EF234201 Data Structure (F)

Quiz 1

Starting date:	20 March 2024
Deadline:	27 March 2024, 23:59 WIB. **Penalty: 0.15% of grade/minute of tardiness.**
Exam type:	Open, Individual Project
Send to:	
	MM Irfan Subakti <yifana@gmail.com>
	CC to Hammuda Arsyad <hammudaarsyad@gmail.com>, Frederick Yonatan Susanto <frederickyonatan111@gmail.com>, Rakha Fathin Izzan Consetta <rakhaconsetta@gmail.com> & Muhammad Izzul Sinar Mahadhika <zulsinar031@gmail.com> with the subject: **EF234201_DS_F_Q1_StudentID_Name**
File type and format:	A **zip** file containing all of the **.cpp** (*source files*) & the **declaration**
Filename format:	**EF234201_DS_F_Q1_StudentID_Name.ZIP**

Instruction

Please do these steps as in the following.

1. Create a program that sorts the words in alphabetical order namely `01_sort_word_[your_studentID].cpp`. [**25 points**]

2. Find the first duplicate character in a string. Give the program's name: `02_find_dup_[your_studentID].cpp`. [**25 points**]

   Input:
   - string
   Output:
   - a single character which satisfies the condition.

   E.g.:
   Input:
   – `abbcbbca`
   Output:
   – `a`
   Input:
   – `abbcc`
   Output:
   – `b`
   Tips: the optimal solution is $O(n)$

3. Make a program in C++ that can search the amounts of money owned by persons. Print the amounts of money if there exists a person in the data, and print "`Not found`" if otherwise. Give the program's name: `03_search_money_[your_studentID].cpp` [**25 points**]

   Data:

Person	Money
Puspita	50
Bejo	35
Sarita	20
Pujo	45
Lestari	60

   Input 1
   ```
   Pujo
   ```
   Output 1
   ```
   45
   ```
   Input 2
   ```
   Komeng
   ```
   Output 2
   ```
   Not found
   ```

4. You are given an array of strings. Your task is to sort these strings based on their importance. The importance of a string is determined by two factors as below. Give the program's name: `04_exclamation_[your_studentID].cpp` [**25 points**]
   - The number of '!' characters it contains. More '!' characters imply higher importance.
   - If two strings have the same number of '!' characters, the longer string is considered less important.

   Write a C++ program to sort the array of strings from most to least important.

   Input
   ```
   !mportant
   not important at all
   meh
   Most Important!!!!
   how about this?
   important!
   ```
   Output
   ```
   Most Important!!!!
   !mportant
   important!
   meh
   how about this?
   not important at all
   ```

5. To avoid plagiarism/cheating, every student needs to pledge and declare, then she/he must submit her/his **signed pledge and declaration** as in the following. Failing to do so will result in getting a 0 (zero) grade. Attach the **scanned/photo** of your *declaration* in your report.

"By the name of Allah (God) Almighty, herewith I pledge and truly declare that I have solved quiz 1 by myself, didn't do any cheating by any means, didn't do any plagiarism, and didn't accept anybody's help by any means. I am going to accept all of the consequences by any means if it has proven that I have done any cheating and/or plagiarism."

[Place, e.g., Surabaya], [date, e.g., 27 March 2024]

<Signed>

[Full name, e.g., Kurnia Pujawati]
[StudentID, e.g., 5025231xxx]

6. **ZIP** the files of `01_sort_word[your_studentID].cpp`, `02_find_dup_[your_studentID].cpp`, `03_search_money_[your_studentID].cpp`, `04_exclamation_[your_studentID].cpp` and your **declaration** (e.g., `Declaration.PDF`) into 1 (one) only .ZIP file, namely **EF234201_DS_F_Q1_StudentID_Name.ZIP**. Send this .**ZIP** file to `yifana@gmail.com` and CC to the **TA's emails**.

7. Have a nice day, guys! Good luck! 😊