**GIT Department of Computer Engineering**

**CSE 222/505 - Spring 2020**

**Homework # Report**

# Student Name Student Number

## 1. CLASS DIAGRAMS

## 2. PROBLEM SOLUTION APPROACH

For second problem of our question, we asked to modify the skip list implementation in the book so that each node in the lowest-level list keeps several elements instead of just one element as in a B-tree node. I encounter 2 problems when implementing this problem. First problem that I encountered is that before implementation by java, I tried to design my Skip List by drawing representation and see how can I implement this data structure. I could use two type of implementation. One of them is node and List that linked to that node, second one is that List that included first node. I choose second one because everytime I try to access first node, I had to use more than one method at the first implementation and I had to use more than one abstract data type which is LinkedList and I didn’t want it so I used second implementation that I mentioned before. After that decision, I see second problem when I’m doing implementation. At Skiplist, there is a Express Line that keeps some E types and we can look them when finding E type Object. Implementation at the book, express line was being created as random height that is limited to a variable. In my implementation, express lines are last element of arrays.If element that I am looking for is less than next node that I’m looking for, decrease array index, if element that I’m looking for is greater than next node that I’m looking for, then I assign that node as current node and keep doing same procedure until I find place that I’m looking for.

## 3. TEST CASES

Write test cases to check whether your system works properly. A test case is a set of conditions or variables under which a tester determines whether the software satisfies **requirements** and **functions** properly.

Here are good definitions and examples to create test cases:

<https://www.guru99.com/test-case.html>

## 4. RUNNING AND RESULTS

Run your system, check your test cases, add your results as screenshots and tables.