

```

1  /**
2  * Refactors the given {@code Statement} by renaming every occurrence of
3  * instruction {@code oldName} to {@code newName}. Every other statement is
4  * left unmodified.
5  *
6  * @param s
7  *       the {@code Statement}
8  * @param oldName
9  *       the name of the instruction to be renamed
10 * @param newName
11 *       the new name of the renamed instruction
12 * @updates s
13 * @requires [newName is a valid IDENTIFIER]
14 * @ensures <pre>
15 * s = [#s refactored so that every occurrence of instruction oldName
16 *      is replaced by newName]
17 * </pre>
18 */
19 public static void renameInstruction(Statement s, String oldName,
20                                     String newName) {
21     // Will ask about this in office hours
22 }
23 /**
24 * Refactors the given {@code Program} by renaming instruction
25 * {@code oldName}, and every call to it, to {@code newName}. Everything
26 * else is left unmodified.
27 *
28 * @param p
29 *       the {@code Program}
30 * @param oldName
31 *       the name of the instruction to be renamed
32 * @param newName
33 *       the new name of the renamed instruction
34 * @updates p
35 * @requires <pre>
36 * oldName is in DOMAIN(p.context) and
37 * [newName is a valid IDENTIFIER] and
38 * newName is not in DOMAIN(p.context)
39 * </pre>
40 * @ensures <pre>
41 * p = [#p refactored so that instruction oldName and every call
42 *      to it are replaced by newName]
43 * </pre>
44 */
45 public static void renameInstruction(Program p, String oldName,
46                                     String newName) {
47     // TODO - fill in body
48     Map<String, Statement> contex = p.newContext();
49     p.swapContext(contex);
50     while ( < contex.size()) {
51         Map.Pair<String, Statement> temp = contex.removeAny();
52         if(temp.key().equals(oldName)){
53             p.add(newName, temp.value());
54         }else{
55             p.add(temp.key(), temp.value());
56         }
57     }
58 }
59
60
61 Program p = new Program1();
62 Map<String, Statement> context = p.newContext();
63 Statement block = p.newBody();
64 Statement s = block.newInstance();
65 p.setName("Get-to-Edge-and-Wait-for-Infection");
66 s.assembleCall("walk");
67 block.addToBlock( , s);
68 s.assembleCall("run");
69 block.addToBlock(block.lengthOfBlock(), s);

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70 s.assembleWhile(Condition.NEXT_IS_NOT_WALL, block);
71 block.addToBlock( , s);
72 p.swapBody(block);
73 s.assembleCall("move");
74 block.addToBlock( , s);
75 s.assembleCall("move");
76 block.addToBlock(block.lengthOfBlock(), s);
77 context.add("run", block);
78 s.assembleCall("move");
79 block = block.newInstance();
80 block.addToBlock( , s);
81 context.add("walk", block);
82 p.swapContext(context);
83 // I did not know how to fully do this
```