import random

import math

file\_1 = open("input\_file\_1.txt", 'r')

print("Please enter your student id: ", end="")

id = file\_1.readline()

id = id.replace('0', "8")

print(id)

file\_1.close()

lowest\_point = int(id[5 - 1])

win = int(id[-1:-3:-1])

highest\_point = math.ceil(win \*1.5)

print("minimum point",lowest\_point)

print("maximum point",highest\_point)

empty\_lst = []

def max\_function(tree,lvl, idx, alpha, beta) :

if lvl == 3:

return tree[idx]

x\_prime = None

store = None

x\_prime = min\_function(tree,lvl+1, idx\*2,alpha,beta)

if store == None or x\_prime > store:

store = x\_prime

elif x\_prime >= beta:

return store

elif x\_prime > alpha:

alpha = x\_prime

#---------------------------------------------------

x\_prime = min\_function(tree,lvl + 1, (idx \* 2) + 1, alpha, beta)

if store == None or x\_prime > store:

store = x\_prime

elif x\_prime >= beta :

return store

elif x\_prime > alpha:

alpha = x\_prime

return store

def min\_function(tree,lvl, idx, alpha, beta):

if lvl == 3:

return tree[idx]

x\_prime = None

store = None

#---------------------------------------------------

x\_prime = max\_function(tree, lvl + 1, idx \* 2, alpha, beta)

if store == None or x\_prime < store:

store = x\_prime

elif x\_prime <= alpha:

return store

elif x\_prime < beta:

beta = x\_prime

x\_prime = max\_function(tree, lvl + 1, (idx \* 2) + 1, alpha, beta)

if store == None or x\_prime < store:

store = x\_prime

elif x\_prime <= alpha:

return store

elif x\_prime < beta:

beta = x\_prime

return store

#---------------------------------------------------

def AlphaBeta\_pruning(tree):

return max\_function(tree, 0, 1, -math.inf, math.inf)

temp\_tree = [None, 'Max1', 'Min1', 'Min2', 'Max3', 'Max4', 'Max5', 'Max6']

for idx in range(8):

empty\_lst.append(random.randint(lowest\_point, highest\_point))

sum = temp\_tree +empty\_lst

optimus\_point = AlphaBeta\_pruning(sum)

print("8 random points between the min & max point limits:",empty\_lst)

print("Total points to win the game:", win)

print("point if we apply alpha-beta pruning =", optimus\_point)

if optimus\_point >= win:

print("The winner is Optimus Prime !!!!")

if optimus\_point < win :

print("The Winner is Megatron !!!!")