import random

stid = input('Enter your student ID: ')

stud = ''

for i in stid:

if i == '0':

stud += '8'

else:

stud += i

mini = int(stud[4])

win = int(stid[-1] + stid[-2])

maxi = int(win \* 1.5)

rlist = [random.randint(mini, maxi) for x in range(8)]

def alpha\_beta(position, depth, optimus, alpha, beta, val):

if depth == 0:

return val[position]

if optimus:

imax = float('-inf')

for i in range(2):

i += position \* 2

nval = alpha\_beta(i, depth - 1 , False, alpha, beta, val)

imax = max(imax, nval)

alpha = max(imax, alpha)

if alpha >= beta:

break

return imax

else:

imin = float('inf')

for i in range(2):

i += position \* 2

nval = alpha\_beta(i, depth - 1, True, alpha, beta, val)

imin = min(imin, nval)

beta = min(imin, beta)

if alpha >= beta:

break

return imin

wpoints = alpha\_beta(0, 3, True, float('-inf'), float('inf'), rlist)

print('Generated 8 random points between the minimum and maximum point limits: ', rlist)

print('Total points to win: ', win)

print('Achieved point by applying alpha-beta pruning = ', wpoints)

if wpoints >= win:

print('The winner is Optimus Prime')

else:

print('The winner is Megatron')

j = 0

shuffle = []

winc = 0

wlist = []

while j < int(stud[3]):

shuffle = random.sample(rlist, len(rlist))

winres = alpha\_beta(0, 3, True, float('-inf'), float('inf'), shuffle)

wlist.append(winres)

if winres >= win:

winc += 1

j += 1

print('\nAfter the shuffle: ')

print('List of all points values from each shuffles: ', wlist)

print('The maximum value of all shuffles:', max(wlist))

print(f'Won {winc} times out of {stud[3]} number of shuffles')