



ATILIM UNIVERSITY  
DEPARTMENT OF COMPUTER ENGINEERING

COMPE 226 – DATA STRUCTURES  
HOMEWORK II

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**Assistant:** Hazal Doğan

**Due Date:** April 24, 2022 (by midnight)

**RULES & REGULATIONS**

- You must **submit** your homework via **Moodle** before the due date/time.
- Homework submitted via email will be **ignored**!
- **Late submissions will NOT be graded.**
- **Before submission check that:**
  - You can use any IDE you want, but we prefer to you use **CodeBlocks** or **Embarcadero**
  - Set your language standard to **ISO C++11**
  - Name your homework file as in the format **lastname\_firstname\_hw2.cpp**.
  - **Do NOT use Turkish characters when you name C++ source file.**
  - **Do NOT upload .exe file. Otherwise you will get ZERO.**
- **Your codes** will be checked by special software (JPLAG & MOSS) for code similarity. If the **code similarity** between any two or more submissions is **higher than %80**, we will also examine and compare these codes by eye. If we are convinced that the similarity between two codes is not merely a coincidence, **all involved HWs will get 0 as the grade.**
- Expect grades **below 30 points** when the submitted program **cannot be compiled and tested.**
- **Therefore;**
  - **Group study is not allowed.** Everyone needs to do his/her homework as an individual.
  - **Be careful when you use Internet resources! Not use them directly!** If any other student uses the same source then your submissions will be found as similar!
  - **Do not share your solution/ideas with others.**
- Moreover, if we believe that the students cheat on these exams, we will initiate a **disciplinary act**!

**Question:** In this Homework, you are required to design a Spotify-like program using **queues utilizing linked list implementation**. All data should be stored in linked lists containing nodes where each node stores the name of a person and the queue of their playlist. Your program will work on the command line where the commands are given in one line as shown below:

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**C <Name>** : Creates a person with the name given in the line

eg: C Ahmet

Attention: Only one person with a given name can exist in storage (only one Ahmet can be added)

**S <Name> <Song>** : Sets the <Name> likes the <Song>

eg: S Ahmet Show must go on

Attention: Consider the case where <Name> has not been created before.

**E** <Name> <Song> : Erases the assignment (<Name> doesn't like the song anymore).

**L** <Name> : Lists the songs person <Name> likes.

Attention: Consider the case where no songs have been assigned to the person <Name>.

**N** : List the names of all of the registered people

**M** : List all the songs that are liked by anyone

Also, contemplate other cases that will cause the program to crash.

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### Presuppositions & Obligations

- All personal names consist of a single word, e.g. Albert, Berfu, or Cafer. Thus you can assume that, for commands such as S or E, the second word of the command is the first word of a song's name (If any, the following words are the continuation of the song name)
- Write comments in your program explaining all your functions and your class definitions.
- Use the Linked list header file and Queue (Linked list implementation) header file from Moodle.
- Feel free to ask further questions to the teaching assistant .