Foundational Programming

Special Examination

Due: December 22th, 2024, 16:00 WIB

Preamble

Based on previous class feedback through onsite or offline meeting including your aspiration in English course. I take it, there is serious flaw in your thinking capacity, that make us conclude your fundamental spec is lacking. By regulation, your generation caliber are usually barred from entering the campus. But due to the necessity of funding which stems from government funding being exempted starting next year. It is known, last student acceptance basically disregard academic capability while put strong emphasize on parents financial values.

If you can read the meaning behind the passage basically, when you took written exam. Exam result been discarded while only put values on how much you were willing for the tuition fees. Indeed this was only happened for the self hosted entrance exam, but the ratio of this exam contributed to 50-60% of accepted students. But based on your feedback, it seems the real ratio instead about 80% of them. And I put more belief in my own data. Which becomes the reason for this special treatment.

Objectives

The goal of this exam is to truly measure your spec in finishing the tasks of the examn. There are 3 problems which divided into low, mid, high difficulty in the exam. These 3 difficulties are mapped to low but (still) qualified passing, mid passing, and high passing. Start from the lower tier difficulty to start, and stop when you feel the hardness is challenging. This is vary from person to person.

The score values obtained from the completion of the exam will amounted to **at least 75%** of your final score during the later half.

Constraint and Penalty

This exam is supposedly be done individually. Any matter aside from problem discussion is treated as illegal including:

- Discussing how to approach the problem

- Share codes

I will treat codes similarity as cheating, which could be stemming from the similarity in how you approach the problem. Thus we forbid the act. This will be apparent from mid to high level tasks.

You can only solve the problem with your own spec. For lower spectrum students, unless you spent 3 hours daily for programming, perhaps even they will struggle to solve the mid grade problem.

Evaluation

There will be programming exam next week according to the schedule. But give higher priority to this one. Be prepared for presentation session for this exam with separate schedule next week.

Problem 1

You are given some text files. Parse all of them into your own data structure. You data structure at the minimum stores the following information.

- Amount of words per article
- Total amount of words
- Word occurrences per article
- Total word occurrences
- Detected word conjunction
- alphanumeric occurrences per article and globally

Test your structure by printing all the above info to a terminal

Problem 2

Using the same database. Make your program to seek user query. A user will input at least **2 words**. The problem would return the most appropriate article to the user. At the same time, the program should automatically fill in the correct title for the related article.

Problem 3

Using the same database. Make your program to seek user query of at most a word. The program would give two kind of responses:

1. Top 5 most similar words lexically
2. Two most similar word in meaning.