Name : Shrikant Gavhale

Div A, Batch B

Roll no 26

**Mid Point circle drawing**

**Code :**

#include<windows.h>

#include<GL/glut.h>

#include<stdio.h>

GLint xc,yc,r;

void myInit(void)

{

glClearColor(0.0,1.0,1.0,0.0); //clear values for RGBA

glColor3f(1.0f,0.0f,0.0f); //set current color - RGB

glPointSize(3.0); //diameters of rasterized points

glMatrixMode(GL\_PROJECTION); // specifies current matrix

glLoadIdentity();

gluOrtho2D(0.0,800.0,0.0,600.0); //left, right, top, bottom

//glOrtho(-sizes/2,sizes/2,-sizes/2,sizes/2,-1,1);

}

void readInput()

{

printf("Enter xc, yc, radius: ");

scanf("%i %i %i",&xc,&yc,&r);

}

void setPixel(GLint xcoordinate, GLint ycoordinate)

{

glBegin(GL\_POINTS);

glVertex2i(xcoordinate,ycoordinate);

glEnd();

glFlush();

}

/\* void draw\_axis()

{

GLint i=(-sizes)/2;

for(;i<(sizes/2);i++)

{

setPixel(i,0);

setPixel(0,i);

}

} \*/

void draw\_in\_each\_oct(GLint xk,GLint yk, GLint xc,GLint yc)

{

setPixel(xc+xk,yc+yk);

setPixel(xc+yk,yc+xk);

setPixel(xc-yk,yc+xk);

setPixel(xc-xk,yc+yk);

setPixel(xc-xk,yc-yk);

setPixel(xc-yk,yc-xk);

setPixel(xc+yk,yc-xk);

setPixel(xc+xk,yc-yk);

}

void midPtCircle(GLint xc,GLint yc,GLint r)

{

GLint pk,xk,yk;

pk=1-r;

xk=0;

yk=r;

draw\_in\_each\_oct(xk,yk,xc,yc);

while(xk<=yk)

{

if(pk<0)

{

xk=xk+1;

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

}

else

{

xk=xk+1;

yk=yk-1;

pk=pk+(2\*xk)+1-(2\*yk);

}

draw\_in\_each\_oct(xk,yk,xc,yc);

}

}

void Display(void)

{

glClear(GL\_COLOR\_BUFFER\_BIT);

//draw\_axis();

midPtCircle(xc,yc,r);

}

int main(int argc,char \*argv[])

{

glutInit(&argc,argv);

glutInitDisplayMode(GLUT\_SINGLE | GLUT\_RGB);

glutInitWindowSize(800,600);

glutInitWindowPosition(100,50);

glutCreateWindow("Mid Point Circle");

readInput();

glutDisplayFunc(Display);

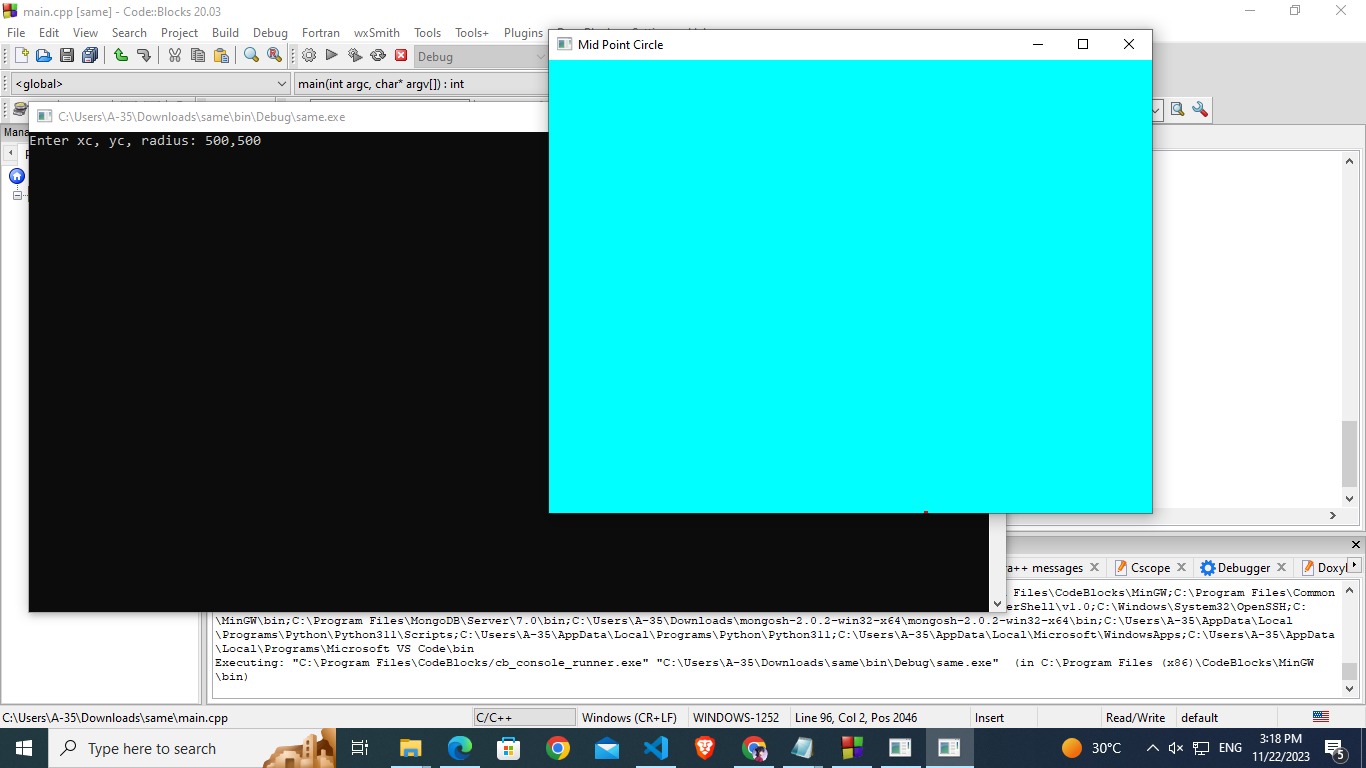
myInit();

glutMainLoop();

return 0;

}

**Output :**

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