("Enter the coordinates for start point\n");
     scanf("%d%d",&a,&b);
     printf("Enter the coordinates for the second point\n");
     scanf("%d%d",&c,&d);
     DDA(a,b,c,d);
     printf("Hriday Keswani\nRollno. 88\nC21");
     getch();
     closegraph();
}
```

Output:


Enter the coordinates for start point
0
0
Enter the coordinates for the second point
300
300
Hriday Keswani
Rollno. 88
C21