ST. XAVIER’S COLLEGE

**(Affiliated to Tribhuvan University)**

**Maitighar, Kathmandu**

****

**Computer Graphics**

**Lab Assignment #7**

**SUBMITTED BY:**

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**SUBMITTED TO**

|  |  |
| --- | --- |
| Er. Anil Sah  ( Lecturer ) |  |
| Department of Computer Science | |

**STATEMENT:**

**To Implement 2DTranlsation, Scaling And Rotation.**

**Source Code:**

//---------------------------------------------------------------------------

#include <vcl\vcl.h>

#pragma hdrstop

#include <Math.h>

#include "Unit1.h"

//---------------------------------------------------------------------------

#pragma resource "\*.dfm"

TForm1 \*Form1;

int i,x,y,a,b,j,angle;

//---------------------------------------------------------------------------

\_\_fastcall TForm1::TForm1(TComponent\* Owner)

: TForm(Owner)

{

}

//---------------------------------------------------------------------------

void \_\_fastcall TForm1::TranslateClick(TObject \*Sender)

{

x=Image1->Height;

y=Image1->Width;

for(i=0;i<=x;i++)

{

for(j=0;j<=y;j++)

{

a=i+StrToInt(Edit1->Text);

b=j+StrToInt(Edit2->Text);

Image2->Canvas->Pixels[a][b]=Image1->Canvas->Pixels[i][j];

}

}

}

//---------------------------------------------------------------------------

void \_\_fastcall TForm1::ScaleClick(TObject \*Sender)

{

x=Image1->Height;

y=Image1->Width;

for(i=0;i<=x;i++)

{

for(j=0;j<=y;j++)

{

a=i\*StrToInt(Edit3->Text);

b=j\*StrToInt(Edit4->Text);

Image2->Canvas->Pixels[a][b]=Image1->Canvas->Pixels[i][j];

}

}

}

//---------------------------------------------------------------------------

void \_\_fastcall TForm1::RotateClick(TObject \*Sender)

{

x=Image1->Height;

y=Image1->Width;

angle=StrToInt(Edit5->Text);

for(i=0;i<=x;i++)

{

for(j=0;j<=y;j++)

{

a=100+i\*cos(angle)-j\*sin(angle);

b=100+i\*sin(angle)+j\*cos(angle);

Image2->Canvas->Pixels[a][b]=Image1->Canvas->Pixels[i][j];

}

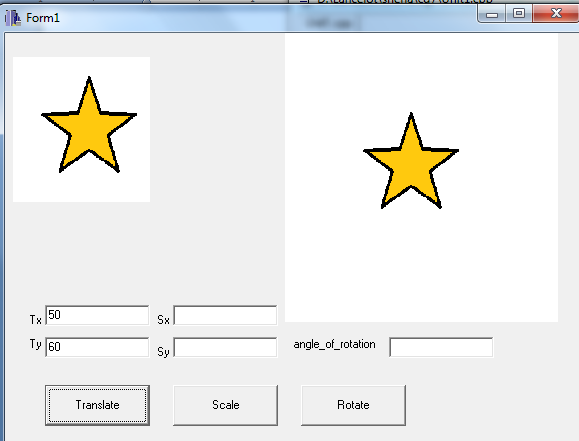
}

}

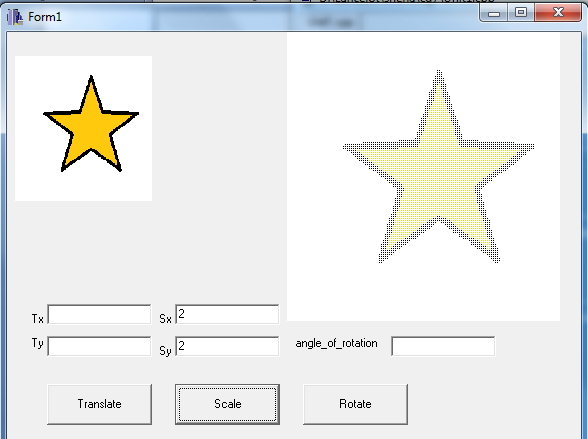
//--------------------------------------------------------------------

**OUTPUT:**

Translation:



Scaling:



Rotation:

