Programming Assignment #4 (due 23:59:59 12/18)

Order Management System

In this assignment, you need to write a C++ program to manage the orders in a company, including adding orders, deleting orders, and searching orders**.** Every order contains its **id** and the time information, **date,** within that the order can be finished. Build up a **Tree** according to its **date** in every order.

Provided Files

(1) main.cpp

Parse the given input file, execute your functions, and check your answers.

(2) OrderMGMT.h

I. A node structure which you **cannot** change with elements **unsigned id**, **unsigned date**, **unsigned leftSize**, **Node *left**, and **Node *right**.

II. An OrderMGMT class including private and public members and functions that you **can** change.

(3) OrderMGMT.cpp

Include 4 functions you should program.

`void OrderMGMT::addOrder(unsigned date, unsigned id)`

Add one order to your order management system according to its **date**.

Constrains: If the **date** of the new order is the same as the **date** of the order already in your system, you **cannot** take the order.

`void OrderMGMT::deleteOrders(unsigned start, unsigned end)`

Delete orders whose time information is within a given time interval.

Constrains: The time interval is a closed interval.

`list<unsigned> OrderMGMT::searchByDate(unsigned start, unsigned end)`

Search your tree and find the orders whose **date** within a given time interval.

Store their **id** in a list.

Constrains: The time interval is a closed interval.

The **id** should be stored in the ordering of their **date**.

`list<unsigned> OrderMGMT::searchByDateOrdering(unsigned start, unsigned end)`

Search your tree to find the ordering from the start to the end.

Store their **id** in a list.

Constrains: The interval is a closed interval.

The ordering starts from 1.

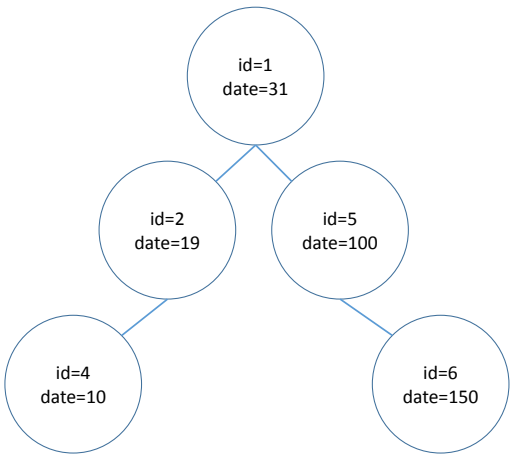
If the **end** is larger than the maximum number of your nodes, output the nodes ordering from **start** to the **maximum number of your node**.

(4) TestCases

Example

Input

addOrder (31, 1);
addOrder (19, 2);
addOrder (31, 3);
addOrder (10, 4);
addOrder (100, 5);
addOrder (150, 6);
deleteOrders (10, 20);
searchByDate (10, 40);
searchByDateOrdering (2, 5);



Output

1
5 6

Language

C or C++

Platform

You may develop your software on UNIX/Linux.
Compile: $ g++ main.cpp -o hw4
Execution: $ ./hw4 <input file>

Submission

Please upload the following files to E3 website by the deadline.
(1) OrderMGMT.h
(2) OrderMGMT.cpp