code jam

hello, world!

Round 3 2009

Contest Analysis

Questions asked

– Submissions

EZ-Sokoban

| 7pt | Not attempted **231/262 users** correct (88%) |
| 10pt | Not attempted **158/219 users** correct (72%) |

Alphabetomials

| 4pt | Not attempted **186/225 users** correct (83%) |
| 20pt | Not attempted **37/71 users** correct (52%) |

Football Team

| 8pt | Not attempted **36/138 users** correct (26%) |
| 19pt | Not attempted **16/36 users** correct (44%) |

Interesting Ranges

| 9pt | Not attempted **24/41 users** correct (59%) |
| 23pt | Not attempted **1/3 users** correct (33%) |

– Top Scores

bmerry	77
qizichao	77
winger	68
Ahyangyi	68
misof	50
rem	50
kia	50
mystic	50
marek.cygan	50
dzhulgakov	50

Problem D. Interesting Ranges

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the **Quick-Start Guide** to get started.

| Small input 9 points | [Solve D-small] |
| Large input 23 points | [Solve D-large] |

Problem

A positive integer is a *palindrome* if its decimal representation (without leading zeros) is a palindromic string (a string that reads the same forwards and backwards). For example, the numbers 5, 77, 363, 4884, 11111, 12121 and 349943 are palindromes.

A range of integers is *interesting* if it contains an even number of palindromes. The range [L, R], with L ≤ R, is defined as the sequence of integers from L to R (inclusive): (L, L+1, L+2, ..., R-1, R). L and R are the range's first and last numbers.

The range $[L_1, R_1]$ is a *subrange* of [L,R] if $L \le L_1 \le R_1 \le R$. Your job is to determine how many interesting subranges of [L,R] there are.

Input

The first line of input gives the number of test cases, **T**. **T** test cases follow. Each test case is a single line containing two positive integers, **L** and **R** (in that order), separated by a space.

Output

For each test case, output one line. That line should contain "Case #x: y", where x is the case number starting with 1, and y is the number of interesting subranges of [L,R], modulo 1000000007.

Limits

$1 \le \mathbf{T} \le 120$

Small dataset

$1 \le \mathbf{L} \le \mathbf{R} \le 10^{13}$

Large dataset

$1 \le \mathbf{L} \le \mathbf{R} \le 10^{100}$

Sample

```
Input       Output

3           Case #1: 1
1 2         Case #2: 12
1 7         Case #3: 2466
12 110
```

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