Task 03: Drawing H

ID No: 19301101

ffrom OpenGL.GL import \*

from OpenGL.GLUT import \*

from OpenGL.GLU import \*

def drawline(x, y):

glBegin(GL\_POINTS)

glVertex2f(x, y)

glEnd()

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

difference\_x = x2 - x1

difference\_y = y2 - y1

total\_steps = abs(max(difference\_x, difference\_y))

step\_x = difference\_x / total\_steps

step\_y = difference\_y / total\_steps

a = x1

b = y1

for i in range(total\_steps):

drawline(round(a), round(b))

a += step\_x

b += step\_y

def Dashed\_DDA(x1, y1, x2, y2):

difference\_x = x2 - x1

difference\_y = y2 - y1

total\_steps = abs(max(difference\_x, difference\_y))

step\_x = 5\*(difference\_x / total\_steps)

step\_y = 5\*(difference\_y / total\_steps)

a = x1

b = y1

for i in range(int(total\_steps/5)):

drawline(round(a), round(b))

a += step\_x

b += step\_y

def drawH():

DDA(200, 200, 200, 400)

Dashed\_DDA(300, 200, 300, 400)

Dashed\_DDA(200, 300, 300, 300)

glFlush()

def myInit():

glClearColor(255, 255, 0.0, 0.0)

glPointSize(1.0)

glOrtho(0.0, 500, 0.0, 500, 0.0, 1.0)

glMatrixMode(GL\_MODELVIEW)

def iterate():

glViewport(0, 0, 500, 500)

glMatrixMode(GL\_PROJECTION)

glLoadIdentity()

glOrtho(0.0, 500, 0.0, 500, 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, 0.0)

# call the draw methods here

drawH()

glutSwapBuffers()

glutInit()

glutInitDisplayMode(GLUT\_RGBA)

glutInitWindowSize(500, 500)

glutInitWindowPosition(0, 0)

wind = glutCreateWindow(b"Lab 01 Task 03: Building H for ID: 19301101")

glutDisplayFunc(showScreen)

glutIdleFunc(showScreen)

glutMainLoop()