**Software Testing Homework3: Test for Stutter**

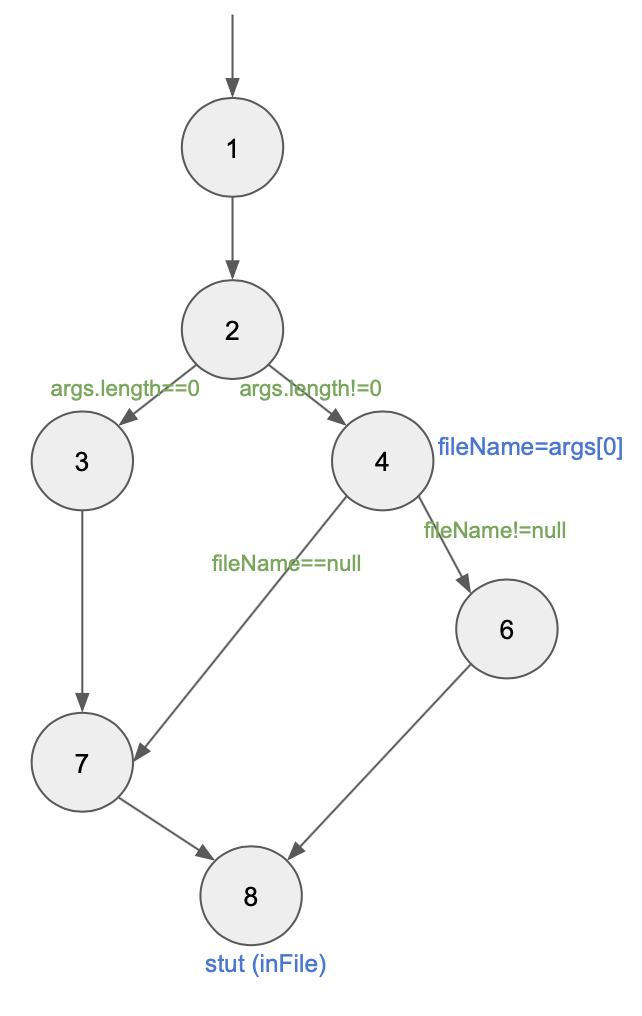
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Use the class Stutter for questions a-d. A compliable version is available in <https://cs.gmu.edu/~offutt/softwaretest/java/Stutter.java>. A line-numbered version is in <https://cs.gmu.edu/~offutt/softwaretest/java/Stutter.num>.

1. Draw control flow graphs for the methods in Stutter.

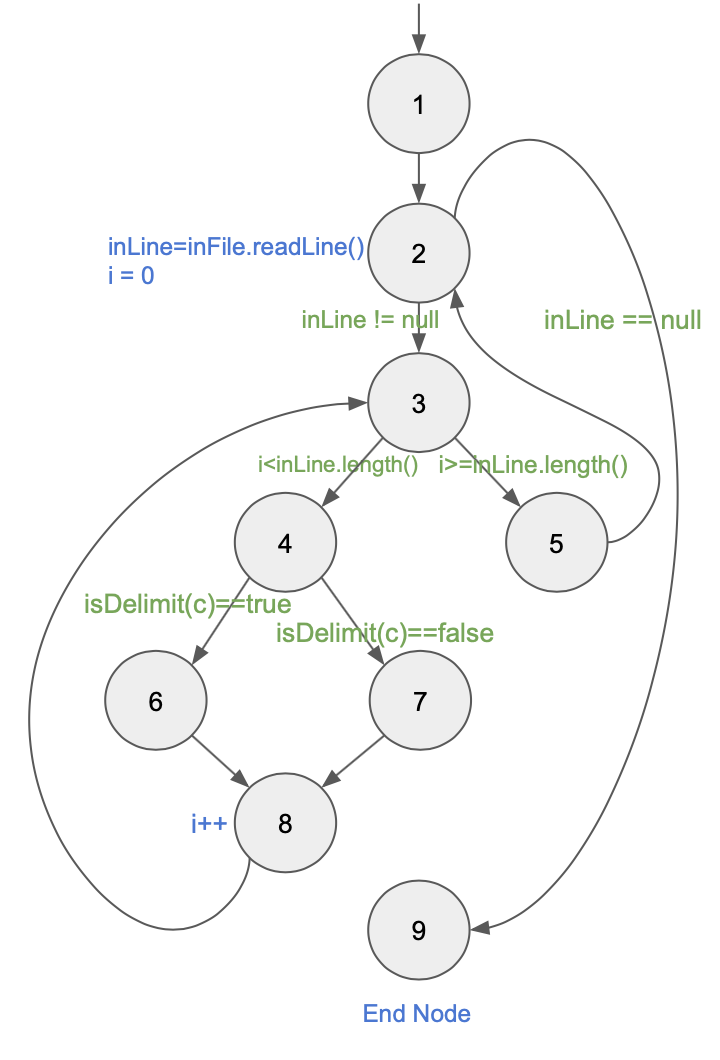
(Main)

一張含有 文字 的圖片

自動產生的描述 

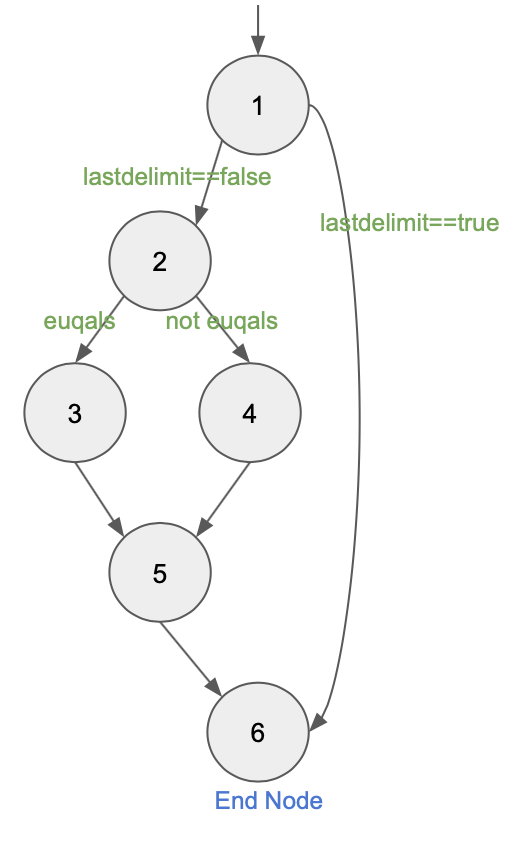
(Stut)

一張含有 文字 的圖片

自動產生的描述 

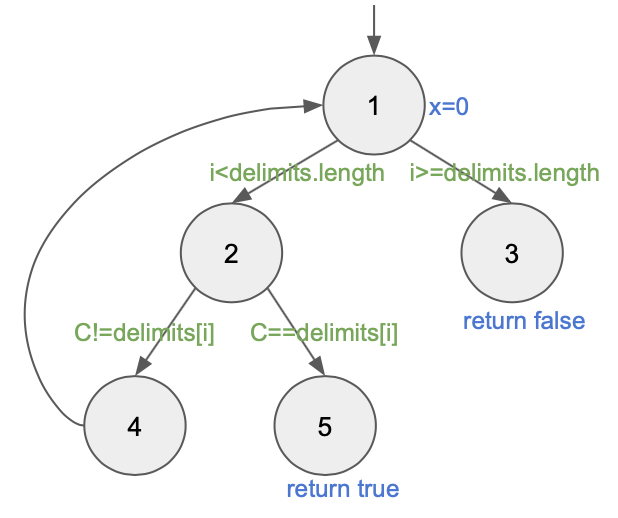
(checkDupes)

一張含有 文字 的圖片

自動產生的描述 

(isDelimit)

一張含有 文字 的圖片

自動產生的描述 

1. List all the call sites

（以<https://cs.gmu.edu/~offutt/softwaretest/java/Stutter.num>的行數說明）

|  |  |
| --- | --- |
| 行數 | Call name |
| 46 | stut(inFile) |
| 63 | isDelimit(c) |
| 65 | checkDupes(linecnt) |
| 73 | checkDupes(linecnt) |

1. List all coupling du-pairs for each call site.

|  |  |  |
| --- | --- | --- |
|  | Last-Def | First-Use |
| 1 | (main(), inFile, 30) | (stut(), inFile, 56) |
| 2 | (main(), inFile, 37) | (stut(), inFile, 56) |
| 3 | (main(), inFile, 42) | (stut(), inFile, 56) |
| 4 | (stut(), c, 61) | (isDelimit(), C, 102) |
| 5 | (stut(), linecnt, 55) | (checkDupes(), line, 88) |
| 6 | (stut(), linecnt, 74) | (checkDupes(), line, 88) |
| 7 | (isDelimit, 無變數名稱, 103) | (stut(), 無變數名稱, 63) |
| 8 | (isDelimit, 無變數名稱, 104) | (stut(), 無變數名稱, 63) |

1. Create test data to satisfy All-Coupling User Coverage for Stutter

|  |  |  |  |
| --- | --- | --- | --- |
|  | args.length | args[0] | inFile |
| 1 | 0 |  | “abc def” (System.in) |
| 2 | 1 | null | “abc def” (System.in) |
| 3 | 1 | “testFile” | “abc def” (From file) |
| 4 | 1 | “testFile” | “abc def” (From file) |
| 5 | 1 | “testFile” | “abc+def” (From file) |
| 6 | 1 | “testFile” | “abc \n def” (From file) |
| 7 | 1 | “testFile” | “abc+def” (From file) |
| 8 | 1 | “testFile” | “abcdef” (From file) |