Experiment No 6

Translation

```
Source Code:
```

```
#include<stdio.h>
                                               y1=a[i][1];
#include<conio.h>
                                               x2=a[i+1][0];
#include<graphics.h>
                                               y2=a[i+1][1];
#include<dos.h>
                                               line(x1,y1,x2,y2);
void main()
{
                                               printf("enter translating factor\n");
                                               scanf("%d%d",&tx,&ty);
int
gd=DETECT,gm,i,n,a[10][2],b[10][
                                               for(i=0;i< n;i++)
2],x1,y1,x2,y2,tx,ty;
clrscr();
                                               b[i][0]=a[i][0]+tx;
initgraph(&gd,&gm,"C:\\TurboC3\\
                                               b[i][1]=a[i][1]+ty;
BGI");
printf("enter no of edges\n");
                                               b[i][0]=a[i][0]+tx;
scanf("%d",&n);
                                               b[i][1]=a[i][1]+ty;
printf("enter the values\n");
                                               for(i=0;i< n;i++)
for(i=0;i< n;i++)
                                               x1=b[i][0];
printf("For a[%d][0], a[%d][1]",i,i);
                                               y1=b[i][1];
scanf("%d%d",&a[i][0],&a[i][1]);
                                               x2=b[i+1][0];
                                               y2=b[i+1][1];
}
a[i][0]=a[0][0];
                                               line(x1,y1,x2,y2);
a[i][1]=a[0][1];
for(i=0;i< n;i++)
                                               getch();
x1=a[i][0];
```

```
enter no of edges
6
enter the values
For a[0][0], a[0][1]250 50
For a[1][0], a[1][1]300 50
For a[2][0], a[2][1]300 100
For a[3][0], a[3][1]400 100
For a[4][0], a[4][1]400 150
For a[5][0], a[5][1]250 150
enter translating factor
200 50
```

Scaling

Source Code:

```
#include<stdio.h>
                                               y1=a[i][1];
#include<conio.h>
                                               x2=a[i+1][0];
#include<graphics.h>
                                               y2=a[i+1][1];
#include<dos.h>
                                               line(x1,y1,x2,y2);
void main()
                                               printf("enter scaling factor\n");
{
                                               scanf("%d%d",&sx,&sy);
int
gd=DETECT,gm,i,n,a[10][2],b[10][
                                               for(i=0;i< n;i++)
2],x1,y1,x2,y2,sx,sy;
clrscr();
                                               b[i][0]=a[i][0]*sx;
                                               b[i][1]=a[i][1]*sy;
initgraph(&gd,&gm,"C:\\TurboC3\\
BGI");
printf("enter no of edges\n");
                                               b[i][0]=a[i][0]*sx;
                                               b[i][1]=a[i][1]*sy;
scanf("%d",&n);
printf("enter the values\n");
                                               for(i=0;i< n;i++)
for(i=0;i< n;i++)
                                               x1=b[i][0];
{
printf("For a[%d][0], a[%d][1]",i);
                                               y1=b[i][1];
scanf("%d%d",&a[i][0],&a[i][1]);
                                               x2=b[i+1][0];
                                               y2=b[i+1][1];
a[i][0]=a[0][0];
                                               line(x1,y1,x2,y2);
a[i][1]=a[0][1];
for(i=0;i< n;i++)
                                               getch();
x1=a[i][0];
```

```
enter no of edges

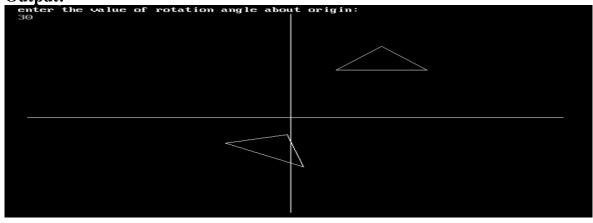
6
    enter the values
    For a[0][0], a[3026][1]250 50
    For a[1][0], a[3026][1]250 100
    For a[3][0], a[3026][1]300 100
    For a[4][0], a[3026][1]300 150
    For a[5][0], a[3026][1]200 150
    enter scaling factor

2
2
```

Rotation

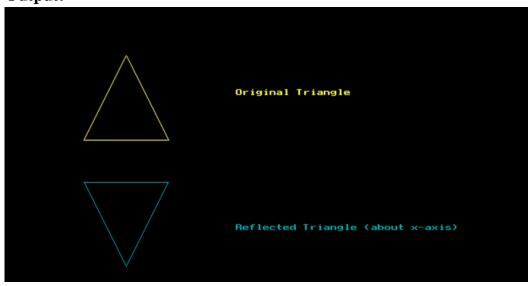
Source Code:

```
#include<stdio.h>
                                                   y1=a[i][1];
#include<conio.h>
                                                   x2 = a[i+1][0];
#include<graphics.h>
                                                   y2=a[i+1][1];
#include<dos.h>
                                                   line(x1,y1,x2,y2);
#include<math.h>
                                                   printf("enter the value of rotation angle
void main()
                                                   about origin:\n");
                                                   scanf("%d",&tita);
int
                                                   for(i=0;i< n;i++)
gd=DETECT,gm,a[20][2],b[20][2],n,i,ti
ta,x1,y1,x2,y2;
float ta;
                                                   x1=a[i][0];
clrscr();
                                                   y1=a[i][1];
initgraph(&gd,&gm,"C:\\TurboC3\\BGI
                                                   x2 = a[i+1][0];
                                                   y2 = a[i+1][1];
printf("enter the no of edges\n");
                                                   line(x1,y1,x2,y2);
scanf("%d",&n);
printf("enter the co-ordinates\n");
                                                   ta=tita*(3.142/180);
for(i=0;i< n;i++)
                                                    for(i=0;i< n;i++)
printf("enter value for array-position
                                                   b[i][0]=a[i][0]*cos(ta)-a[i][1]*sin(ta);
a[i][0],a[i][1]:\n");
                                                   b[i][1]=a[i][0]*sin(ta)+a[i][1]*cos(ta);
scanf("%d%d",&a[i][0],&a[i][1]);
                                                   b[i][0]=b[0][0];
a[i][0]=a[0][0];
                                                   b[i][1]=b[0][1];
a[i][1]=a[0][1];
                                                   for(i=0;i< n;i++)
getch();
detectgraph(&gd,&gm);
                                                   x1=b[i][0];
initgraph(&gd,&gm,"C:\\TurboC3\\BGI
                                                   y1=b[i][1];
");
                                                   x2=b[i+1][0];
line(300,10,300,450);
                                                   y2=b[i+1][1];
line(10,250,600,250);
                                                   line(x1,y1,x2,y2);
putpixel(220,250,WHITE);
for(i=0;i< n;i++)
                                                   getch();
x1=a[i][0];
```



Reflection

```
Source Code:
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
#include<math.h>
#include<dos.h>
void main()
{ int gd=DETECT,gm;
int x1=100, x2=150, x3=200, y1=200, y2=100, y3=200,xt;
clrscr();
initgraph(&gd,&gm,"C:\\TurboC3\\BGI");
setcolor(YELLOW);
line(x1,y1,x2,y2);
line(x2,y2,x3,y3);
line(x3,y3,x1,y1);
outtextxy(280,140,"Original Triangle");
setcolor(CYAN);
line(x1,-y1+450,x2,-y2+450);
ine(x2,-y2+450,x3,-y3+450);
line(x3,-y3+450,x1,-y1+450);
outtextxy(280,300,"Reflected Triangle (about x-axis)");
getch();
closegraph();
 }
```



Shearing

Source Code:

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
#include<dos.h>
#include<math.h>
void main() {
int
gd,gm,a[20][2],b[20][2],n,i,shx,shy,x1,
y1,x2,y2,c;
clrscr();
detectgraph(&gd,&gm);
initgraph(&gd,&gm,"c:\\turboc4\\tc\\bgi
");
printf("enter the no of edges\n");
scanf("%d",&n);
printf("enter the co-ordinates\n");
for(i=0;i< n;i++) {
printf("enter value for array-position
a[i][0],a[i][1]:\n");
scanf("%d%d",&a[i][0],&a[i][1]); }
a[i][0]=a[0][0];
a[i][1]=a[0][1];
getch();
detectgraph(&gd,&gm);
initgraph(&gd,&gm,"c:\\turboc4\\tc\\bgi
");
line(290,10,290,450);
line(10,250,600,250);
putpixel(220,250,WHITE);
for(i=0;i< n;i++) {
x1=a[i][0];
y1=a[i][1];
x2 = a[i+1][0];
y2=a[i+1][1];
line(x1,y1,x2,y2); }
printf("enter about which axis you want
shearing:\n1.X-AXIS.\n2.Y-AXIS.\n");
scanf("%d",&c);
switch(c) {
case 1:
```

```
printf("enter the shearing distance:\n");
scanf("%d",&shx);
for(i=0;i< n;i++) {
x1=a[i][0]+shx*a[i][1];
y1=a[i][1];
x2 = a[i+1][0] + shx*a[i+1][1];
y2 = a[i+1][1];
line(x1,y1,x2,y2); }
break;
case 2:
printf("enter the shearing distance:\n");
scanf("%d",&shy);
for(i=0;i<n;i++) {
x1=a[i][0];
y1=a[i][1]+shy*a[i][0];
x2 = a[i+1][0];
y2 = a[i+1][1] + shy*a[i+1][0];
line(x1,y1,x2,y2); }
break;
default:
printf("not valid.\n"); }
getch(); }
```

