

```

1  #include "graphics.h"
2  #include <conio.h>
3  #include <math.h>
4  #include <stdlib.h>
5  int x1i,x2i,y1i,y2i;
6  void translate()
7  {
8      int t1,t2,x1,x2,y1,y2;
9      printf("Enter the translation distances for x and y respectively\n");
10     scanf("%d%d",&t1,&t2);
11     cleardevice();
12     setcolor(15);
13     outtextxy(300,100,"TRANSLATION");
14     x1=x1i+t1;
15     x2=x2i+t1;
16     y1=y1i+t2;
17     y2=y2i+t2;
18
19
20     line(x1,y1,x2,y2);
21     setcolor(1);
22     line(x1i,y1i,x2i,y2i);
23     getch();
24 }
25
26 void scale()
27 {
28     float s1,s2;
29     int xs1,xs2,ys1,ys2;
30     printf("Enter the scaling factor for x and y respectively\n");
31     scanf("%f%f",&s1,&s2);
32     cleardevice();
33     setcolor(15);
34     outtextxy(300,100,"SCALING");
35     xs1=x1i*s1;
36     xs2=x2i*s1;
37     ys1=y1i*s2;
38     ys2=y2i*s2;
39
40     line(xs1,ys1,xs2,ys2);
41     setcolor(1);
42     line(x1i,y1i,x2i,y2i);
43     getch();
44 }
45
46 void rotation()
47 {
48     int r,xr1,xr2,yr1,yr2;
49     float rd;
50     printf("\nEnter the angle of rotation\n");
51     scanf("%d",&r);
52     cleardevice();
53     setcolor(15);
54     outtextxy(300,100,"ROTATION");
55     rd=(r*3.14)/180;
56     xr1=abs(x1i*cos(rd)-y1i*sin(rd));
57     xr2=abs(x2i*cos(rd)-y2i*sin(rd));
58     yr1=abs(y1i*cos(rd)+x1i*sin(rd));
59     yr2=abs(y2i*cos(rd)+x2i*sin(rd));
60     line(xr1,yr1,xr2,yr2);
61     setcolor(1);
62     line(x1i,y1i,x2i,y2i);
63     getch();
64 }
65
66 void shear()
67 {
68     float s;int xs1,xs2,ys1,ys2;
69     printf("\nEnter the value for shearing\n");
70     scanf("%f",&s);
71     cleardevice();
72     setcolor(15);
73     outtextxy(300,100,"SHEARING");
74     xs1=abs(x1i+s*y1i);
75     xs2=abs(x2i+s*y2i);
76     ys1=y1i;
77     ys2=y2i;
78     line(xs1,ys1,xs2,ys2);
79     setcolor(1);
80     line(x1i,y1i,x2i,y2i);
81     getch();
82 }
83
84 void reflection()

```

```

85  {
86      int xrl,xr2,yrl,yr2;
87      cleardevice();
88      setcolor(15);
89      outtextxy(300,100,"REFLECTION");
90
91      xrl=x2i+(x2i-x1i);
92      xr2=x2i;
93      yrl=y1i;
94      yr2=y2i;
95
96      line(xrl,yrl,xr2,yr2);
97      setcolor(1);
98      line(x1i,y1i,x2i,y2i);
99      getch();
100
101  }
102
103
104  int main()
105  {
106      int gm;
107
108      int gd=DETECT;
109      int x1,x2,x3,y1,y2,y3,nx1,nx2,nx3,ny1,ny2,ny3,c;
110      int sx,sy,xt,yt,r;
111      float t;
112      initgraph(&gd,&gm,"c:\\tc\\bg:");
113      printf("\n\t Enter the points of line\n");
114      setcolor(1);
115      scanf("%d%d%d%d",&x1i,&y1i,&x2i,&y2i);
116      line(x1i,y1i,x2i,y2i);
117      outtextxy(300,100,"ORIGINAL");
118      getch();
119      printf("\n1.Transaction\n2.Scaling\n3.Rotation\n4.Shearing\n5.Reflection\n");
120      printf("Enter your choice:\n");
121      scanf("%d",&c);
122
123
124      switch(c)
125      {
126      case 1:
127          {
128              translate();
129              break;}
130      case 2:
131          {scale();
132              break;}
133      case 3:
134          {rotation();
135              break;}
136      case 4:
137          {shear();
138              break;}
139      case 5:
140          {reflection();
141              break;}
142      default:
143          {printf("Invalid choice");break;}
144
145      }
146
147      closegraph();
148      restorecrtmode();
149      return 0;
150  }
151

```

"C:\Users\user\Desktop\SHREYAS\SEM II\Transformatio.exe"



Enter the points of line

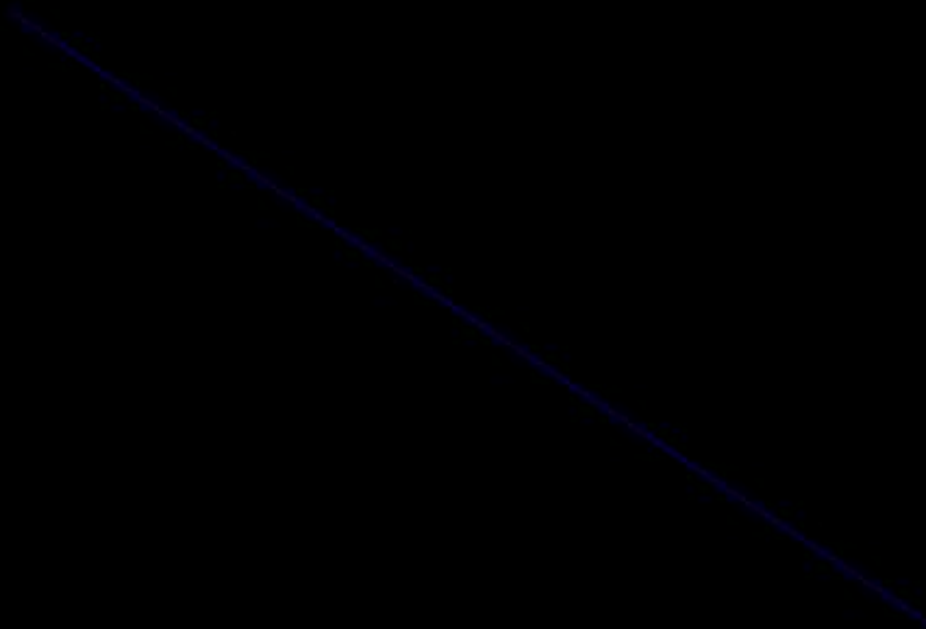
100 200  
300 300



Windows BGI



ORIGINAL



"C:\Users\user\Desktop\SHREYAS\SEM II\Transformatio.exe"

Enter the points of line

100 200  
300 300

- 1.Transaction
- 2.Scaling
- 3.Rotation
- 4.Shearing
- 5.Reflection

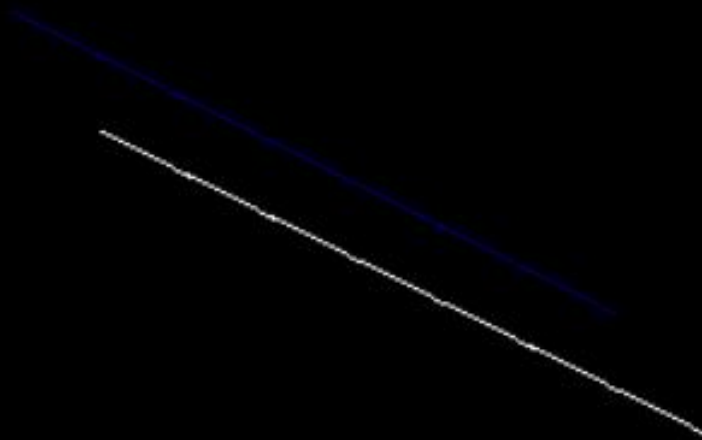
Enter your choice:

1

Enter the translation distances for x and y respectively

30 40

TRANSLATION



"C:\Users\user\Desktop\SHREYAS\SEM II\Transformatio.exe"

Enter the points of line

100 200  
400 400

- 1.Transaction
- 2.Scaling
- 3.Rotation
- 4.Shearing
- 5.Reflection

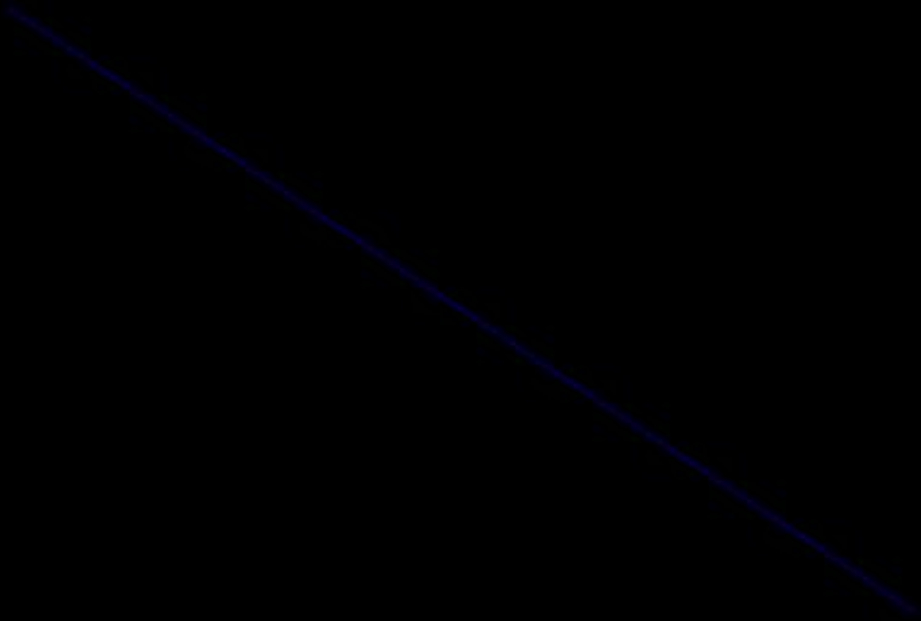
Enter your choice:

2

Enter the scaling factor for x and y respectively

0.25 0.25

SCALING





"C:\Users\user\Desktop\SHREYAS\SEM II\Transformatio.exe"

Enter the points of line

100 200  
400 400

- 1.Transaction
- 2.Scaling
- 3.Rotation
- 4.Shearing
- 5.Reflection

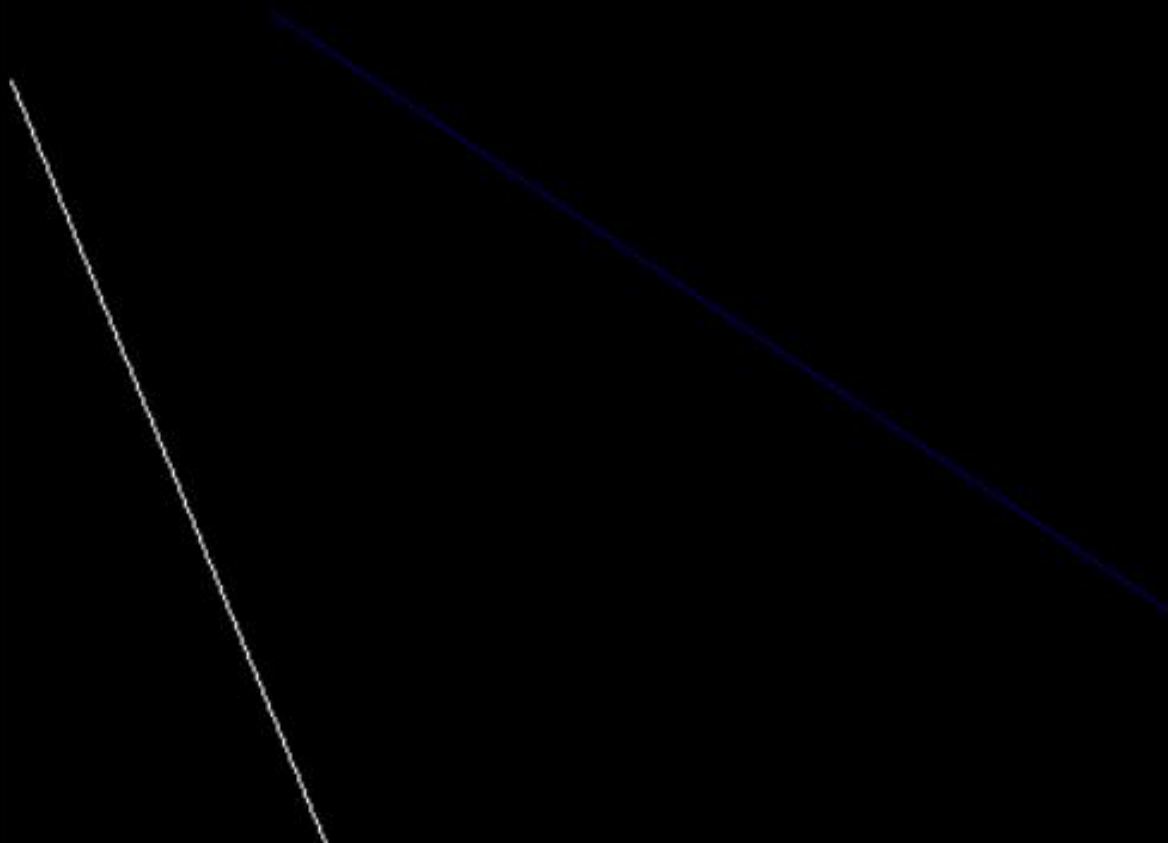
Enter your choice:

3

Enter the angle of rotation

30

ROTATION



"C:\Users\user\Desktop\SHREYAS\SEM II\Transformatio.exe"

Enter the points of line

100 200

300 300

1.Transaction

2.Scaling

3.Rotation

4.Shearing

5.Reflection

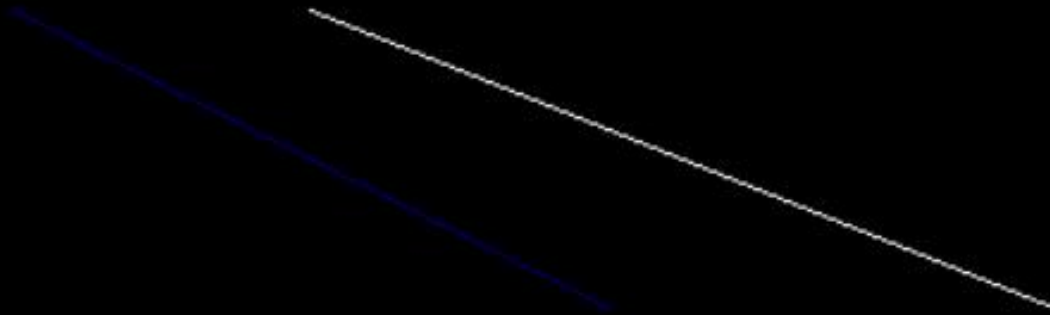
Enter your choice:

4

Enter the value for shearing

0.5

SHEARING



"C:\Users\user\Desktop\SHREYAS\SEM II\Transformatio.exe"

Enter the points of line

100 200  
300 300

1.Transaction

2.Scaling

3.Rotation

4.Shearing

5.Reflection

Enter your choice:

5

## REFLECTION

