**ST.XAVIER’S COLLEGE**

MAITIGHAR, KATHMANDU



**Computer Graphics Assignment #8**

**Reflect an image along X and Y axes**

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**STATEMENT**

Write a program to Reflect an image about X and Y axes.

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**SOURCE CODE**

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

#include <vcl\vcl.h>

#pragma hdrstop

#include "Unit1.h"

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

#pragma resource "\*.dfm"

TForm1 \*Form1;

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

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

: TForm(Owner)

{

}

void drawAxes(TImage \* img) {

//Y-axis

img->Canvas->MoveTo((img->Width)/2,0);

img->Canvas->LineTo((img->Width/2),img->Height);

//X-axis

img->Canvas->MoveTo(0,(img->Height)/2);

img->Canvas->LineTo(img->Width,(img->Height)/2);

}

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

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

{

int height = drawArea->Height;

int width = drawArea->Width;

int widthHlf = width/2;

TCanvas \* sourceImg = source->Canvas;

TCanvas \* destination = drawArea->Canvas;

for(int y=0;y<height;++y) {

for(int x=0;x<width;++x) {

int \_x=-(x-widthHlf)+widthHlf;

destination->Pixels[\_x][y]=sourceImg->Pixels[x][y];

}

}

}

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

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

{

int height = drawArea->Height;

int width = drawArea->Width;

int heightHlf = height/2;

TCanvas \* sourceImg = source->Canvas;

TCanvas \* destination = drawArea->Canvas;

for(int y=0;y<height;++y) {

for(int x=0;x<width;++x) {

int \_y=-(y-heightHlf)+heightHlf;

destination->Pixels[x][\_y]=sourceImg->Pixels[x][y];

}

}

}

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

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

{

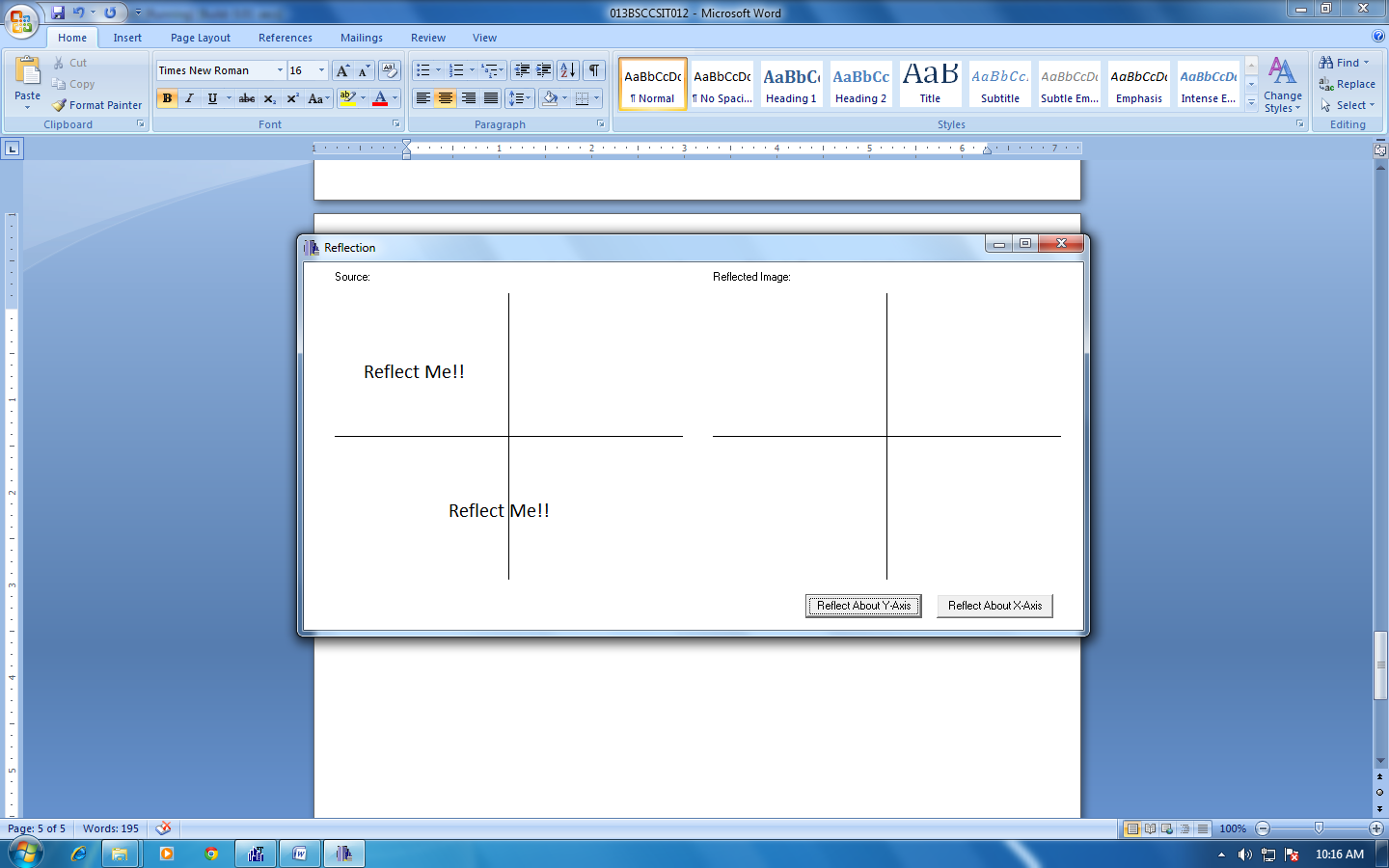
drawAxes(source);

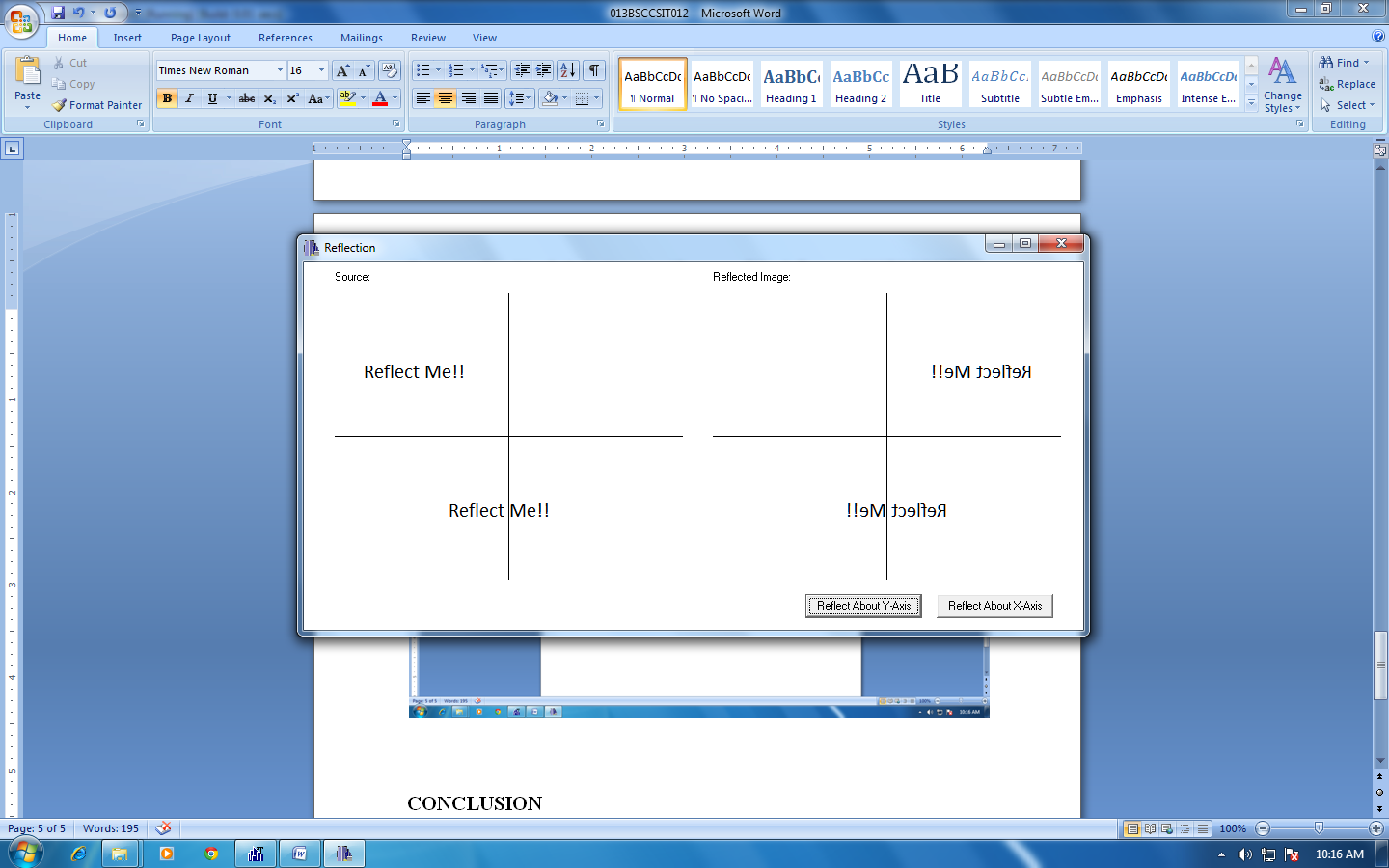
drawAxes(drawArea);

}

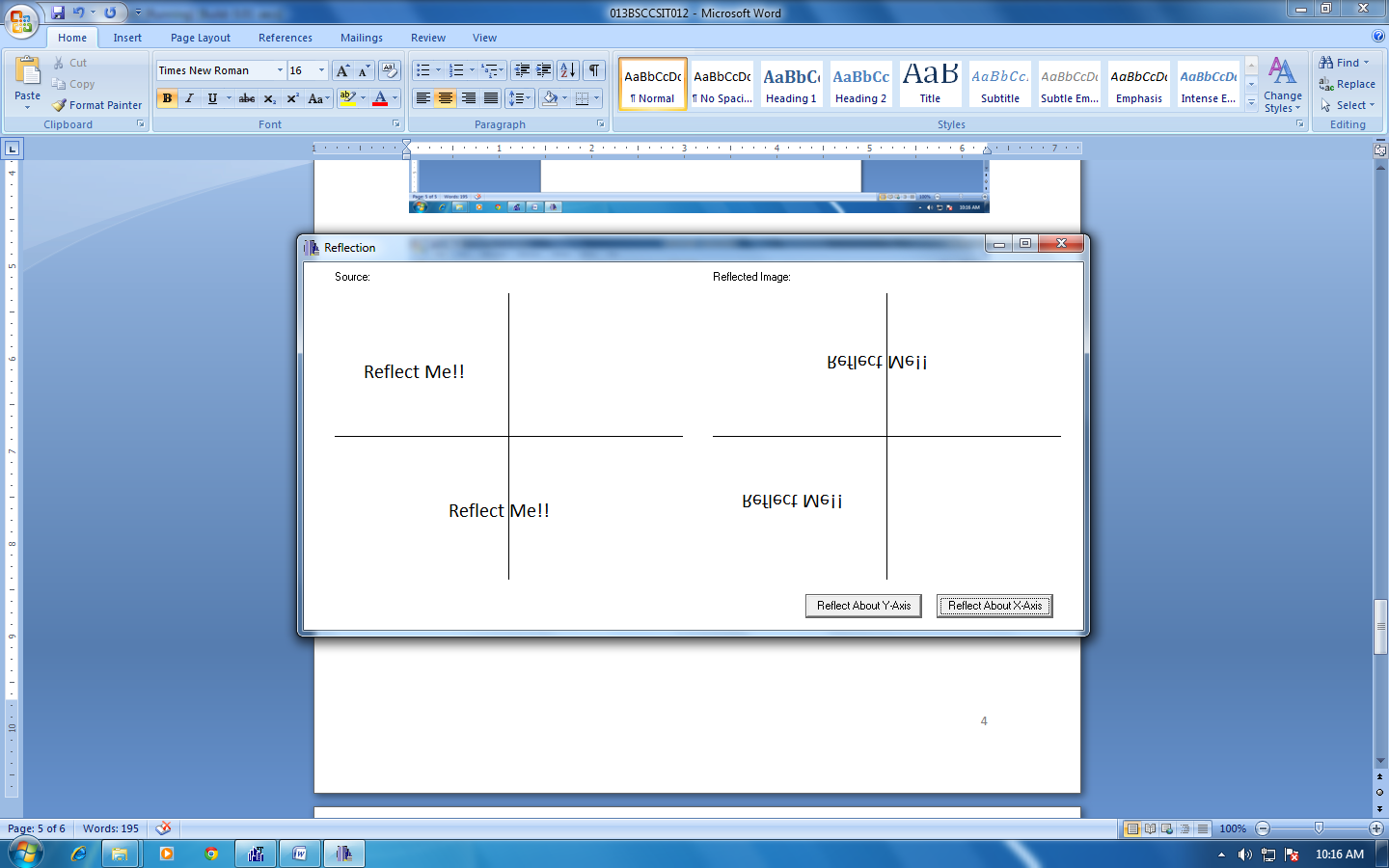
//--------

**OUTPUT:**

****

****

1 Reflection about Y-Axis

****

2 Reflection about X-Axis

**CONCLUSION**

Hence, a program to reflect an image along the x and y axes was implemented by using C++ with C++Builder.