**Solutions TE Week 6**

**Problem Statement: Manage Candies**

**Solution:**

Python:

#!/bin/python3

import math

import os

import random

import re

import sys

def minimumPasses(m, w, p, n):

candy = 0

invest = 0

spend = sys.maxsize

while candy < n:

passes = (p - candy) // (m \* w)

if passes <= 0:

mw = (candy // p) + m + w

half = math.ceil(mw / 2)

if m > w:

m = max(m, half)

w = mw - m

else:

w = max(w, half)

m = mw - w

candy %= p

passes = 1

candy += passes \* m \* w

invest += passes

spend = min(spend, invest + math.ceil((n - candy) / (m \* w)))

return min(invest, spend)

if \_\_name\_\_ == '\_\_main\_\_':

fptr = open(os.environ['OUTPUT\_PATH'], 'w')

first\_multiple\_input = input().rstrip().split()

m = int(first\_multiple\_input[0])

w = int(first\_multiple\_input[1])

p = int(first\_multiple\_input[2])

n = int(first\_multiple\_input[3])

result = minimumPasses(m, w, p, n)

fptr.write(str(result) + '\n')

fptr.close()

**Problem Statement: Crossword Puzzle**

**Solution:**

C++:

#include <bits/stdc++.h>

using namespace std;

string ltrim(const string &);

string rtrim(const string &);

vector<string> grid(10);

vector<string> words;

bool f;

void call(int ind)

{

if(!f) {

return;

}

if(ind == words.size()) {

if(f) {

for(auto word: grid) {

cout<<word<<endl;

}

f=false;

}

return;

}

int i,j,p,q,k;

for(i=0;i<10;++i) {

for(j=0;j<10;++j) {

p=i,q=j;

for(k=0;k<words[ind].size() && p+k<10;++k) {

if(grid[p+k][q] != '-' && grid[p+k][q] != words[ind][k]) {

break;

}

}

if(k==words[ind].size()) {

vector<string> temp = grid;

for(k=0;k<words[ind].size();++k) {

grid[p+k][q] = words[ind][k];

}

call(ind+1);

grid = temp;

}

for(k=0;k<words[ind].size() && q+k<10;++k) {

if(grid[p][q+k] != '-' && grid[p][q+k] != words[ind][k]) {

break;

}

}

if(k==words[ind].size()) {

vector<string> temp = grid;

for(k=0;k<words[ind].size();++k) {

grid[p][q+k] = words[ind][k];

}

call(ind+1);

grid = temp;

}

}

}

}

int main()

{

f=true;

int i,j;

for(i=0;i<10;++i) {

cin>>grid[i];

}

string s,w;

cin>>w;

for(auto x: w) {

if(x==';') {

words.push\_back(s);

s="";

} else

s+=x;

}

words.push\_back(s);

call(0);

return 0;

}