COMP 6651 - Programming Project

Summer 2023

Problem Statement: We are given a dictionary of size n containing words that use only English letters, and a regular expression (regex) pattern R that is limited only to letters, the dot symbol ('.'), and the star symbol ('$*$'). The goal is to find the longest common subsequence of at most three, alphabetically first words in the dictionary that match the regex pattern. The pattern matching should be case-insensitive. Note: Up to 80% of the overall grade can be achieved without supporting the star symbol ('$*$') in the regex pattern.

Input Format: The input will be given as a text file, located in the same folder as the program executable. The name of the file will be "input.txt". The first line of the input file is the integer n, followed by n lines of words that form the dictionary. The last line of the input file contains the string R.

Expected Output: The output should be stored in a text file with a single line representing the longest common subsequence of the first three words matching the pattern. The name of the file should be "output.txt".

Submission: Your submission will be a "student_id.zip" file with a folder named with your student id and containing the following files:

```
regex_matcher_<student_id>.[cpp, java, py, etc]
README_<student_id>.txt
```

Thus if the student id is 12345678 and the project is done in python then the 12345678.zip file should have a folder named 12345678, and inside that folder there should be the following files:

```
regex_matcher_12345678.[cpp, java, py, etc]
README_12345678.txt
```

The code must be well documented. All code required to run the project must be in the `regex_matcher_<student_id>.[cpp, java, py, etc]` file and a short description of your solution should be in the `README_<student_id>.txt` file.

Important Note: The accuracy, as well as the efficiency of the project, will be equally graded.

Example 1:
input.txt
4
AAABAA
AACBCA
AAABCA
DDEEDD
AA.B.A

output.txt
AABA

Example 2:
input.txt
6
Apple
Maple
Apply
Couple
Pledge
Please
..pl.

output.txt
apl