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Lab number: 01

   Problem Statement :- Write a program to implement DDA line drawing algorithm in C. Using the DDA line drawing algorithm as a function, draw a square, cube, and a cylinder. Divide the output screen into 3 parts, and display the geometric figures in such a way that all edges appear either dotted or dashed or thick (---------- or   or_____).

Program Code :-
```c
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
#include<math.h>
#include<stdlib.h>
void drawline(int x1, int y1, int x2 , int y2)
{
int i=1,x,y,dx,dy,steps;
if(abs(x2-x1)>=abs(y2-y1))
steps=abs(x2-x1);
else
steps=abs(y2-y1);

dx=(x2-x1)/(float)steps;
dy=(y2-y1)/(float)steps;

x=x1;
y=y1;
while(i<=steps)
{
 if(i%4!=0)
      {
        putpixel(x,y,WHITE);}
        x=x+dx;
        y=y+dy;
        i++;


}
}
void main()
{
        int gd=DETECT,gm;
        initgraph(&gd,&gm,"C:\\TURBOC3\\BGI");
        drawline(320,0,320,240);
        drawline(0,240,640,480);


        drawline(100,60,220,60);
        drawline(220,60,220,180);
        drawline(100,60,100,180);
```

```
        drawline(100,180,220,180);

        drawline(340,60,460,60);
        drawline(460,60,460,180);
        drawline(340,60,340,180);
        drawline(340,180,460,180);
        drawline(380,40,500,40);
        drawline(500,40,500,160);
        drawline(380,40,380,160);
        drawline(380,160,500,160);
        line(340,60,380,40);
        line(340,180,380,160);
        line(460,180,500,160);
        line(460,60,500,40);

        ellipse(160,300,0,360,60,25);
        ellipse(160,400,0,360,60,25);
        drawline(100,300,100,400);
        drawline(220,300,220,400);
        getch();
        closegraph();

}


Output :-
```
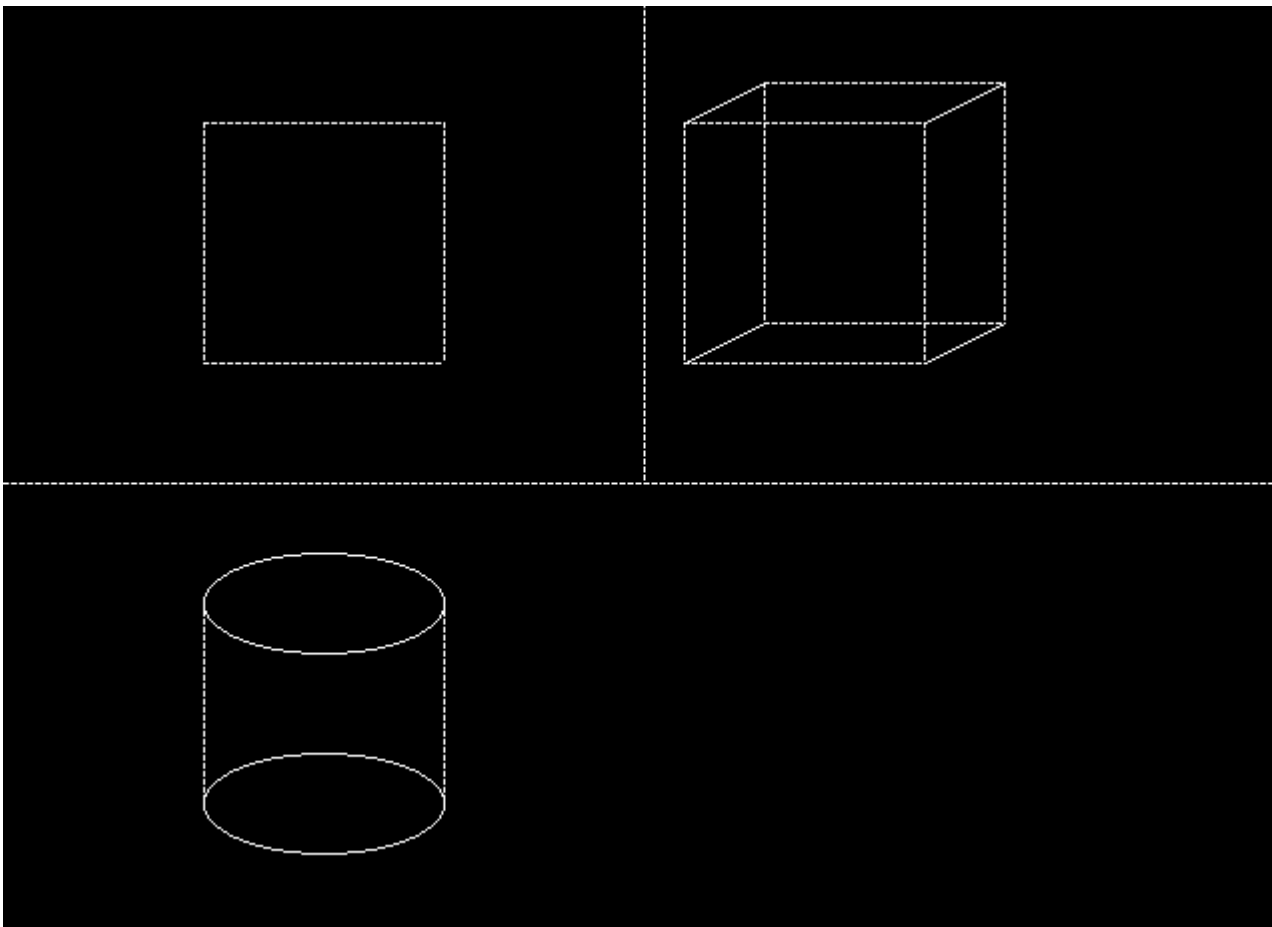
Conclusion :-

Computer graphics is a diverse field. Studying primitives' shapes and figures is a preliminary step to be achieved for understanding complex graphical structures. In this experiment, we study an important technique to display a line on the screen using DDA Algorithm