**ST.XAVIER’S COLLEGE**

MAITIGHAR, KATHMANDU



Computer Graphics

Assignment #7

Submitted By:

Prashraya Hada

013BSCCSIT027

2nd Year/ 4th Sem

Submitted to:

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| Er. Anil K. Sah  Lecturer  Department of Computer Science |  |

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**SOURCE Code:**

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

#include <vcl\vcl.h>

#pragma hdrstop

#include <math.h>

#include "trans.h"

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

#pragma resource "\*.dfm"

TForm1 \*Form1;

int i,j,a,b,x,y; //common parameters

int Tx,Ty; //parameters for translation

int theta; //parameters for rotation

float Sx,Sy,m,n,o,p,q,r; //parameters for scaling

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

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

: TForm(Owner)

{

}

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

void \_\_fastcall TForm1::Button1Click(TObject \*Sender)

{

Tx=StrToInt(Edit1->Text);

Ty=StrToInt(Edit2->Text);

x=Image1->Height;

y=Image1->Width;

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

{

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

{

a = i+Tx;

b = j+Ty;

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

}

}

}

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

void \_\_fastcall TForm1::Button2Click(TObject \*Sender)

{

theta =StrToInt(Edit3->Text);

x = Image1->Height;

y = Image1->Width;

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

{

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

{

a = i\*cos(theta)-j\*sin(theta);

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

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

}

}

}

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

void \_\_fastcall TForm1::Button3Click(TObject \*Sender)

{

Sx = StrToFloat(Edit4->Text);

Sy = StrToFloat(Edit5->Text);

m = Image1->Height;

n = Image1->Width;

for(q=0;q<=m;q++)

{

for(r=0;r<=n;r++)

{

o = q \* Sx;

p = r \* Sy;

Image2->Canvas->Pixels[o][p] = Image1->Canvas->Pixels[q][r];

}

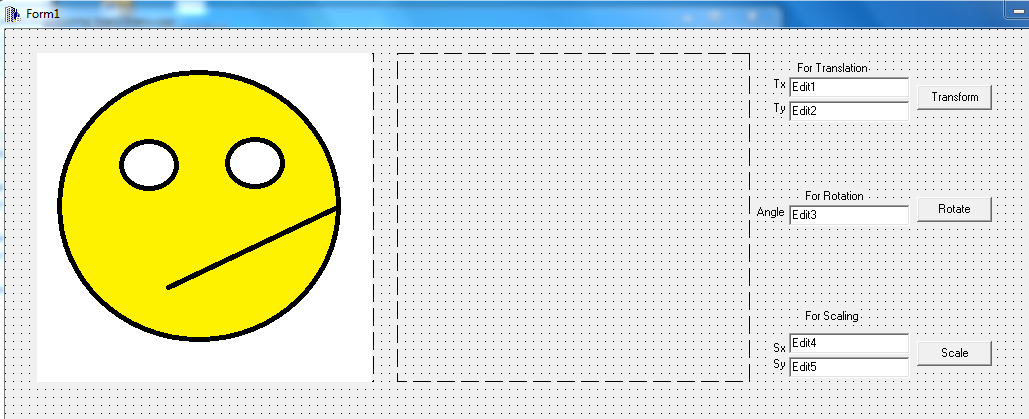
}

}

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

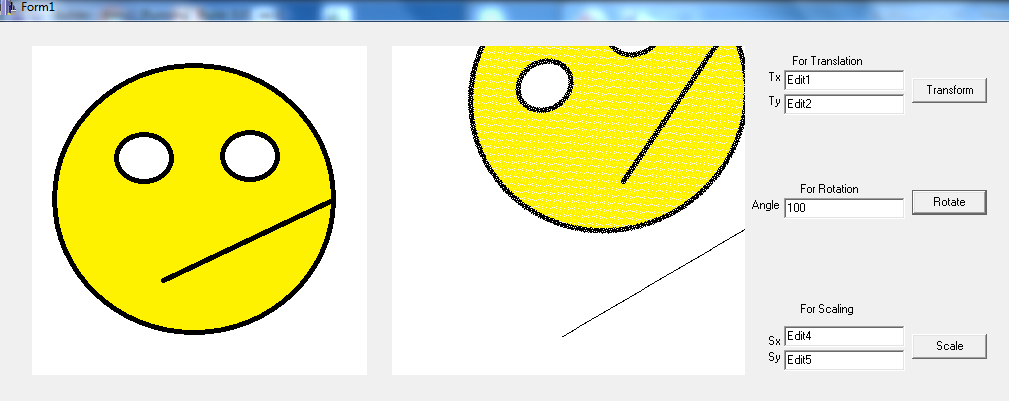
**OUTPUT:**

**Screen**

****

**Translation**

**Rotation**

****

**Scaling**

****