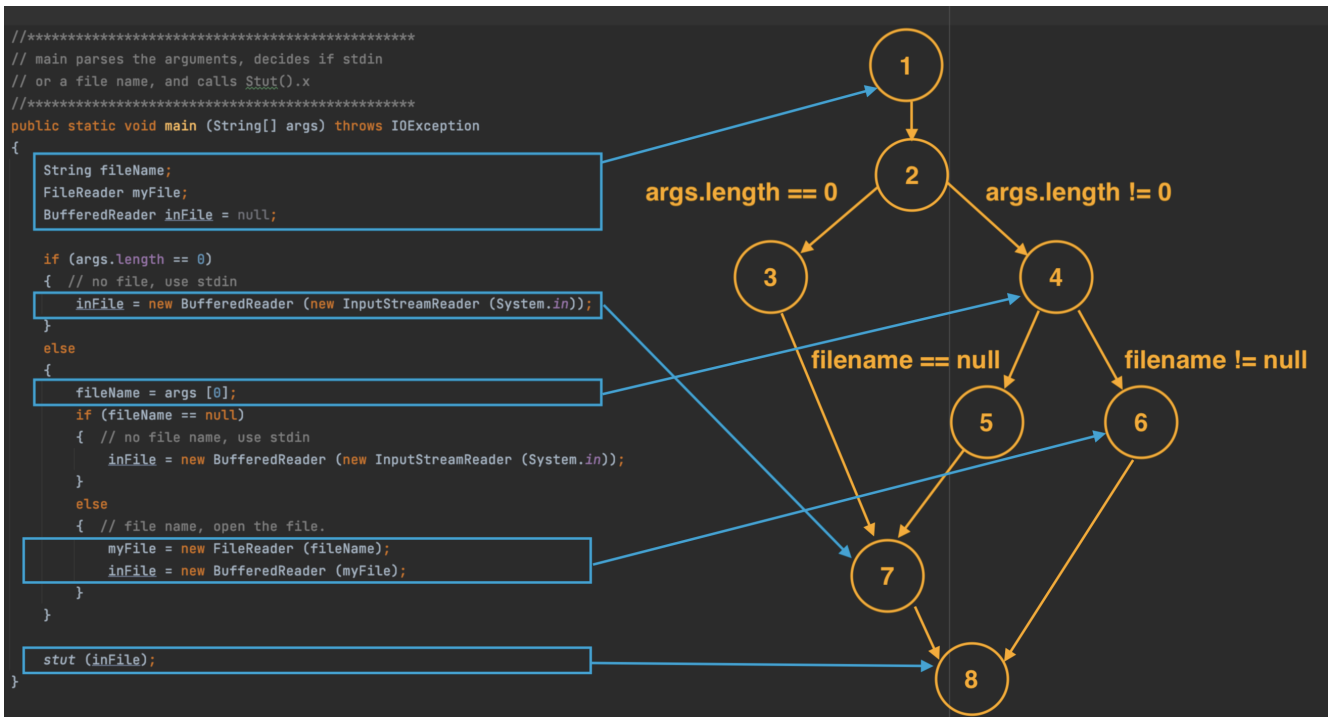


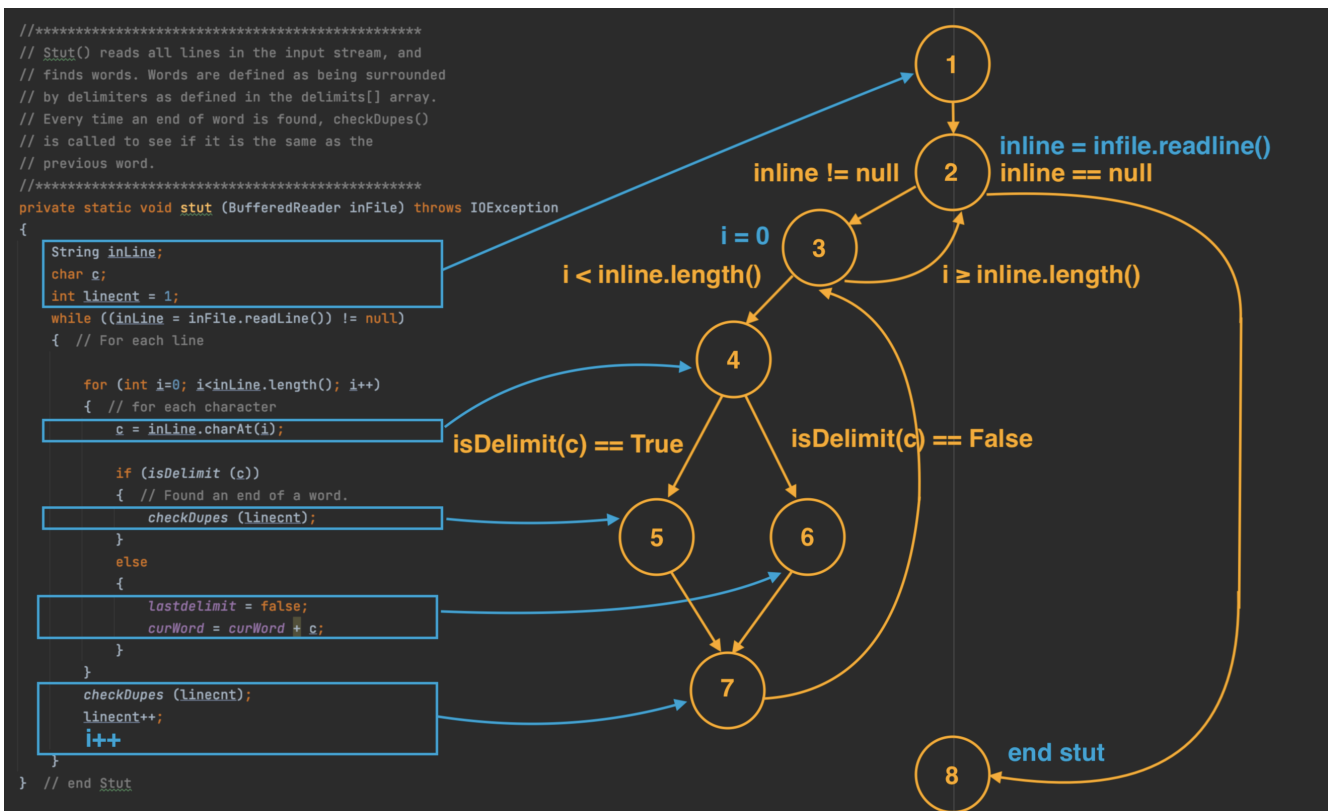
HW3

[a] Draw control flow graphs for the methods in Stutter.

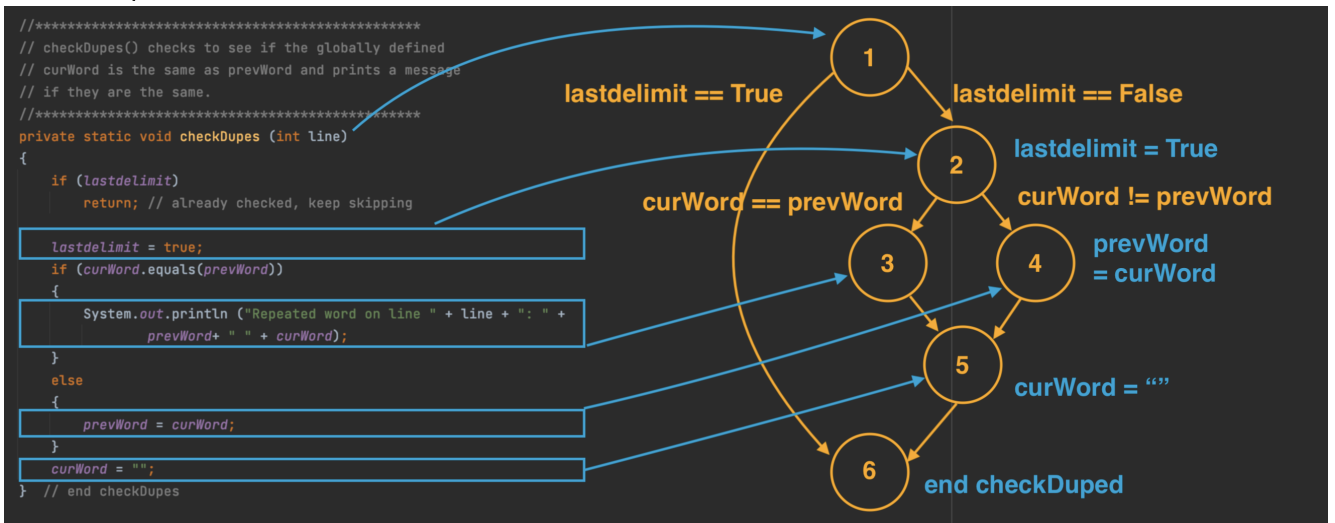
- main



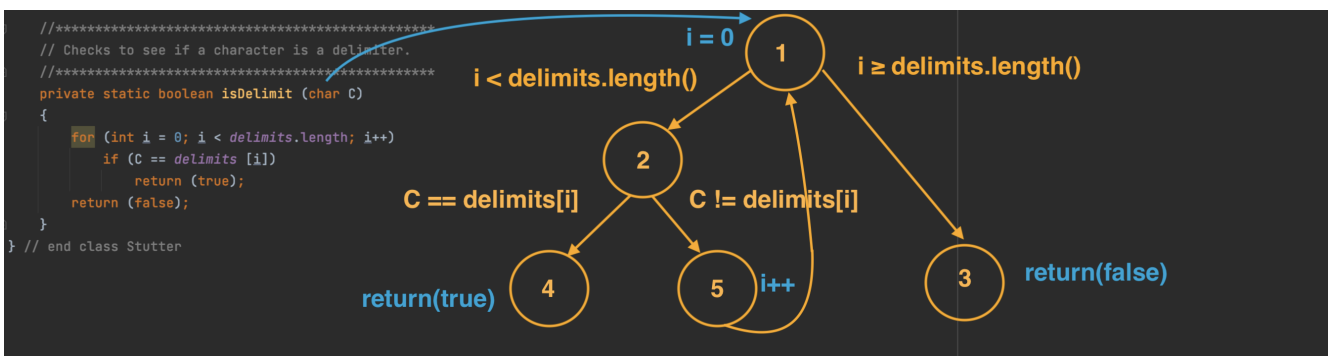
- stut



- checkDuped



- isDelimit



[b] List all the call sites.

- Line 46, `main()` --> `stut(inFile)`
- Line 63, `stut()` --> `isDelimit(c)`
- Line 65, `stut()` --> `checkDupes(linecnt)`
- Line 73, `stut()` --> `checkDupes(linecnt)`

[c] List all coupling du-pairs for each call site.

- Each entry contains (function, variable, line)

	call site	last-def	first-use
1	46	main(), curWord, 14	stut(), curWord, 70
2	46	main(), inFile, 30	stut(), inFile, 56
3	46	main(), inFile, 37	stut(), inFile, 56
4	46	main(), inFile, 42	stut(), inFile, 56
5	63	stut(), c, 61	isDelimit(), C, 102
6	65	stut(), linecnt, 55	checkDupes(), line, 88
7	65	stut(), linecnt, 74	checkDupes(), line, 88
8	65	stut(), curWord, 70	checkDupes(), curWord, 86
9	65	stut(), lastdelimit, 69	checkDupes(), lastdelimit, 83
10	65	checkDupes(), curWord, 94	stut(), curWord, 70
11	73	stut(), linecnt, 55	checkDupes(), line, 88
12	73	stut(), linecnt, 74	checkDupes(), line, 88
13	73	stut(), curWord, 70	checkDupes(), curWord, 86
14	73	stut(), lastdelimit, 69	checkDupes(), lastdelimit, 83
15	73	checkDupes(), curWord, 94	stut(), curWord, 70

(d) Create test data to satisfy All-Coupling Use Coverage for Stutter.

- Test Data
 - T1: test = "Ha" from arg[0]
 - T2: test = "Ha-Ha" from arg[0]
 - T3: test = "line1\nHa-Ha" from arg[0]
 - T4: test = "Ha" from System.in && arg.length == 0
 - T5: test = "Ha" from System.in && arg.length == 1

- corresponding test case

	call site	last-def	first-use	Test case	descript
1	46	global variable, curWord, 14	stut(), curWord, 70	T1	test should start with a non-delimiter.
2	46	main(), inFile, 30	stut(), inFile, 56	T4	test should come from System.in (http://System.in)
3	46	main(), inFile, 37	stut(), inFile, 56	T5	arg[0] is not null but test comes from fileName
4	46	main(), inFile, 42	stut(), inFile, 56	T1	test comes from fileName.
5	63	stut(), c, 61	isDelimit(), C, 102	T1	Any test which is not null
6	65	stut(), linecnt, 55	checkDupes(), line, 88	T2	Test stutters when linecnt = 1
7	65	stut(), linecnt, 74	checkDupes(), line, 88	T3	Test stutters on next or later lines
8	65	stut(), curWord, 70	checkDupes(), curWord, 86	T2	Test contains a delimiter after a non-delimiter
9	65	stut(), lastdelimit, 69	checkDupes(), lastdelimit, 83	T2	Test contains a delimiter after a non-delimiter
10	65	checkDupes(), curWord, 94	stut(), curWord, 70	T2	Test contains at least 2 words
11	73	stut(), linecnt, 55	checkDupes(), line, 88	T1	test contains only non-delimiters
12	73	stut(), linecnt, 74	checkDupes(), line, 88	T3	Test satisfies "curWord.equals(prevWord)" on the second or later line,
13	73	stut(), curWord, 70	checkDupes(), curWord, 86	T1	test ends with non-delimiter
14	73	stut(), lastdelimit, 69	checkDupes(), lastdelimit, 83	T1	test ends with non-delimiter
15	73	checkDupes(), curWord, 94	stut(), curWord, 70	T3	start with non-delimiter on the next line

- screenshot

```
(base) kyuuhi@qiuyancide-MBP ~/Desktop java Stutter Ha T1
(base) kyuuhi@qiuyancide-MBP ~/Desktop java Stutter Ha-Ha T2
Repeated word on line 1: Ha Ha
(base) kyuuhi@qiuyancide-MBP ~/Desktop java Stutter line1_Ha-Ha T3
Repeated word on line 2: Ha Ha
(base) kyuuhi@qiuyancide-MBP ~/Desktop java Stutter T4
Ha
Ha-Ha
Repeated word on line 2: Ha Ha
Repeated word on line 2: Ha Ha

(base) kyuuhi@qiuyancide-MBP ~/Desktop cat Ha.txt
Ha%
(base) kyuuhi@qiuyancide-MBP ~/Desktop cat Ha-Ha.txt
Ha-Ha%
(base) kyuuhi@qiuyancide-MBP ~/Desktop cat line1_Ha-Ha.txt
line1
Ha-Ha%
```

- T5 is infeasible since argv[0] and fileName can't be null at the same time.