Appendix 1: Code used for processing of VegSense spatial mesh in Blender

#Code for emulating rod-transect method in Blender

#Before, need to rotate object so that y axis is facing straight upward from the origin. Adjust

##the origin vertically so that it aligns with the “ground” of the mesh object. Rotate so that

##North is positive on X axis and #East is positive on the Z axis. Then go to object mode 🡪

##object 🡪 Apply 🡪 All transformations

##NOTE: To obtain printed locations of detection [e.g. print(“East, 0.5, 0-0.5”)] you need to use

##the command line in terminal. The following website provides documentation for using the

##command line in blender: ##https://docs.blender.org/manual/en/latest/advanced/command\_line/introduction.html

import bpy

from math import sqrt

#derived from http://blender.stackexchange.com/questions/7144/how-to-get-the-distance-between-two-objects-in-the-game-engine

o = bpy.context.object

vertices = o.data.vertices

#switch to OBJECT MODE to perform the selection

bpy.ops.object.mode\_set(mode='OBJECT')

#calculate the distance from the center

print ("new")

for v in vertices:

##East

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > 0.4 and v.co[2] < 0.6:

print("East, 0.5, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > 0.4 and v.co[2] < 0.6:

print("East, 0.5, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > 0.4 and v.co[2] < 0.6:

print("East, 0.5, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > 0.4 and v.co[2] < 0.6:

print("East, 0.5, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] > 0.4 and v.co[2] < 0.6:

print("East, 0.5, 2+")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > 0.9 and v.co[2] < 1.1:

print("East, 1, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > 0.9 and v.co[2] < 1.1:

print("East, 1, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > 0.9 and v.co[2] < 1.1:

print("East, 1, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > 0.9 and v.co[2] < 1.1:

print("East, 1, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] > 0.9 and v.co[2] < 1.1:

print("East, 1, 2+")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > 1.4 and v.co[2] < 1.6:

print("East, 1.5, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > 1.4 and v.co[2] < 1.6:

print("East, 1.5, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > 1.4 and v.co[2] < 1.6:

print("East, 1.5, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > 1.4 and v.co[2] < 1.6:

print("East, 1.5, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] > 1.4 and v.co[2] < 1.6:

print("East, 1.5, 2+")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > 1.9 and v.co[2] < 2.1:

print("East, 2, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > 1.9 and v.co[2] < 2.1:

print("East, 2, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > 1.9 and v.co[2] < 2.1:

print("East, 2, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > 1.9 and v.co[2] < 2.1:

print("East, 2, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] > 1.9 and v.co[2] < 2.1:

print("East, 2, 2+")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > 2.4 and v.co[2] < 2.6:

print("East, 2.5, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > 2.4 and v.co[2] < 2.6:

print("East, 2.5, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > 2.4 and v.co[2] < 2.6:

print("East, 2.5, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > 2.4 and v.co[2] < 2.6:

print("East, 2.5, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] > 2.4 and v.co[2] < 2.6:

print("East, 2.5, 2+")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > 2.9 and v.co[2] < 3.1:

print("East, 3, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > 2.9 and v.co[2] < 3.1:

print("East, 3, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > 2.9 and v.co[2] < 3.1:

print("East, 3, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > 2.9 and v.co[2] < 3.1:

print("East, 3, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] > 2.9 and v.co[2] < 3.1:

print("East, 3, 2+")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > 3.4 and v.co[2] < 3.6:

print("East, 3.5, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > 3.4 and v.co[2] < 3.6:

print("East, 3.5, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > 3.4 and v.co[2] < 3.6:

print("East, 3.5, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > 3.4 and v.co[2] < 3.6:

print("East, 3.5, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] > 3.4 and v.co[2] < 3.6:

print("East, 3.5, 2+")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > 3.9 and v.co[2] < 4.1:

print("East, 4, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > 3.9 and v.co[2] < 4.1:

print("East, 4, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > 3.9 and v.co[2] < 4.1:

print("East, 4, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > 3.9 and v.co[2] < 4.1:

print("East, 4, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] > 3.9 and v.co[2] < 4.1:

print("East, 4, 2+")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > 4.4 and v.co[2] < 4.6:

print("East, 4.5, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > 4.4 and v.co[2] < 4.6:

print("East, 4.5, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > 4.4 and v.co[2] < 4.6:

print("East, 4.5, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > 4.4 and v.co[2] < 4.6:

print("East, 4.5, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] > 4.4 and v.co[2] < 4.6:

print("East, 4.5, 2+")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > 4.9 and v.co[2] < 5.1:

print("East, 5, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > 4.9 and v.co[2] < 5.1:

print("East, 5, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > 4.9 and v.co[2] < 5.1:

print("East, 5, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > 4.9 and v.co[2] < 5.1:

print("East, 5, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] > 4.9 and v.co[2] < 5.1:

print("East, 5, 2+")

v.select = True

##North

if v.co[0] < 0.6 and v.co[0] > 0.4 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 0.5, 0-0.5")

v.select = True

if v.co[0] < 0.6 and v.co[0] > 0.4 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 0.5, 0.5-1")

v.select = True

if v.co[0] < 0.6 and v.co[0] > 0.4 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 0.5, 1-1.5")

v.select = True

if v.co[0] < 0.6 and v.co[0] > 0.4 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 0.5, 1.5-2")

v.select = True

if v.co[0] < 0.6 and v.co[0] > 0.4 and v.co[1] > 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 0.5, 2+")

v.select = True

if v.co[0] < 1.1 and v.co[0] > 0.9 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 1, 0-0.5")

v.select = True

if v.co[0] < 1.1 and v.co[0] > 0.9 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 1, 0.5-1")

v.select = True

if v.co[0] < 1.1 and v.co[0] > 0.9 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 1, 1-1.5")

v.select = True

if v.co[0] < 1.1 and v.co[0] > 0.9 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 1, 1.5-2")

v.select = True

if v.co[0] < 1.1 and v.co[0] > 0.9 and v.co[1] > 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 1, 2+")

v.select = True

if v.co[0] < 1.6 and v.co[0] > 1.4 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 1.5, 0-0.5")

v.select = True

if v.co[0] < 1.6 and v.co[0] > 1.4 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 1.5, 0.5-1")

v.select = True

if v.co[0] < 1.6 and v.co[0] > 1.4 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 1.5, 1-1.5")

v.select = True

if v.co[0] < 1.6 and v.co[0] > 1.4 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 1.5, 1.5-2")

v.select = True

if v.co[0] < 1.6 and v.co[0] > 1.4 and v.co[1] > 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 1.5, 2+")

v.select = True

if v.co[0] < 2.1 and v.co[0] > 1.9 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 2, 0-0.5")

v.select = True

if v.co[0] < 2.1 and v.co[0] > 1.9 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 2, 0.5-1")

v.select = True

if v.co[0] < 2.1 and v.co[0] > 1.9 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 2, 1-1.5")

v.select = True

if v.co[0] < 2.1 and v.co[0] > 1.9 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 2, 1.5-2")

v.select = True

if v.co[0] < 2.1 and v.co[0] > 1.9 and v.co[1] > 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 2, 2+")

v.select = True

if v.co[0] < 2.6 and v.co[0] > 2.4 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 2.5, 0-0.5")

v.select = True

if v.co[0] < 2.6 and v.co[0] > 2.4 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 2.5, 0.5-1")

v.select = True

if v.co[0] < 2.6 and v.co[0] > 2.4 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 2.5, 1-1.5")

v.select = True

if v.co[0] < 2.6 and v.co[0] > 2.4 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 2.5, 1.5-2")

v.select = True

if v.co[0] < 2.6 and v.co[0] > 2.4 and v.co[1] > 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 2.5, 2+")

v.select = True

if v.co[0] < 3.1 and v.co[0] > 2.9 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 3, 0-0.5")

v.select = True

if v.co[0] < 3.1 and v.co[0] > 2.9 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 3, 0.5-1")

v.select = True

if v.co[0] < 3.1 and v.co[0] > 2.9 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 3, 1-1.5")

v.select = True

if v.co[0] < 3.1 and v.co[0] > 2.9 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 3, 1.5-2")

v.select = True

if v.co[0] < 3.1 and v.co[0] > 2.9 and v.co[1] > 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 3, 2+")

v.select = True

if v.co[0] < 3.6 and v.co[0] > 3.4 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 3.5, 0-0.5")

v.select = True

if v.co[0] < 3.6 and v.co[0] > 3.4 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 3.5, 0.5-1")

v.select = True

if v.co[0] < 3.6 and v.co[0] > 3.4 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 3.5, 1-1.5")

v.select = True

if v.co[0] < 3.6 and v.co[0] > 3.4 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 3.5, 1.5-2")

v.select = True

if v.co[0] < 3.6 and v.co[0] > 3.4 and v.co[1] > 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 3.5, 2+")

v.select = True

if v.co[0] < 4.1 and v.co[0] > 3.9 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 4, 0-0.5")

v.select = True

if v.co[0] < 4.1 and v.co[0] > 3.9 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 4, 0.5-1")

v.select = True

if v.co[0] < 4.1 and v.co[0] > 3.9 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 4, 1-1.5")

v.select = True

if v.co[0] < 4.1 and v.co[0] > 3.9 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 4, 1.5-2")

v.select = True

if v.co[0] < 4.1 and v.co[0] > 3.9 and v.co[1] > 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 4, 2+")

v.select = True

if v.co[0] < 4.6 and v.co[0] > 4.1 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 4.5, 0-0.5")

v.select = True

if v.co[0] < 4.6 and v.co[0] > 4.1 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 4.5, 0.5-1")

v.select = True

if v.co[0] < 4.6 and v.co[0] > 4.1 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 4.5, 1-1.5")

v.select = True

if v.co[0] < 4.6 and v.co[0] > 4.1 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 4.5, 1.5-2")

v.select = True

if v.co[0] < 4.6 and v.co[0] > 4.1 and v.co[1] > 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 4.5, 2+")

v.select = True

if v.co[0] < 5.1 and v.co[0] > 4.9 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 5, 0-0.5")

v.select = True

if v.co[0] < 5.1 and v.co[0] > 4.9 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 5, 0.5-1")

v.select = True

if v.co[0] < 5.1 and v.co[0] > 4.9 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 5, 1-1.5")

v.select = True

if v.co[0] < 5.1 and v.co[0] > 4.9 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("North, 5, 1.5-2")

v.select = True

if v.co[0] < 5.1 and v.co[0] > 4.9 and v.co[1] > 2 and v.co[2] < -4.9 and v.co[2] > -5.1:

print("North, 5, 2+")

v.select = True

##West

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] < -0.4 and v.co[2] > -0.6:

print("West, 0.5, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] < -0.4 and v.co[2] > -0.6:

print("West, 0.5, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] < -0.4 and v.co[2] > -0.6:

print("West, 0.5, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] < -0.4 and v.co[2] > -0.6:

print("West, 0.5, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] < -0.4 and v.co[2] > -0.6:

print("West, 0.5, 2+")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] < -0.9 and v.co[2] > -1.1:

print("West, 1, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] < -0.9 and v.co[2] > -1.1:

print("West, 1, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] < -0.9 and v.co[2] > -1.1:

print("West, 1, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] < -0.9 and v.co[2] > -1.1:

print("West, 1, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] < -0.9 and v.co[2] > -1.1:

print("West, 1, 2+")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] < -1.4 and v.co[2] > -1.6:

print("West, 1.5, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] < -1.4 and v.co[2] > -1.6:

print("West, 1.5, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] < -1.4 and v.co[2] > -1.6:

print("West, 1.5, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] < -1.4 and v.co[2] > -1.6:

print("West, 1.5, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] < -1.4 and v.co[2] > -1.6:

print("West, 1.5, 2+")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] < -1.9 and v.co[2] > -2.1:

print("West, 2, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] < -1.9 and v.co[2] > -2.1:

print("West, 2, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] < -1.9 and v.co[2] > -2.1:

print("West, 2, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] < -1.9 and v.co[2] > -2.1:

print("West, 2, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] < -1.9 and v.co[2] > -2.1:

print("West, 2, 2+")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] < -2.4 and v.co[2] > -2.6:

print("West, 2.5, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] < -2.4 and v.co[2] > -2.6:

print("West, 2.5, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] < -2.4 and v.co[2] > -2.6:

print("West, 2.5, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] < -2.4 and v.co[2] > -2.6:

print("West, 2.5, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] < -2.4 and v.co[2] > -2.6:

print("West, 2.5, 2+")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] < -2.9 and v.co[2] > -3.1:

print("West, 3, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] < -2.9 and v.co[2] > -3.1:

print("West, 3, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] < -2.9 and v.co[2] > -3.1:

print("West, 3, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] < -2.9 and v.co[2] > -3.1:

print("West, 3, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] < -2.9 and v.co[2] > -3.1:

print("West, 3, 2+")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] < -3.4 and v.co[2] > -3.6:

print("West, 3.5, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] < -3.4 and v.co[2] > -3.6:

print("West, 3.5, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] < -3.4 and v.co[2] > -3.6:

print("West, 3.5, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] < -3.4 and v.co[2] > -3.6:

print("West, 3.5, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] < -3.4 and v.co[2] > -3.6:

print("West, 3.5, 2+")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] < -3.9 and v.co[2] > -4.1:

print("West, 4, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] < -3.9 and v.co[2] > -4.1:

print("West, 4, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] < -3.9 and v.co[2] > -4.1:

print("West, 4, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] < -3.9 and v.co[2] > -4.1:

print("West, 4, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] < -3.9 and v.co[2] > -4.1:

print("West, 4, 2+")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] < -4.4 and v.co[2] > -4.6:

print("West, 4.5, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] < -4.4 and v.co[2] > -4.6:

print("West, 4.5, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] < -4.4 and v.co[2] > -4.6:

print("West, 4.5, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] < -4.4 and v.co[2] > -4.6:

print("West, 4.5, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] < -4.4 and v.co[2] > -4.6:

print("West, 4.5, 2+")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] < -4.9 and v.co[2] > -5.1:

print("West, 5, 0-0.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] < -4.9 and v.co[2] > -5.1:

print("West, 5, 0.5-1")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] < -4.9 and v.co[2] > -5.1:

print("West, 5, 1-1.5")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] < -4.9 and v.co[2] > -5.1:

print("West, 5, 1.5-2")

v.select = True

if v.co[0] < 0.25 and v.co[0] > -0.25 and v.co[1] > 2 and v.co[2] < -4.9 and v.co[2] > -5.1:

print("West, 5, 2+")

v.select = True

##South

if v.co[0] > -0.6 and v.co[0] < -0.4 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 0.5, 0-0.5")

v.select = True

if v.co[0] > -0.6 and v.co[0] < -0.4 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 0.5, 0.5-1")

v.select = True

if v.co[0] > -0.6 and v.co[0] < -0.4 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 0.5, 1-1.5")

v.select = True

if v.co[0] > -0.6 and v.co[0] < -0.4 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 0.5, 1.5-2")

v.select = True

if v.co[0] > -0.6 and v.co[0] < -0.4 and v.co[1] > 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 0.5, 2+")

v.select = True

if v.co[0] > -1.1 and v.co[0] < -0.9 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 1, 0-0.5")

v.select = True

if v.co[0] > -1.1 and v.co[0] < -0.9 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 1, 0.5-1")

v.select = True

if v.co[0] > -1.1 and v.co[0] < -0.9 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 1, 1-1.5")

v.select = True

if v.co[0] > -1.1 and v.co[0] < -0.9 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 1, 1.5-2")

v.select = True

if v.co[0] > -1.1 and v.co[0] < -0.9 and v.co[1] > 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 1, 2+")

v.select = True

if v.co[0] > -1.6 and v.co[0] < -1.4 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 1.5, 0-0.5")

v.select = True

if v.co[0] > -1.6 and v.co[0] < -1.4 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 1.5, 0.5-1")

v.select = True

if v.co[0] > -1.6 and v.co[0] < -1.4 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 1.5, 1-1.5")

v.select = True

if v.co[0] > -1.6 and v.co[0] < -1.4 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 1.5, 1.5-2")

v.select = True

if v.co[0] > -1.6 and v.co[0] < -1.4 and v.co[1] > 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 1.5, 2+")

v.select = True

if v.co[0] > -2.1 and v.co[0] < -1.9 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 2, 0-0.5")

v.select = True

if v.co[0] > -2.1 and v.co[0] < -1.9 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 2, 0.5-1")

v.select = True

if v.co[0] > -2.1 and v.co[0] < -1.9 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 2, 1-1.5")

v.select = True

if v.co[0] > -2.1 and v.co[0] < -1.9 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 2, 1.5-2")

v.select = True

if v.co[0] > -2.1 and v.co[0] < -1.9 and v.co[1] > 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 2, 2+")

v.select = True

if v.co[0] > -2.6 and v.co[0] < -2.4 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 2.5, 0-0.5")

v.select = True

if v.co[0] > -2.6 and v.co[0] < -2.4 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 2.5, 0.5-1")

v.select = True

if v.co[0] > -2.6 and v.co[0] < -2.4 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 2.5, 1-1.5")

v.select = True

if v.co[0] > -2.6 and v.co[0] < -2.4 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 2.5, 1.5-2")

v.select = True

if v.co[0] > -2.6 and v.co[0] < -2.4 and v.co[1] > 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 2.5, 2+")

v.select = True

if v.co[0] > -3.1 and v.co[0] < -2.9 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 3, 0-0.5")

v.select = True

if v.co[0] > -3.1 and v.co[0] < -2.9 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 3, 0.5-1")

v.select = True

if v.co[0] > -3.1 and v.co[0] < -2.9 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 3, 1-1.5")

v.select = True

if v.co[0] > -3.1 and v.co[0] < -2.9 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 3, 1.5-2")

v.select = True

if v.co[0] > -3.1 and v.co[0] < -2.9 and v.co[1] > 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 3, 2+")

v.select = True

if v.co[0] > -3.6 and v.co[0] < -3.4 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 3.5, 0-0.5")

v.select = True

if v.co[0] > -3.6 and v.co[0] < -3.4 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 3.5, 0.5-1")

v.select = True

if v.co[0] > -3.6 and v.co[0] < -3.4 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 3.5, 1-1.5")

v.select = True

if v.co[0] > -3.6 and v.co[0] < -3.4 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 3.5, 1.5-2")

v.select = True

if v.co[0] > -3.6 and v.co[0] < -3.4 and v.co[1] > 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 3.5, 2+")

v.select = True

if v.co[0] > -4.1 and v.co[0] < -3.9 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 4, 0-0.5")

v.select = True

if v.co[0] > -4.1 and v.co[0] < -3.9 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 4, 0.5-1")

v.select = True

if v.co[0] > -4.1 and v.co[0] < -3.9 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 4, 1-1.5")

v.select = True

if v.co[0] > -4.1 and v.co[0] < -3.9 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 4, 1.5-2")

v.select = True

if v.co[0] > -4.1 and v.co[0] < -3.9 and v.co[1] > 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 4, 2+")

v.select = True

if v.co[0] > -4.6 and v.co[0] < -4.1 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 4.5, 0-0.5")

v.select = True

if v.co[0] > -4.6 and v.co[0] < -4.1 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 4.5, 0.5-1")

v.select = True

if v.co[0] > -4.6 and v.co[0] < -4.1 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 4.5, 1-1.5")

v.select = True

if v.co[0] > -4.6 and v.co[0] < -4.1 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 4.5, 1.5-2")

v.select = True

if v.co[0] > -4.6 and v.co[0] < -4.1 and v.co[1] > 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 4.5, 2+")

v.select = True

if v.co[0] > -5.1 and v.co[0] < -4.9 and v.co[1] > 0 and v.co[1] < 0.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 5, 0-0.5")

v.select = True

if v.co[0] > -5.1 and v.co[0] < -4.9 and v.co[1] > 0.5 and v.co[1] < 1 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 5, 0.5-1")

v.select = True

if v.co[0] > -5.1 and v.co[0] < -4.9 and v.co[1] > 1 and v.co[1] < 1.5 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 5, 1-1.5")

v.select = True

if v.co[0] > -5.1 and v.co[0] < -4.9 and v.co[1] > 1.5 and v.co[1] < 2 and v.co[2] > -0.25 and v.co[2] < 0.25:

print("South, 5, 1.5-2")

v.select = True

if v.co[0] > -5.1 and v.co[0] < -4.9 and v.co[1] > 2 and v.co[2] < -4.9 and v.co[2] > -5.1:

print("South, 5, 2+")

v.select = True

#switch to EDIT MODE

bpy.ops.object.mode\_set(mode='EDIT')