ST. XAVIER’S COLLEGE

**(Affiliated to Tribhuvan University)**

**Maitighar, Kathmandu**

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**Computer Graphics**

**Lab Assignment # 7**

**Translation, Rotation & Scaling in C++ Builder**

**SUBMITTED BY:**

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**SUBMITTED TO:**

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**STATEMENT**

**Write a program to translate the given image using C++ Builder.**

**SOURCE CODE:**

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

#include <vcl\vcl.h>

#include<math.h>

#pragma hdrstop

#include "Unit1.h"

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

#pragma resource "\*.dfm"

TForm1 \*Form1;

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

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

: TForm(Owner)

{

}

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

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

{

int x=Image1->Width;

int y=Image1->Height;

int Tx=StrToInt(Edit1->Text);

int Ty=StrToInt(Edit2->Text);

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

{

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

{

int a=i+Tx;

int b=j+Ty;

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

}

}

}

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

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

{

int x=Image1->Width;

int y=Image1->Height;

int deg=StrToInt(Edit3->Text);

float rad=deg/180.0\*3.141592;

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

{

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

{

int a=(i\*cos(rad)-j\*sin(rad)+200);

int b=(j\*cos(rad)+i\*sin(rad)+200);

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

}

}

}

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

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

{

int x=Image1->Width;

int y=Image1->Height;

int Sx=StrToInt(Edit4->Text);

int Sy=StrToInt(Edit5->Text);

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

{

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

{

int a=i\*Sx;

int b=j\*Sy;

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

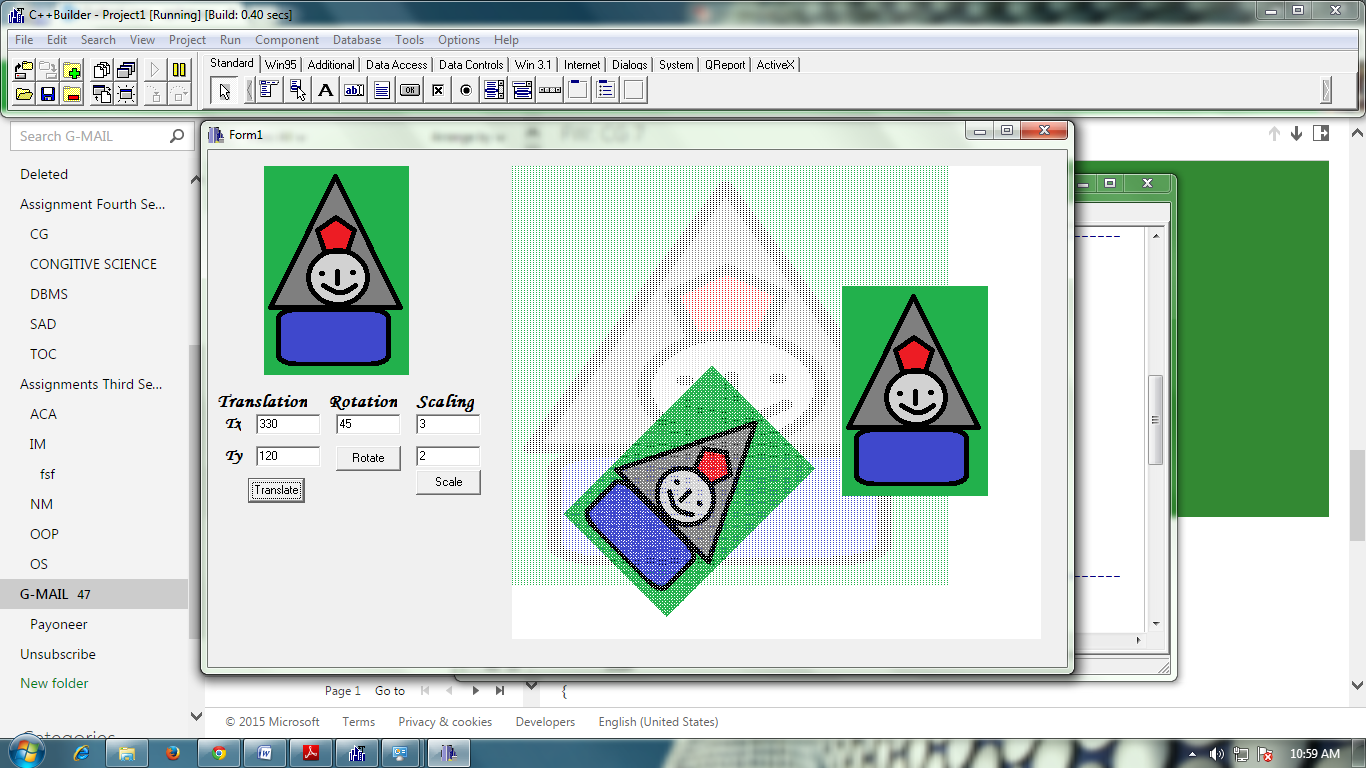
}

}

}

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

**OUTPUT:**



**CONCLUSION:**

Hence, the given image was translated, rotated and scaled by using C++ Builder.