Assignment #1

January 7, 2009

1 All common subsequences

1.1 Problem Statement

Given two strings $a = a_1a_2 \ldots a_n$ and $b = b_1b_2 \ldots b_n$ consisting of only alphanumeric characters, you have to ouput the number of common subsequences of these two strings.

1.2 Input Format:

First line has single integer N which deonotes the number of test cases. The next N lines each describe a test case. Each of these lines have two strings which are sperated by a space. $0 < n < 16$ and $0 < m < 16$

1.3 Output Format:

N lines corresponding to N test cases.

1.4 Sample Input

```
2
aaa abaa
xabxxc acbx
```

1.5 Sample Output:

```
3
9
```

2 Parenthesis

2.1 Problem Statement

A proper braketted expression is one in which all opening and closing braces are matched. In this problem we consider three types of braces ()$\{\}[]$ if s and p are proper expressions then

- (s), $[s]$, $\{s\}$ are also proper
- $(s)\{p\}$, $(s)(p)$, ... are also proper

Your task is to output the number of proper expressions of length $L(0 < L < 20)$

2.2 Input Format:

First line has single integer N which deonotes the number of test cases. The next N lines each describe a test case. Each of these lines will have an integer describing the test case.

2.3 Output Format:

N lines corresponding to N test cases.

2.4 Sample Input

```
3
1
2
3
```

2.5 Sample Output:

```
0
3
0
```

3 Hindi Number system

3.1 Problem Statement

In this problem, given a number H you have to output the way it is spelled in Hindi words. For example you spell 1 as *eka*. The word representation of first 100 numbers will be provided to you.

3.2 Input Format:

First line has single integer N which deonotes the number of test cases. The next N lines each describe a test case. Each of these lines will have an integer describing the test case.

3.3 Output Format:

N lines corresponding to N test cases.

3.4 Sample Input

```
3
1
100
200
```

3.5 Sample Output:

```
eka
s0
xo s0
```

3.6 References

The words corresponding to first 100 hindi numbers can be found here references