from OpenGL.GL import \*

from OpenGL.GLUT import \*

from OpenGL.GLU import \*

def findzone(x1, y1, x2, y2):

dx = x2 - x1

dy = y2 - y1

if (dx >= 0 and dy >= 0):

if (abs(dx) >= abs(dy)):

return 0

else:

return 1

elif (dx <= 0 and dy >= 0):

if (abs(dx) >= abs(dy)):

return 3

else:

return 2

elif (dx <= 0 and dy <= 0):

if (abs(dx) >= abs(dy)):

return 4

else:

return 5

else:

if (abs(dx) >= abs(dy)):

return 7

else:

return 6

def convertToZone0(x0, y0, zone):

if (zone == 1):

x = y0

y = x0

elif (zone == 2):

x = y0

y = -x0

elif (zone == 3):

x = -x0

y = y0

elif (zone == 4):

x = -x0

y = -y0

elif (zone == 5):

x = -y0

y = -x0

elif (zone == 6):

x = -y0

y = x0

else:

x = x0

y = -y0

return x, y

def toOriginalZone(X, Y, zone):

glBegin(GL\_POINTS)

if (zone == 1):

x = Y

y = X

glVertex2f(x, y)

elif (zone == 2):

x = -Y

y = X

glVertex2f(x, y)

elif (zone == 3):

x = -X

y = Y

glVertex2f(x, y)

elif (zone == 4):

x = -X

y = -Y

glVertex2f(x, y)

elif (zone == 5):

x = -Y

y = -X

glVertex2f(x, y)

elif (zone == 6):

x = Y

y = -X

glVertex2f(x, y)

else:

x = X

y = -Y

glVertex2f(x, y)

glEnd()

def midPointLine(x1, y1, x2, y2):

zone = findzone(x1, y1, x2, y2)

if(zone!=0):

x1, y1 = convertToZone0(x1, y1, zone)

x2, y2 = convertToZone0(x2, y2, zone)

dx = x2 - x1

dy = y2 - y1

d = 2 \* dy - dx

ne = 2 \* dy - 2\*dx

e = 2 \* dy

x = x1

y = y1

while x <= x2:

if(zone!=0):

toOriginalZone(x, y, zone)

else:

glBegin(GL\_POINTS)

glVertex2f(x,y)

glEnd()

x += 1

if (d > 0):

y += 1

d = d + ne

else:

d = d + e

def iterate():

glViewport(0, 0, 500, 500)

glMatrixMode(GL\_PROJECTION)

glLoadIdentity()

glOrtho(-100.0, 100.0, -100.0, 100.0, 0.0, 1.0)

glMatrixMode(GL\_MODELVIEW)

glLoadIdentity()

def showScreen():

glClear(GL\_COLOR\_BUFFER\_BIT | GL\_DEPTH\_BUFFER\_BIT)

glLoadIdentity()

iterate()

glColor3f(1.0, 0.0, 3.0)

# call the draw methods here

# my id =18301276, will draw 76

midPointLine(-80, 50, -10, 50)

midPointLine(-80,-50,-10,50)

midPointLine(10,50,80,50)

midPointLine(10,50,10,-50)

midPointLine(10,0,80,0)

midPointLine(80,0,80,-50)

midPointLine(10,-50,80,-50)

glutSwapBuffers()

glutInit()

glutInitDisplayMode(GLUT\_RGBA)

glutInitWindowSize(500, 500)

glutInitWindowPosition(100, 100)

wind = glutCreateWindow(b"OpenGL Coding Practice")

glutDisplayFunc(showScreen)

glutIdleFunc(showScreen)

glutMainLoop()