# ST.XAVIER’S COLLEGE

# MAITIGHAR, KATHMANDU

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**LAB ASSIGNMENT #2**

**Computer Graphics**

**Submitted By:**

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4TH Sem, 2nd Year

**Submitted To:**

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**ALGORITHM**

Step 1: Take input x1,x2,y1 and y2.

Step 2: dx=abs(x2-x1);

dy=abs(y2-y1);

Step 3: if(x1>x2)

3.1: x=x2;

3.2: y=y2;

3.3:xEND=x2;

Step 4: else

4.1: x=x1;

4.2: y=y1;

4.3: xEND=x2;

Step 5: Put pixel (x,y,1)

Step 6: pk=2\*dy-dx;

Step 7: while(x<=xEND)

Step 8: while pk<0

8.1: x=x+1;

8.2: y=y;

8.3: pk=pk+2\*dy;

Step 9: else

9.1: x=x+1;

9.2: y=y+1;

9.3: pk=pk+2\*dy-2\*dx;

Step 10: Putpixel(x,y,1).

Step 11: End

**SOURCE CODE**

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

#include <vcl\vcl.h>

#pragma hdrstop

#include "Unit1.h"

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

#pragma resource "\*.dfm"

TForm1 \*Form1;

int x1,x2,y1,y2,x,y,dx,dy,pk,k,xEND;

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

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

: TForm(Owner)

{

}

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

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

{

x1=StrToInt(Edit1->Text);

x2=StrToInt(Edit2->Text);

y1=StrToInt(Edit3->Text);

y2=StrToInt(Edit4->Text);

dx=abs(x2-x1);

dy=abs(y2-y1);

if(x1>x2)

{

x=x2;

y=y2;

xEND=x2;

}

else

{

x=x1;

y=y1;

xEND=x2;

}

Image1->Canvas->Pixels[x][y]=RGB(150,100,125);

pk=2\*dy-dx;

while(x<=xEND)

{

if(pk<0)

{

x=x+1;

y=y;

pk=pk+2\*dy;

}

else

{

x=x+1;

y=y+1;

pk=pk+2\*dy-2\*dx;

}

Image1->Canvas->Pixels[x][y]=RGB(150,100,125);

}

}

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

**OUTPUT**



