import java.util.ArrayList;

import java.util.List;

public class SILab2 { **//A**

public static List<String> function(List<String> list) { **//B**

if (list.size() <= 0) **{ // C**

throw new IllegalArgumentException("List length should be greater than 0"); **//D**

}

int n = list.size(); **//E**

int rootOfN = (int) Math.sqrt(n); **//E**

if (rootOfN \* rootOfN != n) { **//E**

throw new IllegalArgumentException("List length should be a perfect square"); **//F**

}

List<String> numMines = new ArrayList<>(); **//G**

for (int i = 0; i < n; i++) { **//G**

if (!list.get(i).equals("#")) { **//H**

int num = 0; **//I**

if ( (i % rootOfN != 0 && list.get(i - 1).equals("#")) || (i % rootOfN != rootOfN - 1 && list.get(i + 1).equals("#")) ) { **//I**

if ( (i % rootOfN != 0 && list.get(i - 1).equals("#")) && (i % rootOfN != rootOfN - 1 && list.get(i + 1).equals("#")) ){ **//J**

num += 2; **//K**

}

else {

num += 1; **//L**

}

}

if (i - rootOfN >= 0 && list.get(i - rootOfN).equals("#")){**//M**

num++; **//N**

}

if (i + rootOfN < n && list.get(i + rootOfN).equals("#")){**//O**

num++; **//P**

}

numMines.add(String.valueOf(num)); **//Q**

}

else {

numMines.add(list.get(i)); **//R**

}

}

return numMines; **//S**

}

}

