**ST. XAVIER’S COLLEGE**

**(Affiliated to Tribhuvan University)**

**Maitighar, Kathmandu**

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**COMPUTER GRAPHICS**

**LAB ASSIGNMENT#5**

**Submitted by:**

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**Submitted to:**

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**Statement: Implement midpoint circle algorithm.**

**Source code:**

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

#include <vcl\vcl.h>

#pragma hdrstop

#include "Unit1.h"

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

#pragma resource "\*.dfm"

TForm1 \*Form1;

int xc,yc,r,pk,x,y;

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

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

: TForm(Owner)

{

}

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

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

{

r=StrToInt(Edit1->Text);

xc=StrToInt(Edit2->Text);

yc=StrToInt(Edit3->Text);

x=0;

y=r;

pk=1-r;

Image1->Canvas->Pixels[x][y]=RGB(100,200,200);

while(x<y)

{

if(pk<0)

{

pk=pk+2\*(x+1)+1;

x++;

Image1->Canvas->Pixels[xc+x][yc+y]=RGB(100,200,200);

Image1->Canvas->Pixels[xc-x][yc+y]=RGB(10,200,100);

Image1->Canvas->Pixels[xc+x][yc-y]=RGB(150,210,250);

Image1->Canvas->Pixels[xc-x][yc-y]=RGB(255,0,0);

Image1->Canvas->Pixels[xc+y][yc+x]=RGB(0,255,0);

Image1->Canvas->Pixels[xc-y][yc+x]=RGB(0,0,255);

Image1->Canvas->Pixels[xc+y][yc-x]=RGB(55,56,211);

Image1->Canvas->Pixels[xc-y][yc-x]=RGB(58,250,158);

}

else

{

pk=pk+2\*(x+1)+1-2\*(y+1);

x++;

y--;

Image1->Canvas->Pixels[xc+x][yc+y]=RGB(100,200,200);

Image1->Canvas->Pixels[xc-x][yc+y]=RGB(10,200,100);

Image1->Canvas->Pixels[xc+x][yc-y]=RGB(150,210,250);

Image1->Canvas->Pixels[xc-x][yc-y]=RGB(255,0,0);

Image1->Canvas->Pixels[xc+y][yc+x]=RGB(0,255,0);

Image1->Canvas->Pixels[xc-y][yc+x]=RGB(0,0,255);

Image1->Canvas->Pixels[xc+y][yc-x]=RGB(55,56,211);

Image1->Canvas->Pixels[xc-y][yc-x]=RGB(58,250,158);

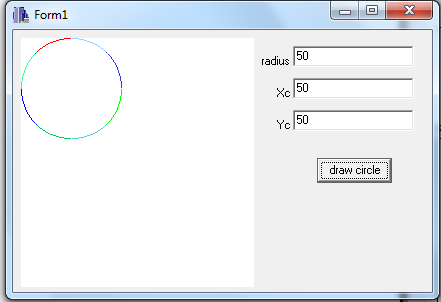
}

}

}

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

**Output:**

****