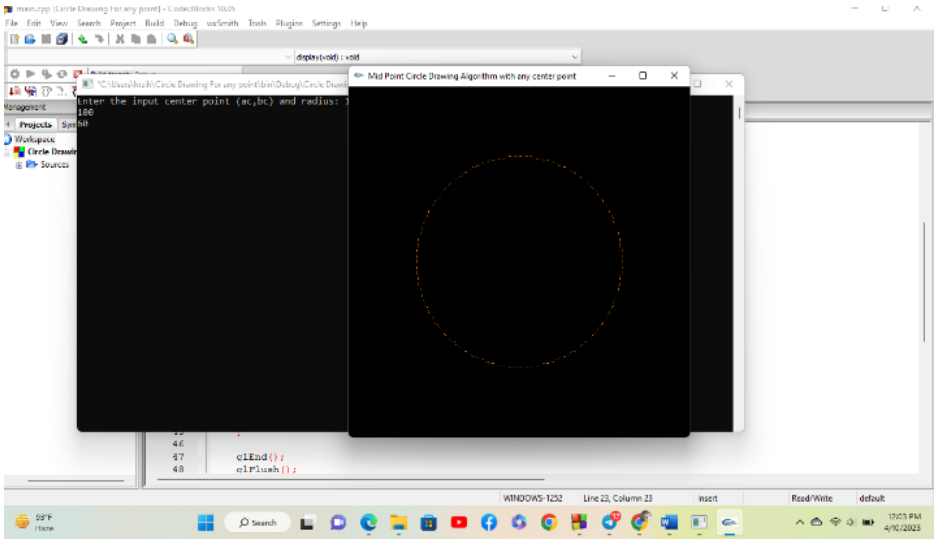
```
#include <stdio.h>
#include <GL/gl.h>
#include <GL/glut.h>

int ac, bc, r;

void drawCirclePoints(int a, int b)
{
   // drawing the circle points in all 8 octants
   glVertex2i(ac + a, bc + b);
   glVertex2i(ac + b, bc + a);
   glVertex2i(ac - a, bc + b);
   glVertex2i(ac - b, bc + a);
   glVertex2i(ac + a, bc - b);
   glVertex2i(ac + b, bc - a);
   glVertex2i(ac - a, bc - b);
   glVertex2i(ac - b, bc - a);
}

void display(void)
{
   glClear(GL_COLOR_BUFFER_BIT);
   glColor3f(1.0, 0.5, 0.0);
   glBegin(GL_POINTS);

   int a = 0, b = r;
```

```
    float p = 1 - r;

    drawCirclePoints(a, b);

    while (a < b)
    {
        if (p < 0)
        {
            a++;
            p += 2*a + 1;
        }
        else
        {
            a++;
            b--;
            p += 2*(a-b) + 1;
        }
        drawCirclePoints(a, b);
    }

    glEnd();
    glFlush();
}

void init (void)
{
```

```
   glClearColor (0.0, 0.0, 0.0, 0.0);
   glMatrixMode(GL_PROJECTION);
   glLoadIdentity();
   gluOrtho2D(0, 200, 0, 200);
}

int main(int argc, char** argv)
{
   printf("Enter the input center point (ac,bc)
and radius: ");
   scanf("%d %d %d",&ac, &bc, &r);

   glutInit(&argc, argv);
   glutInitDisplayMode (GLUT_SINGLE |
GLUT_RGB);
   glutInitWindowSize (500, 500);
   glutInitWindowPosition (100, 100);
   glutCreateWindow ("Mid Point Circle
Drawing Algorithm with any center point");
   init ();
   glutDisplayFunc(display);
   glutMainLoop();
   return 0;
}
```

Output: Enter Input ac-100, bc-100 and radius- 60:



Output-02: Enter Input ac-40, bc-400 and radius- 40