P1 Part 1

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1 How to Invoke Program

Compile Command: javac P1.java
Execute Command: java P1

2 Assumptions

It is assumed that .class files implementing a SymTable are present in the same directory as the testing program P1.java. These .class files include Sym.class, SymTable.class, EmptySymTableException.class, and DubplicateSymException.class.

3 Purpose of Tests

The tests in P1.java only print to the console if an error occurs. The only exception to this is when the print function is tested.

3.1 Testing addDecl function

- EmptySymTableException is thrown when addDecl is called on empty SymTable

- IllegalArgumentException is thrown when either parameter (name or sym) is null

- DuplicateSymException is thrown when name already exists as a key in current scope

- make sure key - value is successfully added to current scope

3.2 Testing addScope function

- make sure a new scope is added to the head of the SymTable's linked list

3.3 Testing lookupLocal function

- EmptySymTableException is thrown when lookupLocal is called on empty SymTable

- make sure correct value is returned when lookupLocal is called with a known stored name

3.4 Testing lookupGlobal function

- EmptySymTableException is thrown when lookupGlobal is called on empty SymTable

- make sure lookupGlobal is able to find a key-value match stored in a non-head scope

- make sure lookupGlobal returns a key-value pair found in the first scope explored (prioritizes current scope vs later scopes)

3.5   Testing removeScope function

- EmptySymTableException is thrown when removeScope is called on empty SymTable

- make sure the first (head) scope is removed after calling removeScope

3.6   Testing print function

- make sure correct representation of a SymTable is printed for a multi-node, multi-decl Symtable