Assignment 1: KWIC

Submission Date & Time : **Monday 29 Aug 10AM** Weightage: 5%

Implementation Language : Java Type : Pair work

Description

Refer to the readings available in the IVLE workbin/Readings folder.

1. "On the criteria to be used in decomposing systems into modules" by D L Parnas
2. "An Introduction to Software Architecture" by David Garlan and Mary Shaw

These readings describe a KWIC (Key Word In Context) index system. KWIC provides a search mechanism for information in a list of lines. Given a list of lines and a list of ``words to ignore'', KWIC system should generate a KWIC (Key Word In Context) index of the input lines. In a KWIC-index, a line is listed once for each keyword that occurs in the line. The keyword cannot be in "words to ignore" . Also, KWIC-index is alphabetized by keyword.

How does KWIC work:
For each input line, it shall be “circularly shifted” exhaustively by removing the first word and appending it at the end of the line to create a set of circularly shifted lines. The first word (not including "words to ignore") will be the keyword. The system outputs a listing of the circularly shifted lines for all input lines in ascending alphabetical order. The keyword is often output with its starting letter in upper case and the rest in lower case.

For example, if the “words to ignore” are ***is, the, of, and, as, a, after*** and the input lines are movie titles *The Day after Tomorrow, Fast and Furious, Man of Steel*, the output should be as below:

Day after Tomorrow the
Fast and Furious
Furious Fast and
Man of Steel
Steel Man of
Tomorrow the Day after

Your Task

Choose **two** architectural designs mentioned in the KWIC case study-1 of Reading: An Introduction to Software Architecture" by David Garlan and Mary Shaw.

Implement a KWIC (Key Word In Context) index system for each of the selected designs. You are allowed to modify selected designs OR come up with your own new designs. Your KWIC system

should have easy to use user interface, a reasonable response time and extendable (new functions can be added easily).

Implement your designs in Java. Use Git repository. You can sign up for a free account at https://github.com. If you are not sure how to use Git, take a look at Pro Git book.

Submission Guidelines

1. This is a paired task. Split the work between two members. Clearly identify who implements which part.
2. Submit a report(about 2-5 pages) as a single PDF file in the folder A1-KWIC in IVLE workbin. Exceeding the page guideline of 2-5 pages does not invite any penalty.
3. Add your GIT repository URL in the report you submit.
4. A report template is provided for you at the end of this document.
5. Label the submitted document: `A1_<Matric-number-1>_<Matric-number-2>` e.g. A1_A0045396X_A0046342Y.
6. Demonstrate your work to tutors (Your tutor will arrange time with you for the demo)

Support

Contact tutors Samuel Lim or Bay Chuan Wei at **CS3219.kwic@gmail.com** in case of a query about this assignment.

--- report template ---

Assignment 1: KWIC CS3219 SEM1 2016/17

Code Repository URL:

Student Name		
Matriculation Number		

1. Introduction

(up to 1 paragraph)

2. Requirements

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3. Architectural Designs

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4. Limitation & Benefits of Selected Designs

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< add a section in case you have any other thing to list about your assignment>