ST. XAVIER’S COLLEGE

**(Affiliated to Tribhuvan University)**

**Maitighar, Kathmandu**

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**Computer Graphics**

**Lab Assignment #7**

**SUBMITTED BY**

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**4th sem/ 2nd year**

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**Statement**

WAP a program to translate, rotate and scale a bitmap image in C++ programming.

**Source Code**

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

#include <vcl\vcl.h>

#pragma hdrstop

#include <math.h>

#include "transformation.h"

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

#pragma resource "\*.dfm"

TForm1 \*Form1;

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

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

: TForm(Owner)

{

}

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

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

{

outPanel->Canvas->FillRect(ClientRect);

int i ,j,tx,ty,a,b;

int h,w;

h =inPanel->Height;

w= inPanel->Width;

tx= StrToInt(inTx->Text);

ty= StrToInt(inTy->Text);

for(i=0;i<=h;i++){

for(j=0;j<=w;j++){

a=i+tx;

b=j+ty;

outPanel->Canvas->Pixels[a][b] = inPanel->Canvas->Pixels[i][j];

}

}

}

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

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

{

outPanel->Canvas->FillRect(ClientRect);

int i,j;

int h,w;

h =inPanel->Height;

w= inPanel->Width;

float a,b;

float angle= StrToFloat(inRo->Text)\*(3.1415/180);

for(i=0;i<=h;i++){

for(j=0;j<=w;j++){

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

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

outPanel->Canvas->Pixels[a][b] = inPanel->Canvas->Pixels[i][j];

}

}

}

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

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

{

float sx,sy,a,b;

int i,j;

outPanel->Canvas->FillRect(ClientRect);

sx = StrToFloat(inSx->Text);

sy = StrToFloat(inSy->Text);

int h,w;

h =inPanel->Height;

w= inPanel->Width;

for(i=0;i<=h;i++){

for(j=0;j<=w;j++){

a=sx\*i;

b=sy\*j;

outPanel->Canvas->Pixels[a][b] = inPanel->Canvas->Pixels[i][j];

}

}

}

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





