Lab Report: 02

Course title: Computer Graphics Laboratory Course code: CSE-304 3rd Year 1st Semester Examination 2022

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Submitted to-

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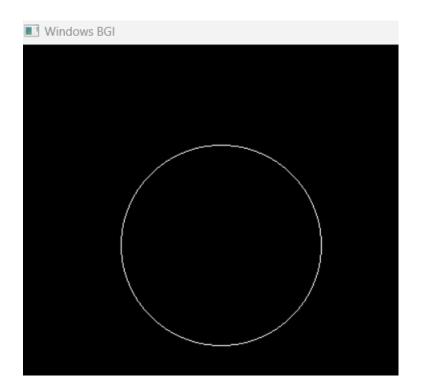
1. Scan converting a circle using midpoint :-

```
Code:
```

```
#include <graphics.h>
#include <bits/stdc++.h>
using namespace std;
class bresen
    float x, y,a, b, r, p;
    public:
    void get ();
    void cal ();
};
    int main ()
    bresen b;
    b.get ();
    b.cal ();
    getch ();
    void bresen :: get ()
    cout<<"ENTER CENTER AND RADIUS";</pre>
     cout<< "ENTER (a, b)";</pre>
    cin>>a>>b;
      cout<<"ENTER r";</pre>
    cin>>r;
void bresen ::cal ()
    /* request auto detection */
    int gdriver = DETECT,gmode, errorcode;
    int midx, midy, i;
    /* initialize graphics and local variables */
    initgraph (&gdriver, &gmode, " ");
    /* read result of initialization */
    errorcode = graphresult ();
```

```
// if (errorcode != grOK) /*an error occurred */
  // {
      // printf("Graphics error: %s \n", grapherrormsg
(errorcode);
     // printf ("Press any key to halt:");
      // getch ();
      // exit (1); /* terminate with an error code */
    //
    x=0;
    y=r;
    putpixel (a, b+r, RED);
    putpixel (a, b-r, RED);
    putpixel (a-r, b, RED);
    putpixel (a+r, b, RED);
    p=(5/4)-r;
    while (x<=y)
    {
        if (p<0)
        p+= (4*x)+6;
        else
            {
            p+=(2*(x-y))+5;
            y--;
        }
        X++;
        putpixel (a+x, b+y, RED);
        putpixel (a-x, b+y, RED);
        putpixel (a+x, b-y, RED);
        putpixel (a+x, b-y, RED);
        putpixel (a+x, b+y, RED);
        putpixel (a+x, b-y, RED);
        putpixel (a-x, b+y, RED);
        putpixel (a-x, b-y, RED);
    }
}
```

OUTPUT:



2. Scan Converting a Ellipse:

Code:

```
printf("Enter the value of yc\t");
        scanf("%d",&yc);
        printf("Enter X axis length\t");
        scanf("%d",&a);
        printf("Enter Y axis length\t");
        scanf("%d",&b);
        x=0;y=b;
        disp();
        p1=(b*b)-(a*a*b)+(a*a)/4;
        while((2.0*b*b*x) <= (2.0*a*a*y))
        {
             X++;
                         if(p1<=0)
                         p1=p1+(2.0*b*b*x)+(b*b);
                         else
{
                       y--;
           p1=p1+(2.0*b*b*x)+(b*b)-(2.0*a*a*y);
 }
                        disp();
                        X=-X;
                        disp();
                        X=-X;
                        delay(50);
         }
         x=a;
         y=0;
         disp();
         p2=(a*a)+2.0*(b*b*a)+(b*b)/4;
         while((2.0*b*b*x)>(2.0*a*a*y))
        {
                         y++;
                         if(p2>0)
                         p2=p2+(a*a)-(2.0*a*a*y);
                         else
{
                    X--;
               p2=p2+(2.0*b*b*x)-(2.0*a*a*y)+(a*a);
 }
                    disp();
```

OUTPUT:

```
Enter the value of Xc 200
Enter the value of yc 200
Enter X axis length 150
Enter Y axis length 100
```

