

5431 Slurpys

Recognizing strings based on a set of restrictions is a common computational problem.

A Slurpy is a string of characters that has certain properties. Your program will read in strings of characters and output whether or not they are Slurpys.

A **Slump** is a character string that has the following properties:

1. Its first character is either a 'D' or an 'E'.
2. The first character is followed by a string of one or more 'F's.
3. The string of one or more 'F's is followed by either a Slump or a 'G'. The Slump or 'G' that follows the F's ends the Slump. For example DFFEFFFG is a Slump since it has a 'D' for its first character, followed by a string of two F's, and ended by the Slump 'EFFFG'.
4. Nothing else is a Slump.

A **Slimp** is a character string that has the following properties:

1. Its first character is an 'A'.
2. If it is a two character Slimp then its second and last character is an 'H'.
3. If it is not a two character Slimp then it is in one of these two forms:
 - a) 'A' followed by 'B' followed by a Slimp followed by a 'C'.
 - b) 'A' followed by a Slump (see above) followed by a 'C'.
4. Nothing else is a Slimp.

A **Slurpy** is a character string that consists of a Slimp followed by a Slump.

Examples:

Slumps:	DFG, EFG, DFFFFFFG, DFDFDFDFG, DFEFFFFFFG
Not Slumps:	DFEFF, EFAHG, DEFG, DG, EFFFFDG
Slimps:	AH, ABAHC, ABABAHCC, ADFGC, ADFFFFFFGC, ABAEFGCC, ADFDFGC
Not Slimps:	ABC, ABAH, DFGC, ABABAH, SLIMP, ADGC
Slurpys:	AHDFG, ADFGCDFFFFFFFG, ABAEFGCCDFEFFFFFFG
Not Slurpys:	AHDFGA, DFGAH, ABABCC

Input

The first line contains an integer N between 1 and 10 describing how many strings of characters are represented. The next N lines each contain a string of 1 to 60 alpha characters.

Output

The first line of output should read 'SLURPYS OUTPUT'. Each of the next N lines of output should consist of either 'YES' or 'NO' depending on whether or not the corresponding input line is a Slurpy. The last line of output should read 'END OF OUTPUT'.

Sample Input

```
2
AHDFG
DFGAH
```

Sample Output

```
SLURPYS OUTPUT
YES
NO
END OF OUTPUT
```