**ST.XAVIER’S COLLEGE**

MAITIGHAR, KATHMANDU

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**Computer Graphics**

Assignment #8

Submitted By:

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013BSCCSIT042

2nd year/ 4th semester

Submitted to:

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**Statement:**

Perform transformation in the image by reflection.

1. **REFLECTION:**

**Algorithm:**

1. Get the width and height of the source image
2. Get parameter for reflection axis (1 for x-axis, 2 for y-axis)
3. For each point i in width

For each point j in height

If parameter==1

The translated point (x’, y’) is given by

x' = i

y’ = - j

If parameter==2

The translated point (x’, y’) is given by

x' = - i

y’ = j

Plot the points (x’, y’) with the same color as source in destination

1. Stop

(General concept for display screens: origin is in top left of the screen and y-axis is positive downwards and hence there is no negative coordinates)

**Source Code:**

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

#include <vcl\vcl.h>

#pragma hdrstop

#include "Reflection.h"

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

#pragma resource "\*.dfm"

TForm1 \*Form1;

int x,y;

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

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

: TForm(Owner)

{

}

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

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

{

x=Image1->Width;

y=Image1->Height;

for(int i=x; i>=0; i--)

{

for(int j=y; j>=0; j--)

{

int a=x-i;

int b=j;

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

}

}

}

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

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

{

x=Image1->Width;

y=Image1->Height;

for(int i=x; i>=0; i--)

{

for(int j=y; j>=0; j--)

{

int a=i;

int b=y-j;

Image3->Canvas->Pixels[a][b]=Image1->Canvas->Pixels[i][j];

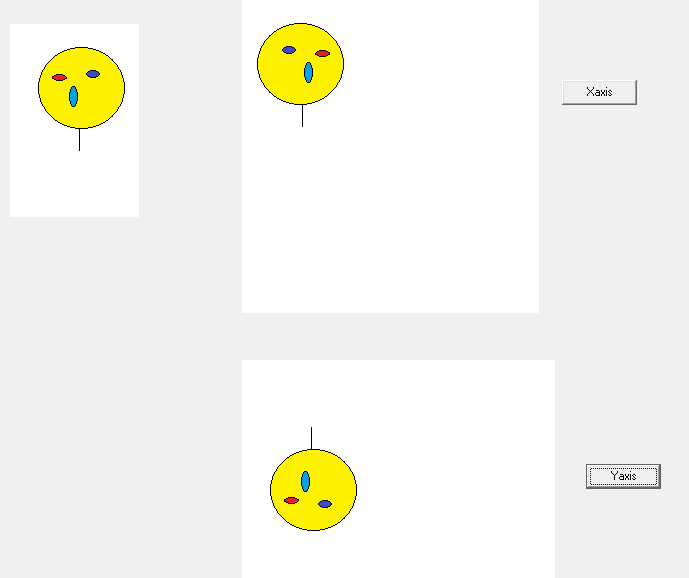
}

}

}

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

**Output:**

**

*Figure I: Reflection of the Object*

**Conclusion:**

Hence, reflection of object was performed using C++ Builder.