Problem No. 1: Maze Escape

A maze is a puzzle where you have a goal and destination to reach while avoiding obstacles in the path. Given a matrix of length NxM find the number of paths that are possible to reach 0,0 to N,M When the only steps you can take are go right or down ONLY!

example:

Lets look at the following maze

```
3 3
000
100
010
```

the above maze only has 2 paths that can reach 3,3 either you go all the way right then down or go right, down,right,down so the result will be 2.

You are expected to make a code that can work on any length of maze given by the first two numbers in the input File.txt

INPUT FILE

```
5 5
00000
11000
01100
11100
00010
```

OUTPUT FILE

```
7
```

Problem No. 2 Largest Palindrome in a Linked List

A palindrome is a word, phrase, number or sequence of words that reads the same backward as forward. Punctuation and spaces between the words or lettering is allowed. Hence there are multiple categories of Palindromes. For example: Single Word Palindrome like Madam, Multiple Words Palindromes like: “Step on no pets” and “was it a cat I saw” Number Palindromes like 191 and 123321. Given an Integer Array of some content, an array palindrome is defined as the sub-array whose contents concatenated form a palindrome. For example, A [5] = {1, 21,12,1,9} contains a palindrome from index 0-3 – by seeing 121121 together. Similarly, we can have a palindrome in a linked list, example given below:

Linked List L1(Head) → 12451 → 11342 → 11211 → 4318 → 12 → 1 →X

You need to find the largest such palindrome possible in the content of the linked list, assume the singly linked list is used to store content. You program should decide about the longest possible palindrome.

Input Format

The input file gives you, number of nodes in the singly linked list as positive integer (n), the next lines n lines give you integers to hold in the n nodes. For the given example there are 6 nodes in the given list.

```
6
12451
11342
11211
4318
12
1
```

Output Format

The output file contains the longest possible palindrome using the content of the list from any position to any other position within the node or spanning the nodes.

```
11211
```