Code Jam 2009 - Qualification Round

Analysis: Alien Language

First we store all the words in a 2 dimensional array.
After that, we read each pattern, parse it, and count how many words match.

One possible way of storing a pattern is a 2 dimensional array P[15][26]. P[i][j] is True only if the **i**-th token contains the **j**-th letter of the alphabet, otherwise False. In other words, P[i] is a bitmap of the letters contained by the **i**-th token.

Parsing can be done like this:
- read one character **c**
- if **c** is '(', read characters until we hit ')'. The characters read are the token.
else the token is the character **c**
- populate P[i] for the characters in the token

To count how many words match, we make sure that each letter **i** from the word is contained in the bitmap P[i].

Total complexity is O(N * L * D).

In some programming languages this can solved by transforming the pattern into a regular expression. For instance in python replace '(' and ')' with '[' and ']'.