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Practical No. 1

_____ Perform 2D translation of a triangle.

PROGRAM:-

```
 #include<stdio.h>
#include<conio.h>
#include<graphics.h
> void main()
{
```

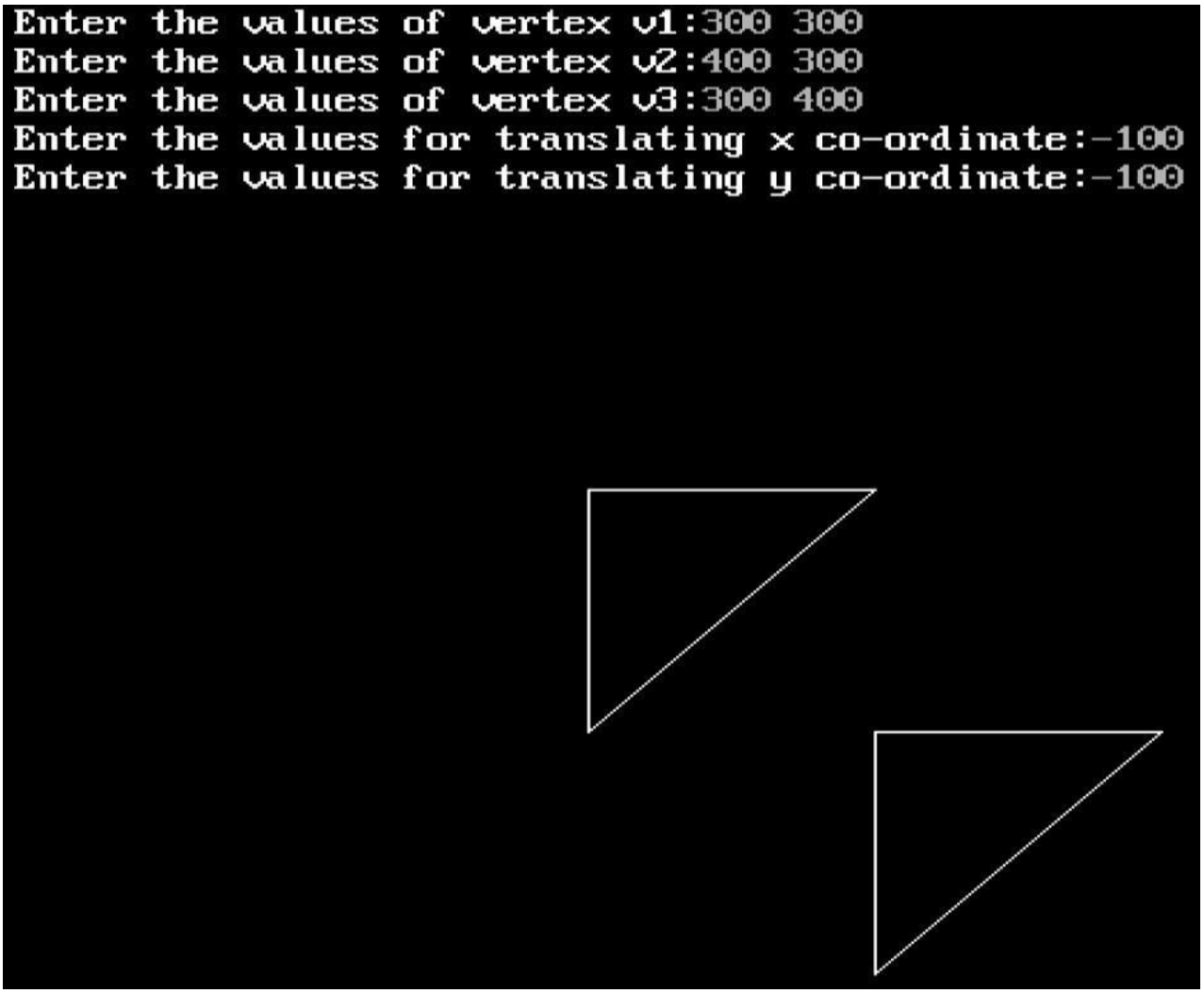
:

Aim:-

```
        int x1,x2,x3,y1,y2,y3,xt,yt;        int
gd=DETECT, gm=DETECT;
initgraph(&gd,&gm,
"C:\\TURBOC3\\BGI");            printf("Enter the
values of vertex v1:");   scanf("%d %d",&x1,&y1);
printf("Enter the values of vertex v2:");   scanf("%d
%d",&x2,&y2);            printf("Enter the values of
vertex v3:");   scanf("%d %d",&x3,&y3);
line(x1,y1,x2,y2);   line(x2,y2,x3,y3);
line(x1,y1,x3,y3);   printf("Enter the values for
translating x co-ordinate:");
        scanf("%d",&xt);
        printf("Enter the values for translating y co-ordinate:");
scanf("%d",&yt)

        line(x1+xt,y1+yt,x2+xt,y2+yt);
 line(x2+xt,y2+yt,x3+xt,y3+yt);
line(x1+xt,y1+yt,x3+xt,y3+yt);
        getch();
 closegraph();
}
```

OUTPUT:-



Practical No. 2

Perform 2D scaling of a triangle.

PROGRAM:-

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

#include<graphics.h

> void main()

{

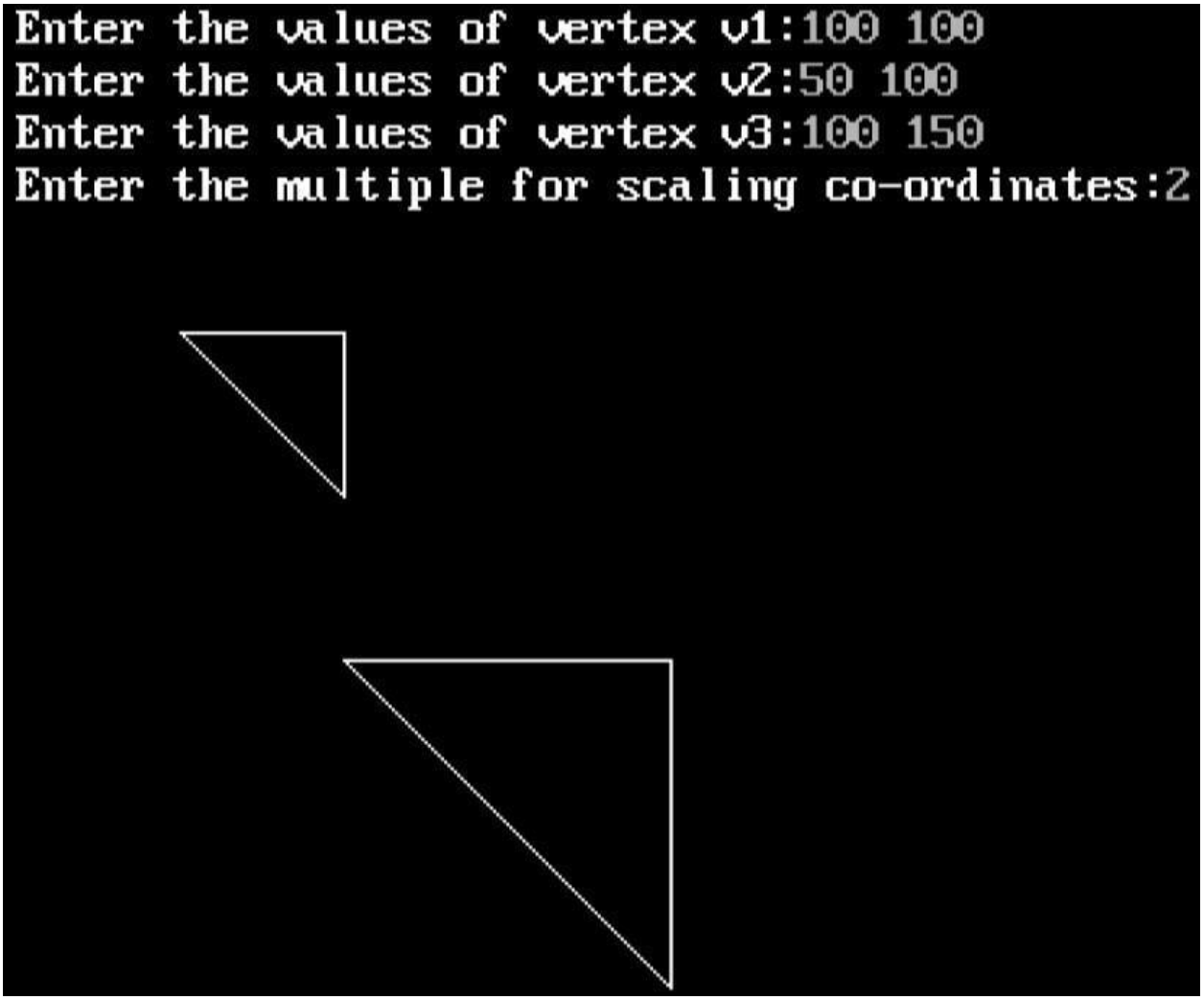
:

Aim:-

```
        int x1,x2,x3,y1,y2,y3,t;            int
gd=DETECT, gm=DETECT;
initgraph(&gd,&gm,
"C:\\TURBOC3\\BGI");
 printf("Enter the values of vertex v1:");   scanf("%d
%d",&x1,&y1);            printf("Enter the values of
vertex v2:");   scanf("%d %d",&x2,&y2);
printf("Enter the values of vertex v3:");   scanf("%d
%d",&x3,&y3);            line(x1,y1,x2,y2);
line(x2,y2,x3,y3);          line(x1,y1,x3,y3);
printf("Enter the multiple for scaling co-ordinates:");
        scanf("%d",&t);
 line(x1*t,y1*t,x2*t,y2*t);
line(x2*t,y2*t,x3*t,y3*t);
line(x1*t,y1*t,x3*t,y3*t);          getch();

 closegraph();
}
```

OUTPUT:-



Practical No. 3

Perform 2D Rotation of a line.

PROGRAM:-

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

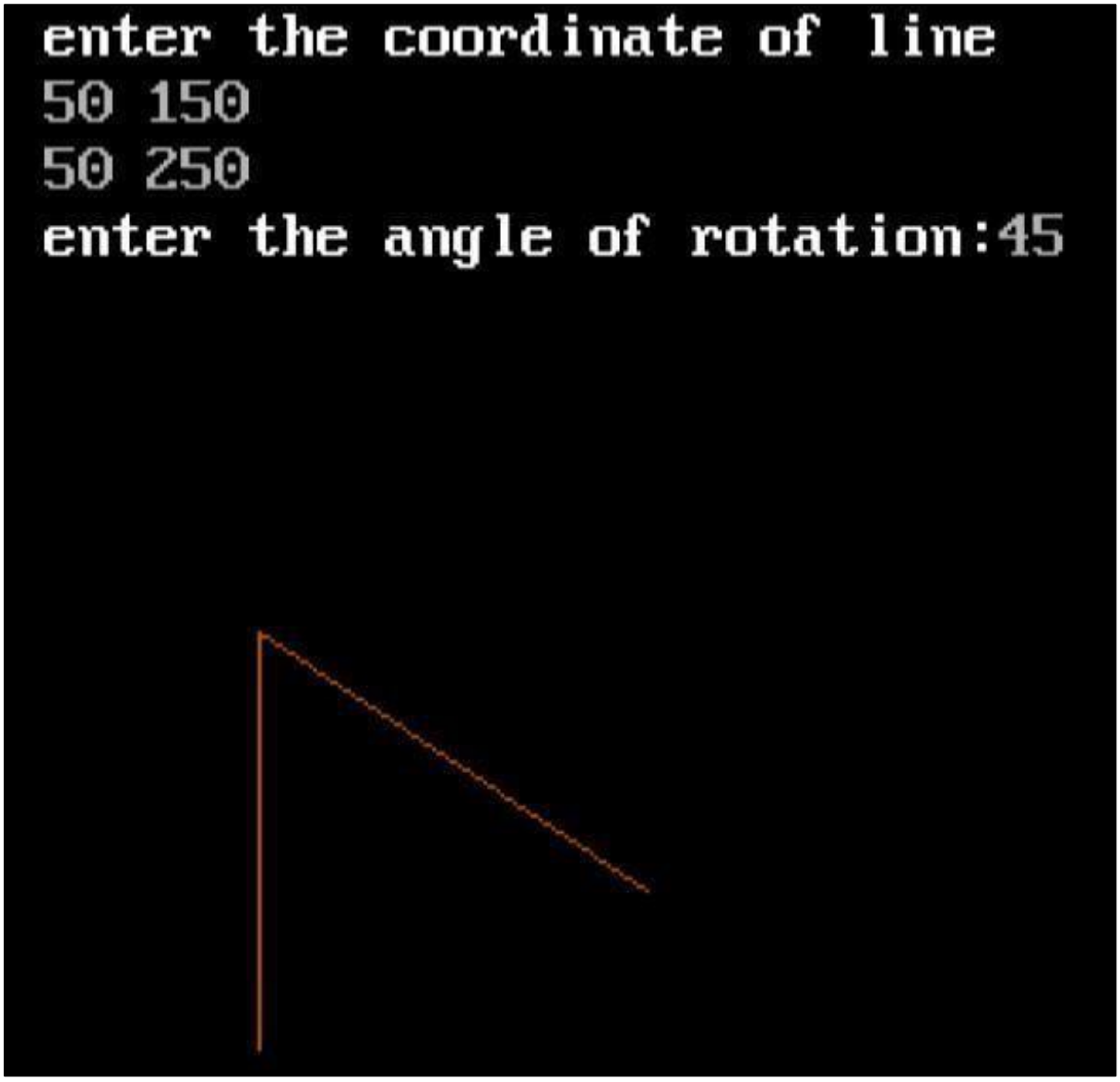
:

Aim:-

```
#include<math.h
> void main()
{
int gd=DETECT,gm; int
x1,y1,x2,y2; float b1,b2; float t,deg;
initgraph(&gd,&gm,"c:\\tc\\bgi");
printf("enter the coordinate of line
\n");
scanf("%d%d%d%d",&x1,&y1,&
x2,&y2);  setcolor(6);
line(x1,y1,x2,y2); getch();
printf("enter the angle of
rotation:");
scanf("%f",&deg);
t=(22*deg)/(180*7);
b1=abs((x2*cos(t))(y2*sin(t)));
b2=abs((x2*sin(t))+(y2*cos(t))
); line(x1,y1,b1,b2);
getch(); closegraph();
}
```

Output :

-


enter the coordinate of line
50 150
50 250
enter the angle of rotation:45

Aim:-

Practical No. : 4

Write a program to perform for 2D reflection.

PROGRAM:-

```
#include<stdio.h>
#include<conio.h>
#include<graphic
s.h>
#include<stdlib.h
> void main()
{  int
gd=DETECT,gm;
int
x1,y1,x2,y2,x3,y3
,ref; clrscr();
initgraph(&gd,&gm,"C:\\TC\\bgi"); printf("\n enter
the coordinates of triangle:\n");
scanf("%d%d%d%d%d%d",&x1,&y1,&x2,&y2,
&x3,&y3);
line(x1,y1,x2,y2); line(x2,y2,x3,y3); line(x3,y3,x1,y1);
line(320,0,320,460); line(0,230,640,230); printf("\n enter 1 for rotating
about x axis & 2 for rotating about y axis:\n"); scanf("%d",&ref);
if(ref==1)
{
```

```
        if(y1>230)
{       x1=x1;
        x2=x2;
                x3=x3;
                y1=y1-230;
                y2=y2-230;
                y3=y3-230;
        }
        else
        {       x1=x1;
                x2=x2;
                x3=x3;
                y1=y1+230;
                y2=y2+230;
                y3=y3+230;
        }
}  if(ref==2)
{
        if(x1>320)
                {
        x1=x1;
x2=x2;          x3=x3;
        x1=x1-320;
x2=x2-320;      x3=x3-
320;

}
```

```
        else    {
y1=y1;          y2=y2;

 y3=y3;
 x1=x1+320;
x2=x2+320;
x3=x3+320;
        }
}  printf("\n triangle after
reflection"); line(x1,y1,x2,y2);
line(x2,y2,x3,y3);
line(x3,y3,x1,y1); getch();
closegraph();
}
}
```

OUTPUT:-