#task1

f\_input = open("input.txt","r")

f\_output = open("output1.txt","w")

arr = []

printed = []

counted = []

for i in f\_input:

arr.append(i.split())

def finder(arr, row, col, count):

affect = []

count += 1

printed.append([row, col])

if col - 1 >= 0:

if arr[row][col] == arr[row][col - 1]:

affect.append([row, col - 1])

if col + 1 < len(arr[0]):

if arr[row][col] == arr[row][col + 1]:

affect.append([row, col + 1])

if row + 1 < len(arr):

if col - 1 >= 0:

if arr[row][col] == arr[row + 1][col - 1]:

affect.append([row + 1, col - 1])

if arr[row][col] == arr[row + 1][col]:

affect.append([row + 1, col])

if col + 1 < len(arr[0]):

if arr[row][col] == arr[row + 1][col + 1]:

affect.append([row + 1, col + 1])

if row - 1 >= 0 and col - 1 >= 0:

if arr[row][col] == arr[row - 1][col - 1]:

affect.append([row - 1, col - 1])

if arr[row][col] == arr[row - 1][col]:

affect.append([row - 1, col])

if col + 1 < len(arr[0]):

if arr[row][col] == arr[row - 1][col + 1]:

affect.append([row - 1, col + 1])

for i, j in affect:

if [i, j] not in printed:

count = finder(arr, i, j, count)

return count

for row in range(len(arr)):

for col in range(len(arr[0])):

count = 0

if arr[row][col] == "Y":

if [row, col] not in printed:

counted.append(finder(arr, row, col, count))

f\_output.write(str(max(counted)))

f\_input.close()

f\_output.close()

#task 2

from operator import itemgetter

f\_input = open("Question2 input2.txt","r")

f\_output = open("output2.txt","w")

row = int(f\_input.readline())

col = int(f\_input.readline())

arr = []

for i in range(row):

arr.append(f\_input.readline().split())

printed = []

a = [[idx, row.index("A"), 0] for idx, row in enumerate(arr) if "A" in row]

h = sum(row.count("H") for row in arr)

def aliens(arr, loc, Q, printed):

a[loc][2] = Q[0][2]

if(Q[0][0]-1 >= 0 and arr[Q[0][0]-1][Q[0][1]] == 'H'):

Q.append([Q[0][0]-1,Q[0][1], Q[0][2]+1])

arr[Q[0][0]-1][Q[0][1]] = 'A'

if(Q[0][1]-1 >= 0 and arr[Q[0][0]][Q[0][1]-1] == 'H'):

Q.append([Q[0][0],Q[0][1]-1, Q[0][2]+1])

arr[Q[0][0]][Q[0][1]-1] = 'A'

if(Q[0][1]+1 < len(arr[0]) and arr[Q[0][0]][Q[0][1]+1] == 'H'):

Q.append([Q[0][0],Q[0][1]+1, Q[0][2]+1])

arr[Q[0][0]][Q[0][1]+1] = 'A'

if(Q[0][0]+1 < len(arr) and arr[Q[0][0]+1][Q[0][1]] == 'H'):

Q.append([Q[0][0]+1,Q[0][1], Q[0][2]+1])

arr[Q[0][0]+1][Q[0][1]] = 'A'

printed.append([Q[0][0],Q[0][1], Q[0][2]])

Q.pop(0)

if len(Q) != 0 :

if Q[0] not in printed:

aliens(arr, loc, Q, printed)

for loc in range(len(a)):

Q = []

Q.append([a[loc][0], a[loc][1], 0])

aliens(arr, loc, Q, printed)

mt = []

for row in a:

mt.append(row[2])

f\_output.write("Time: "+str(max(mt))+" minutes\n")

sur = str(sum(row.count("H") for row in arr))

if sur != str(0):

f\_output.write(sur+" Survived")

else:

f\_output.write("No one Survived")

f\_input.close()

f\_output.close()