ST. XAVIER’S COLLEGE

**(Affiliated to Tribhuvan University)**

Maitighar, Kathmandu



COMPUTER GRAPHICS

Lab Assignment #8

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# STATEMENT: PERFORM TRANSFORMATION IN THE IMAGE BY 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

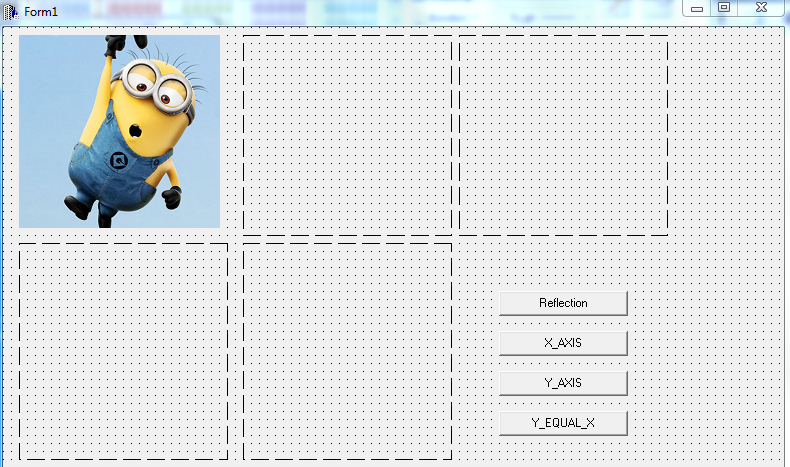
y’ = j

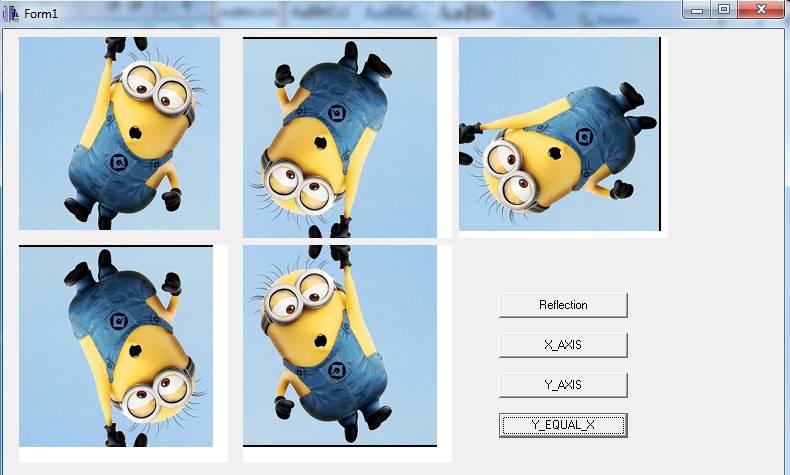
Plot the points (x’, y’) with the same color as source in destination

1. Stop

# Source Code:

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| --- |
| #include <vcl\vcl.h>  #pragma hdrstop  #include "Unit1.h"  //---------------------------------------------------------------------------  #pragma resource "\*.dfm"  TForm1 \*Form1;  int x,y,a,b,i,j;  //---------------------------------------------------------------------------  \_\_fastcall TForm1::TForm1(TComponent\* Owner)  : TForm(Owner)  {  }  //---------------------------------------------------------------------------  void \_\_fastcall TForm1::ReflectionClick(TObject \*Sender)  {  x=Image1->Height;  y=Image1->Width;  for (i=0;i<=x;i++)  {  for (j=0;j<=y;j++)  {  a=-i;  b=-j;  a=a+x;  b=b+y;  Image2->Canvas->Pixels[a][b]=Image1->Canvas->Pixels[i][j];  }  }  }  //---------------------------------------------------------------------------  void \_\_fastcall TForm1::X\_AXISClick(TObject \*Sender)  {  x=Image1->Height;  y=Image1->Width;  for (i=0;i<=x;i++)  {  for (j=0;j<=y;j++)  {  a=i;  b=-j;  b=b+y;  Image3->Canvas->Pixels[a][b]=Image1->Canvas->Pixels[i][j];  }  }  }  //---------------------------------------------------------------------------  void \_\_fastcall TForm1::Y\_AXISClick(TObject \*Sender)  {  x=Image1->Height;  y=Image1->Width;  for (i=0;i<=x;i++)  {  for (j=0;j<=y;j++)  {  a=-i;  b=j;  a=a+x;  Image4->Canvas->Pixels[a][b]=Image1->Canvas->Pixels[i][j];  }  }  }  //---------------------------------------------------------------------------  void \_\_fastcall TForm1::Y\_EQUAL\_XClick(TObject \*Sender)  {  x=Image1->Height;  y=Image1->Width;  for (i=0;i<=x;i++)  {  for (j=0;j<=y;j++)  {  a=j;  b=i;  Image5->Canvas->Pixels[a][b]=Image1->Canvas->Pixels[i][j];  }  }  } |

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