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Project 2

Testing Strategy

I wrote three separate files for three different probing methods, and the tests of these three are same. The only difference between them were just the probing function.

1. When the hash map is empty, test remove(), search(), is_empty(), size(), print() fuctions. Remove(), search() and print() will throw exceptions. The print() function will be used for other tests, so I have to make sure it is correct.

2. Test insert() fuction. I set my map size to 10 and insert a total of 5 items into the map first which has two clusters. After each insertion, I put a print() function so that I can visually see how the items were added into the map. I use this map to check the cluster_distribution() function. I also inserted items with same keys to check if the new one will replace the old one after that.

3. Now the list is not empty, test the is_empty(), size() again, and test capacity(), load().

4. Test remove() and search() function. Test search() with one in the map, and the other not in the map.

5. Test insert() again. This time, I inserted more items to make the map full. After that, if insert, it will throw an exception.

6. Test remove_random() function.

7. Test the clear() function, and use size() function to check.

However, during the test, the quadratic and rehashing has some bugs and crashed the program.