Csci 41: Introduction to Data Structures

Lab Exercise 2 Simplified Version

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January 29, 2019

Deadline: Please submit your work at the end of this lab.

(**Please continue to work on the lab exercise.**
Submit your final updated before next lab))

Objectives:

1. Debugger. Please learn how to use debugger (You will be asked to show how to use debugger in your 1st programming exam next week).
2. Object-Oriented Programming

Directions:

1. [up to 5 mins] Read the descriptions of lab exercise.
2. [up to 25 mins] Discuss algorithms and coding of the lab exercise may be with teammates
3. [up to 1 hr] Code your lab exercise individually. You may ask for help from teammates or TA. But try to limit it unless you really get stuck.
4. [up to 30 mins] Review source code your teammates. Try to identify defects of your teammates. Return back the source code to teammates. Fix the defects that pointed out by your teammates.
5. [up to 1 mins] **You must** upload a single zip file (e.g., YourLastName-Lab2.zip) to blackboard. The file should contain the following:
   a. All *.cpp and *h files, if any
   b. For each function or algorithm of your source code, you are requested to explain/comment the concepts/philosophy/theories of the function/algorithm. IF YOU DON'T HAVE DETAILED ENOUGH EXPLINATION FOR EACH FUNCTION/ALGORITHM YOU WILL GET 10 PTS OFF).
6. If you cannot finish this lab exercise, please continue to finish before next lab.

Please DO NOT submit the entire Visual Studio projects to me (**DO NOT SUBMIT EXE FILE TO ME. DO NOT SUBMIT PROJECT FILE TO ME**).

Exercise Summary:

Implement following classes and required member functions in C++ style.

1. A main function.
   a. Treat main function as yourself. Introduce Calendar object first. Then add several Event objects along with necessary data (Date, Time, Invitee) to the Calendar object. Please also try to delete a few events. Invoke searchEvent from Calendar.
2. Calendar class that has functions to add and drop events.
   a. Introduce void searchEvent(int month) will print out all events of a specific month.

3. Event class that has title, Date object, Time objects (start and end), a list of Invitee objects, duration in minutes (you are responsible to compute the ending time based on duration) and location. Setter and/or getter functions may be needed. A print function will print out all event information. *In simplified version, we assume no event has time conflict.*
4. Date class has month, day, and year data members. Setter and/or getter functions may be needed.
5. Time class has hour and minute data members. Setter and/or getter functions may be needed.
6. Invitee class has email data member. Please introduce a function that checks email format is correct (assume xxx@csufresno.edu where xxx SHOULD always start with character(s) and can have integers and/or characters thereafter. Minimum length of email ID is 3).

Then please make sure you invoke all functions in main function.

When the lab session is over, compress your **cpp** file(s) (and **header** file(s), if any) into **a single zip file** called Your**LastName**-Lab2.zip (e.g., Liu-Lab2.zip) and upload it to Blackboard. (**DO NOT** upload the entire project. **Do not send me exe file**.).

You are very welcome to discuss algorithms and code with TA or classmates during lab session. **However, please do not copy/paste code from peers since it won't help you improve your problem solving and coding skills at all.**