CMPT 225 D2
Fall 2020
T.Shermer

Assignment 4
Skip List

Due December 6 at 23:59

You are provided with driving code (Main.cpp) and a partially implemented skip list (SkipList.cpp, SkipList.h). You are to implement

> void insert(Key k, Value v);

> void remove(Key k);

> Entry* ceilingEntry(Key k);

> Entry* floorEntry(Key k);

> Entry* greaterEntry(Key k);

> Entry* lesserEntry(Key k);

and any private methods that you need. You may not add public methods to SkipList, SkipList::Entry, or SkipList::Quad.

For use in testing, we've provided a print() member function on SkipList.   Note also the provided method findWithTrail, which does a find while returning a vector of the last element visited on each level.   This will be helpful in the functions you have to write.

The provided Main.cpp exercises insert() and remove() but not the other functions you must write.   We will use a different, more detailed Main.cpp for testing your code.

In SkipList.cpp, use "std::rand() % 2" to get a random 0/1 value.

Be sure you **delete** any objects that will no longer be used (vectors, Quads, and Entries, for example).

ceilingEntry, floorEntry, greaterEntry, and lesserEntry should work as described in the Skip List lecture.