```
#include<iostream>
#include<graphics.h>
#include<math.h>
using namespace std;
class transform
{
public:
int m,a[20][20],c[20][20];
int i,j,k;
public:
void display();
void accept();
void operator *(float b[20][20])
{
for(int i=0;i<m;i++)
{
for(int j=0;j<m;j++)
{ c[i][j]=0;
for(int k=0;k<m;k++)
{
c[i][j]=c[i][j]+(a[i][k]*b[k][j]);
}}}};
void transform::display()
{
int gd,gm; gd=DETECT;
initgraph(&gd,&gm,NULL);
line((300),0,(300),600);
line(0,(300),600,(300));
for( i=0;i<m-1;i++)
{
line(300+a[i][0],300-a[i][1],300+a[i+1][0],300-a[i+1][1]);
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}
line(300+a[0][0],300-a[0][1],300+a[i][0],300-a[i][1]);
for( i=0;i<m-1;i++)
{
line(300+c[i][0],300-c[i][1],300+c[i+1][0],300-c[i+1][1]);

}
line(300+c[0][0],300-c[0][1],300+c[i][0],300-c[i][1]);
delay(5000);
closegraph();
}
void transform::accept()
{
cout<<"\n";
cout<<"Enter the Number Of Edges: ";
cin>>m;
cout<<"\nEnter The Coordinates"<<endl;
for(int i=0;i<m;i++)
{
for(int j=0;j<3;j++)
{
if(j>=2)
{
    a[i][j]=1;
}
else
{
    cin>>a[i][j];
}
}
}
```

```
}
int main()
{
int ch,tx,ty;
float sx,sy;
float deg,theta,b[20][20];
transform t;
t.accept();
while(true)
{
cout<<"\nEnter your choice\n1.Translation\n2.Scaling\n3.Rotation\n4.Exit"<<endl;
cin>>ch;
switch(ch)
{
case 1:
cout<<"\nTRANSLATION OPERATION\nEnter value for tx and ty: ";
cin>>tx>>ty;
b[0][0]=b[2][2]=b[1][1]=1;
b[0][1]=b[0][2]=b[1][0]=b[1][2]=0;
b[2][0]=tx;
b[2][1]=ty;
t * b;
t.display();
break;
case 2:
cout<<"\nSCALING OPERATION\nEnter value for sx,sy: ";
cin>>sx>>sy;
b[0][0]=sx;
b[1][1]=sy;
b[0][1]=b[0][2]=b[1][0]=b[1][2]=0;
b[2][0]=b[2][1]=0;
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b[2][2] = 1;
t * b;
t.display();
break;
case 3:
cout<<"\nROTATION OPERATION\nEnter value for angle: ";
cin>>deg;
theta=deg*(3.14/180);
b[0][0]=b[1][1]=cos(theta);
b[0][1]=sin(theta);
b[1][0]=sin(-theta);
b[0][2]=b[1][2]=b[2][0]=b[2][1]=0;
b[2][2]=1;
t * b;
t.display();
break;
case 4:
exit(0);
default:
cout<<"\nInvalid choice";
}
}
getch();
    return  0;
    }
```