Searching Multimaps Solutions

Lower and Upper Bound

- Describe the lower_bound() and upper_bound() member functions of std::multimap and std::multiset
  - lower_bound returns an iterator to the first element which is greater than or equal than its argument
  - upper_bound returns an iterator to the first element which is greater than its argument
- What are the results of calling upper_bound() and lower_bound() with a key that is not in the container?
  - lower_bound and upper_bound will both return an iterator to the first element that is greater than its argument
- Write a simple program to demonstrate the use of lower_bound() and upper_bound()

Lower and Upper Bound Example

- Write a program which
  - Calls lower_bound() and upper_bound()
  - Uses a loop to find an element which has a given key and value
  - Displays the element's key and value

equal_range()

- Describe the equal_range() member function
  - equal_range returns a pair of iterators
  - The first iterator in the pair is the result of calling lower_bound() and the second iterator is the result of calling upper_bound()
- Write a program which
  - Uses equal_range() to find all the elements which have a given key and value
  - Calls an algorithm function to store these elements in a vector
  - Displays the contents of the vector