

Week 9 - Assignment (3 marks)

Note: Try to make the best use of appropriate C++ features.

You are provided with a working implementation of a template-based SkipList<Key, Value> class. This data structure supports fast search, insertion, and deletion by maintaining multiple forward pointers at different levels for each node.

Tasks:

Your task is to extend the SkipList class by implementing a **range query** operation. Ensure your range query method performs efficiently by leveraging the skip list structure. This operation should:

- Retrieve all key-value pairs where the key falls within a specified range low, high (inclusive).
- Collect the results into a `std::vector<std::pair<K, V>>`.
- Return the vector to the caller.

Input:

Please use ***the provided run_wa9.cpp*** to test your implementation.
Don't modify the provided code!

Submit:

- 1, **all C++ source code**
- 2, **wa9.txt**: a txt file contains all the source code for *plagiarism review*.
- 3, **output.jpg** (or png, bmp): a screenshot of the output by your program.

Please refer to the submission page for the Marking Rubric.