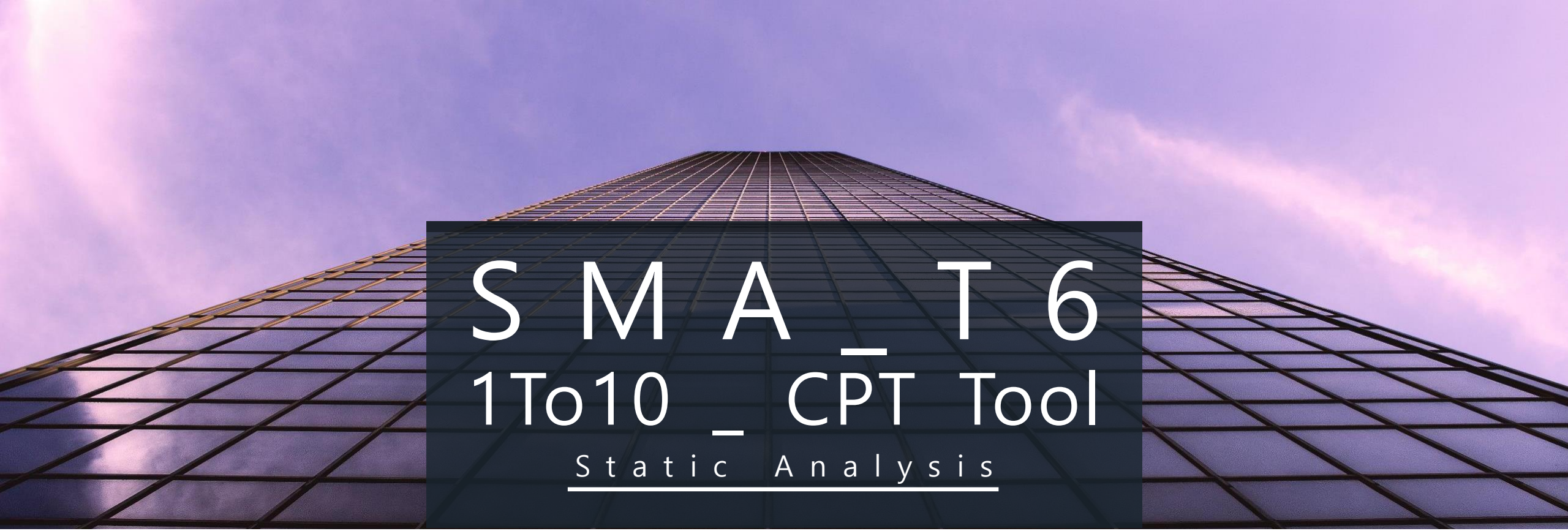

S M A _ T 6

1To10 _ CPT Tool

Static Analysis

One to Ten

CPT 한번에 끝내기

didix@naver.com 010-9633-5320 trello.com//software-modelling

손성호 이광제 이용주 황준익

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Level 3 : Find bugs

Static Analysis

Lv.1_IntelliJ

Static Analysis Lv1_IntelliJ

T5. SSS CPT

149개
검출

T8. Feesual CPT

20개
검출

Team 5

SSS CPT

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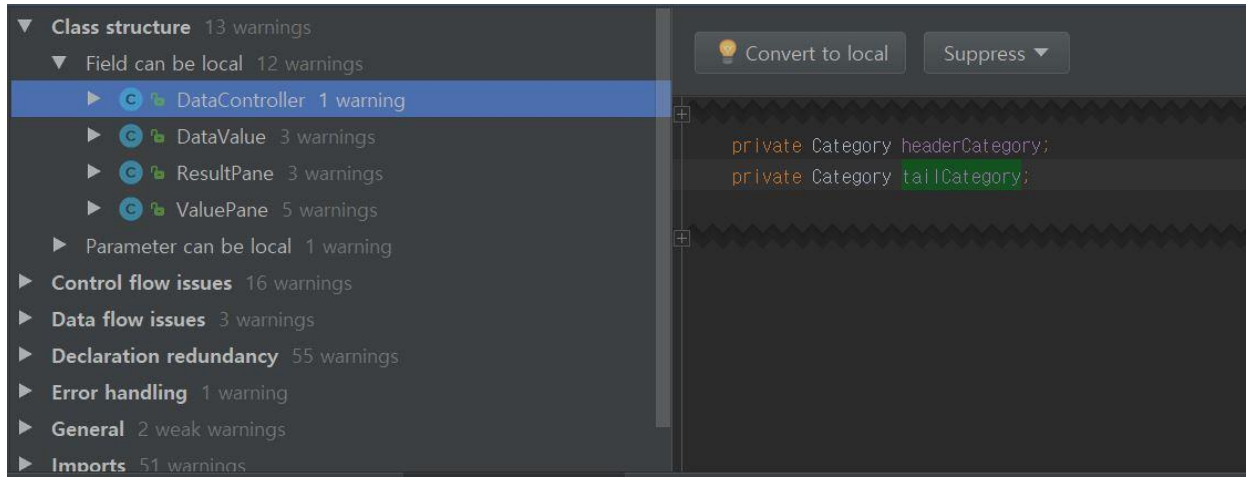
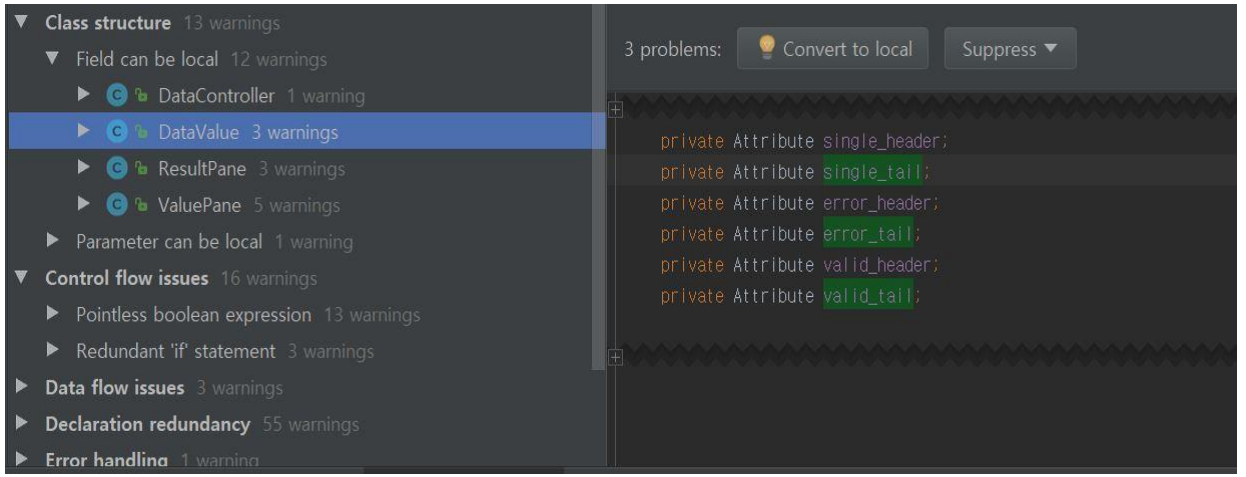
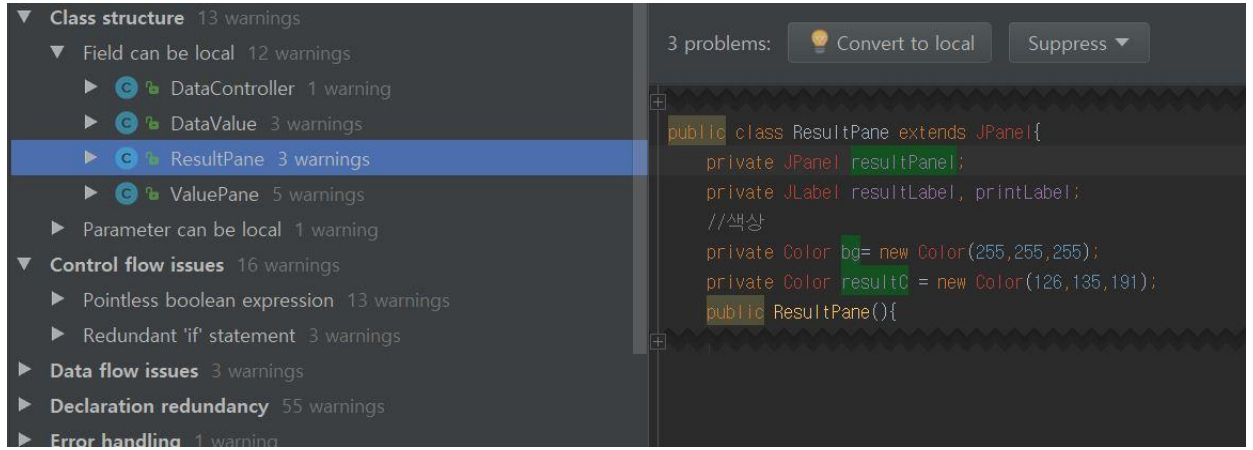
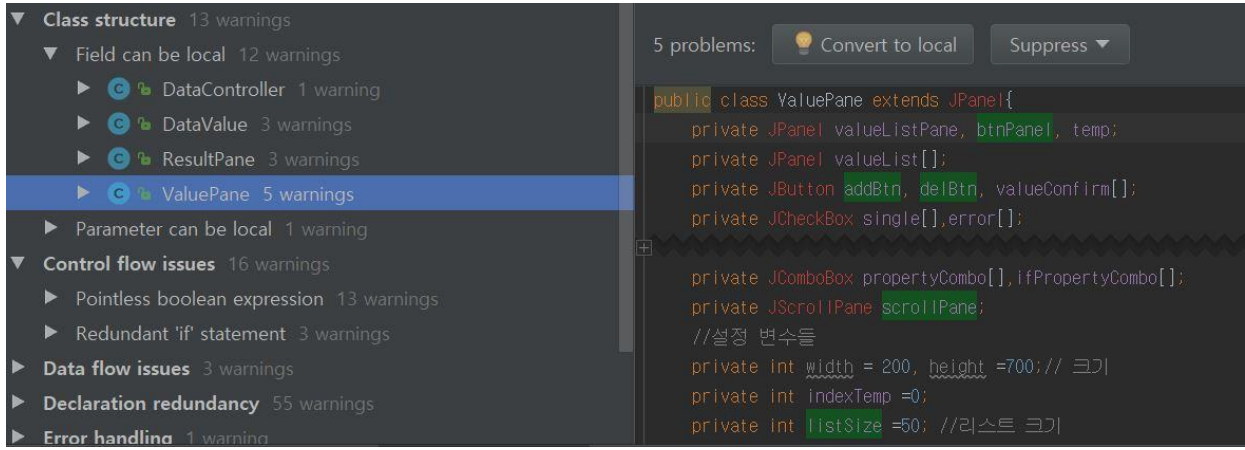
T5. SSS CPT Tool





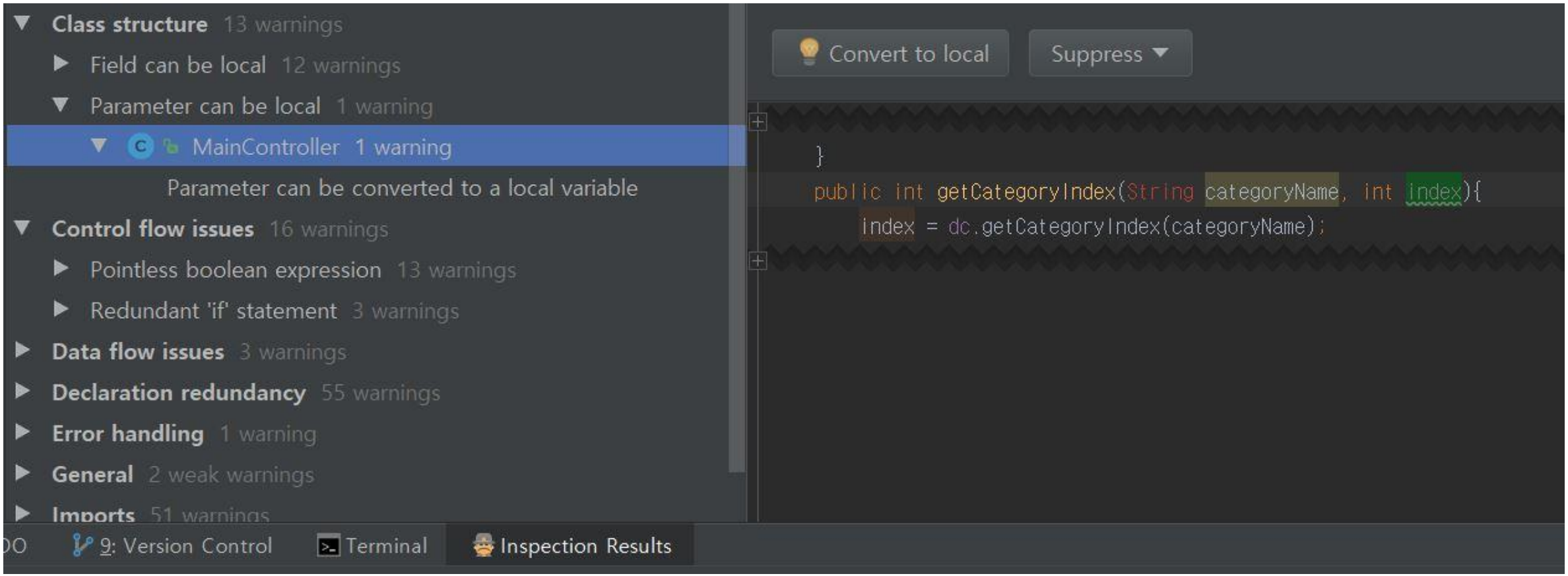




변수가 하나의 메소드 에서만 사용됨 (지역변수 추천)

Static Analysis Lv1. IntelliJ

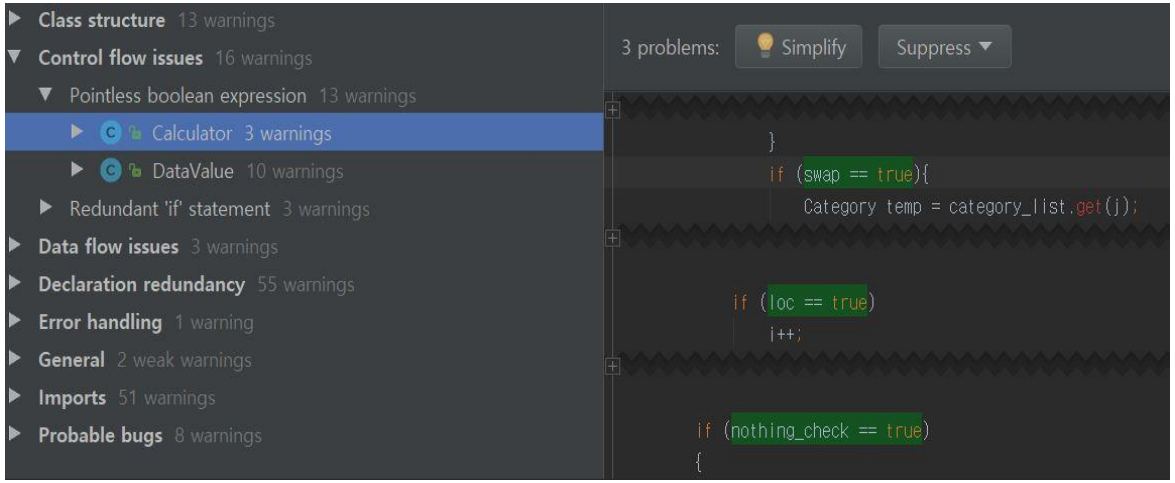
T5. SSS CPT Tool

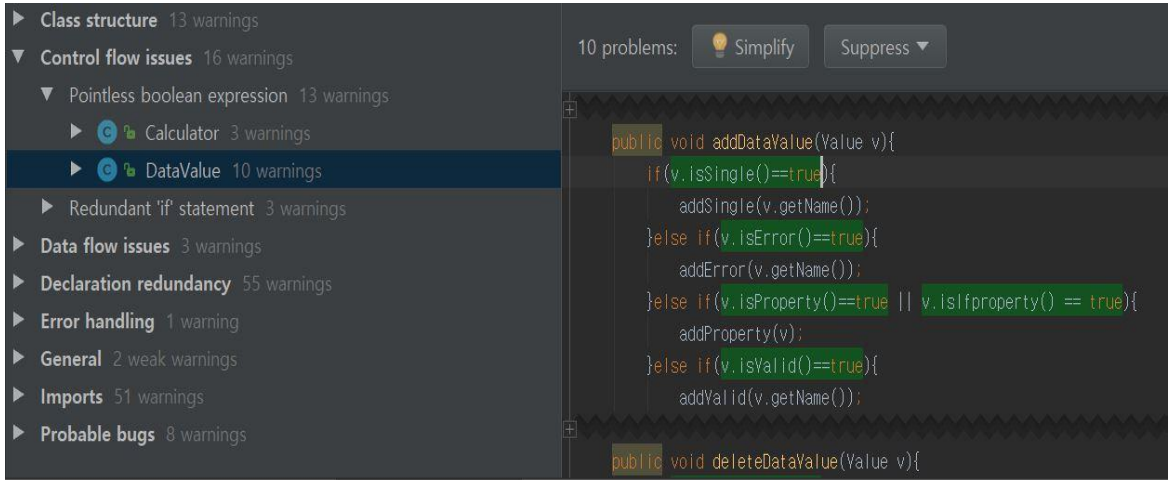


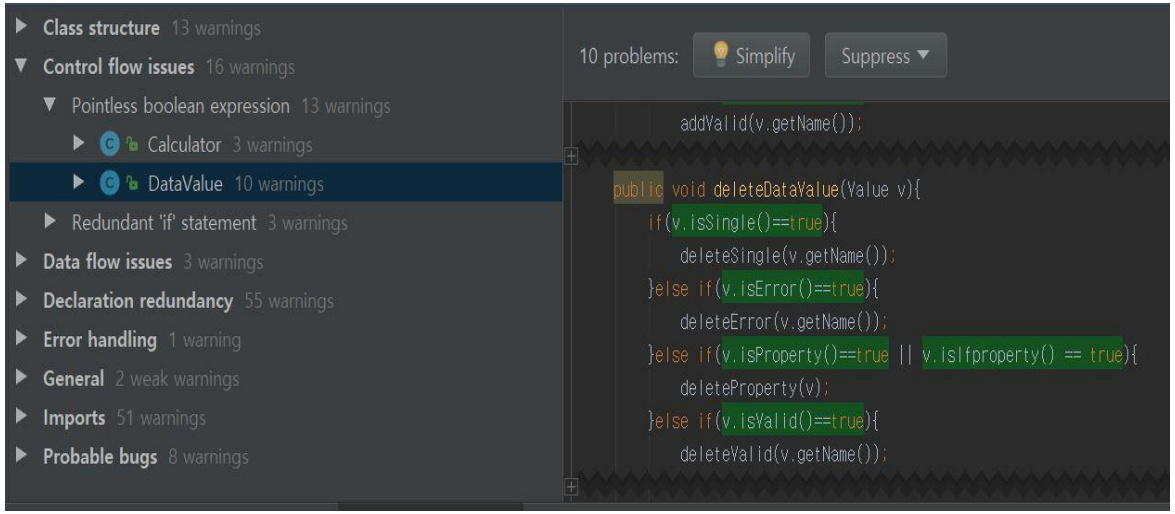
인자로 받은 Index값 사용 x

Static Analysis Lv1. IntelliJ

T5. SSS CPT Tool



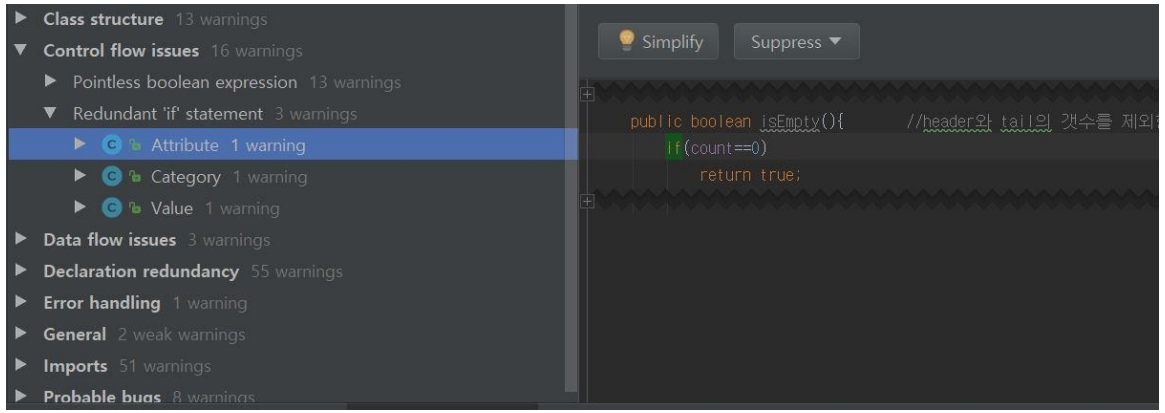


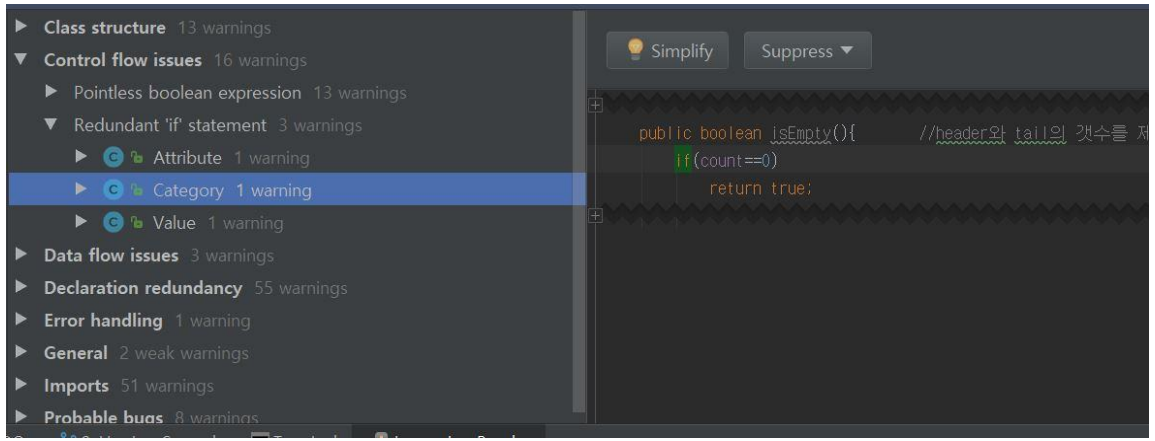


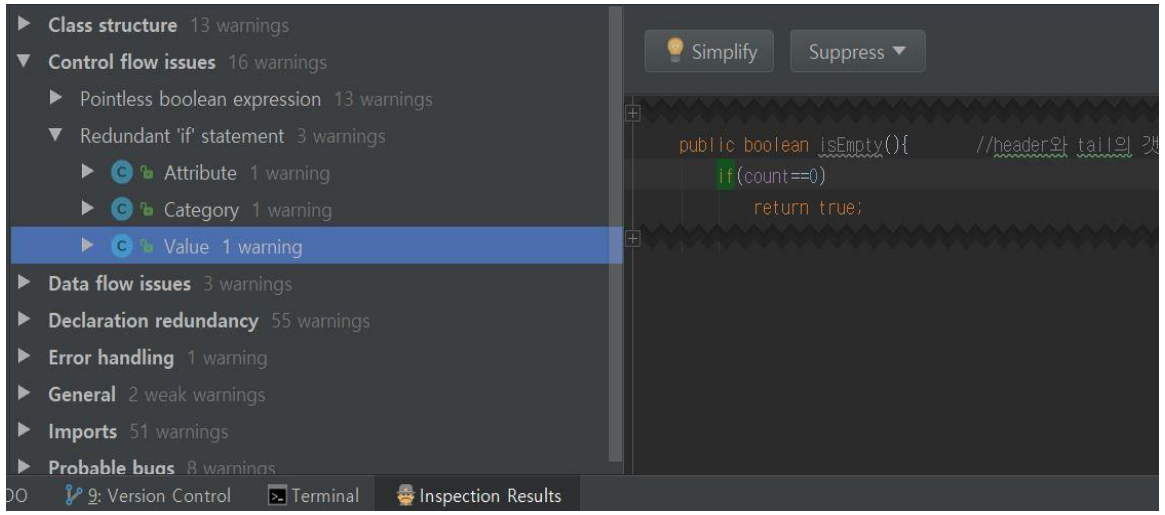
If 문의 조건으로 '변수 == true' 라고 표현

Static Analysis Lv1. IntelliJ

T5. SSS CPT Tool



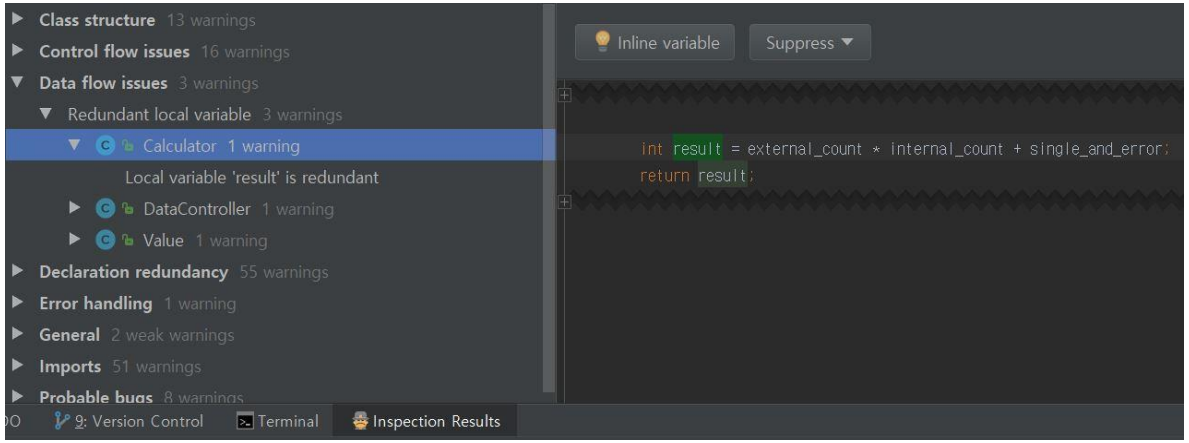


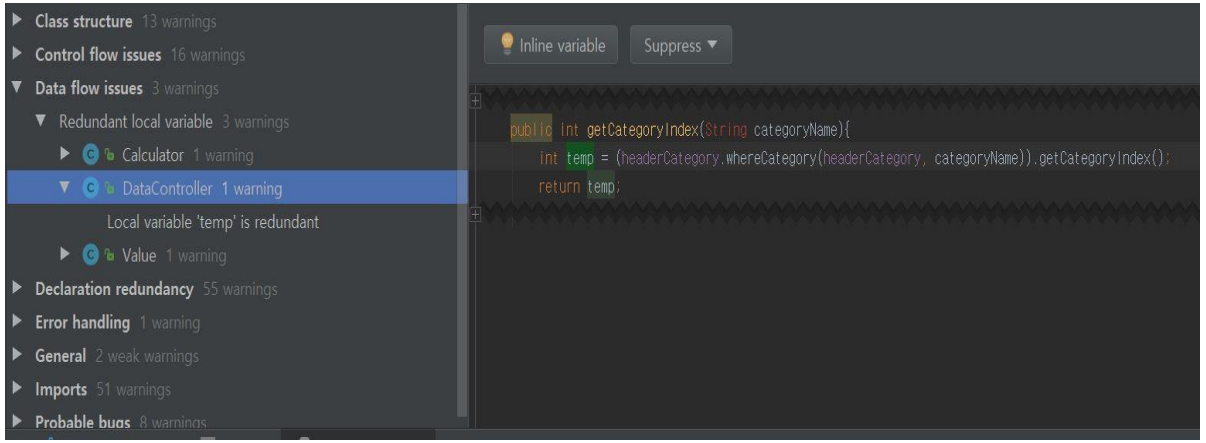


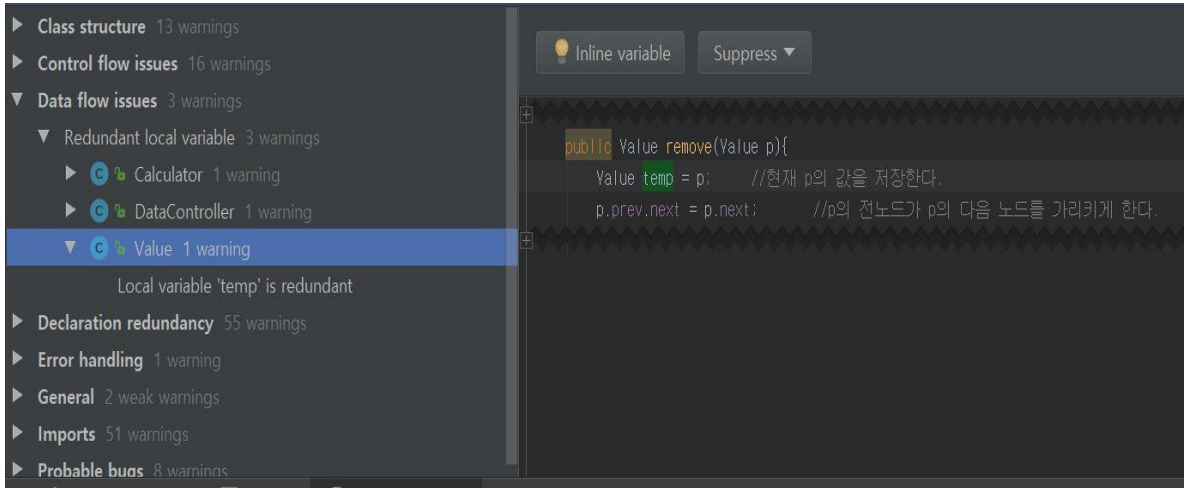
If문 필요 x

Static Analysis Lv1. IntelliJ

T5. SSS CPT Tool



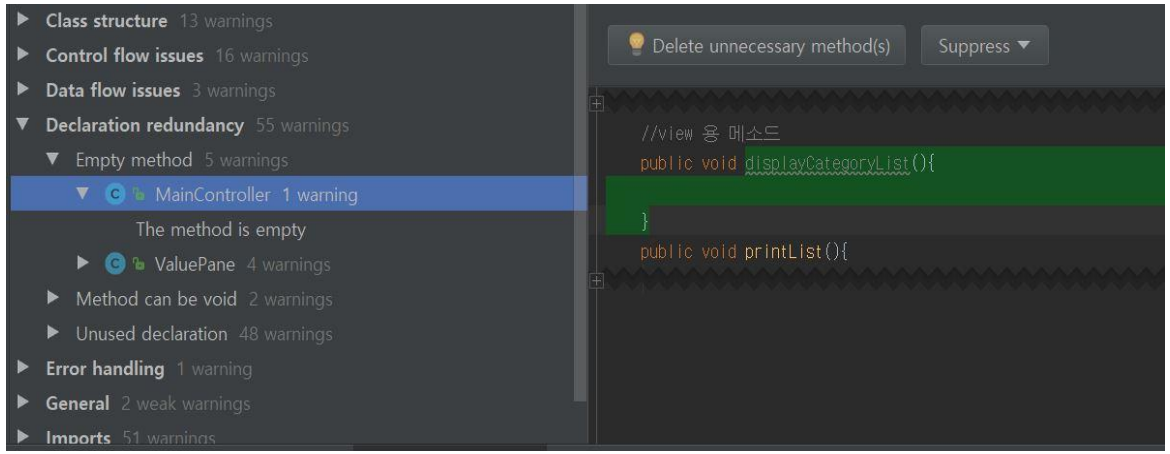


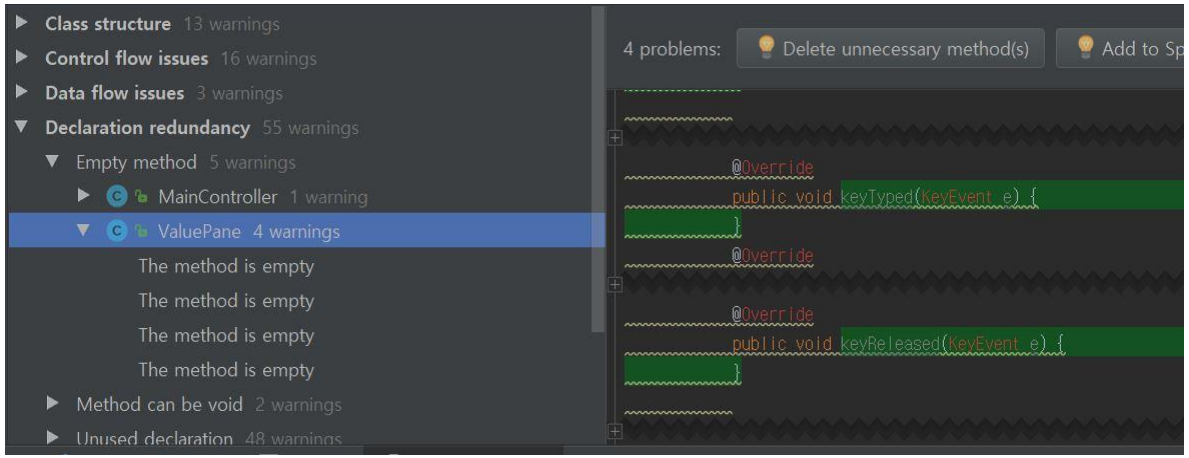


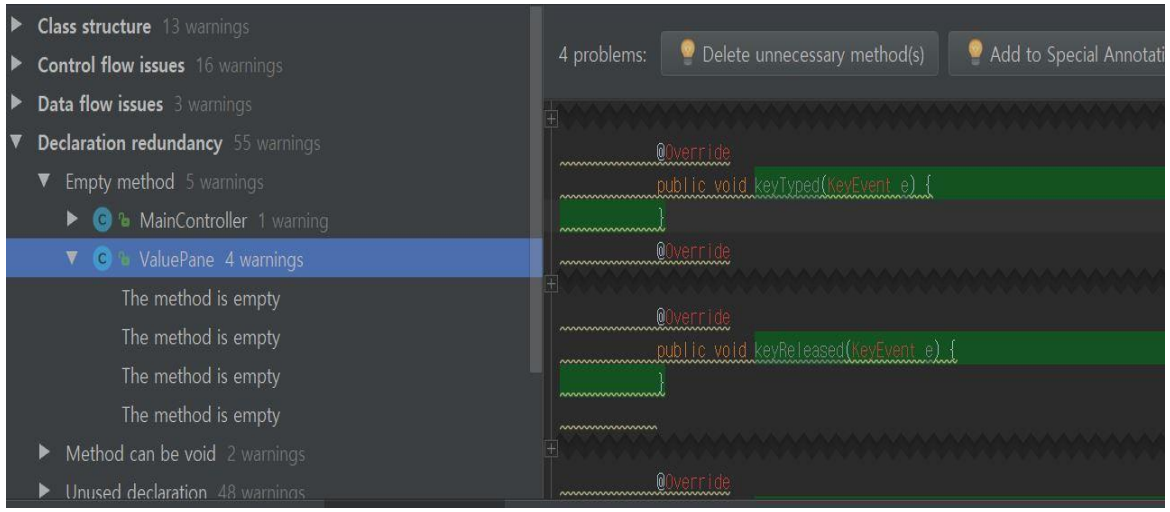
Local 변수 선언 필요 x

Static Analysis Lv1. IntelliJ

T5. SSS CPT Tool



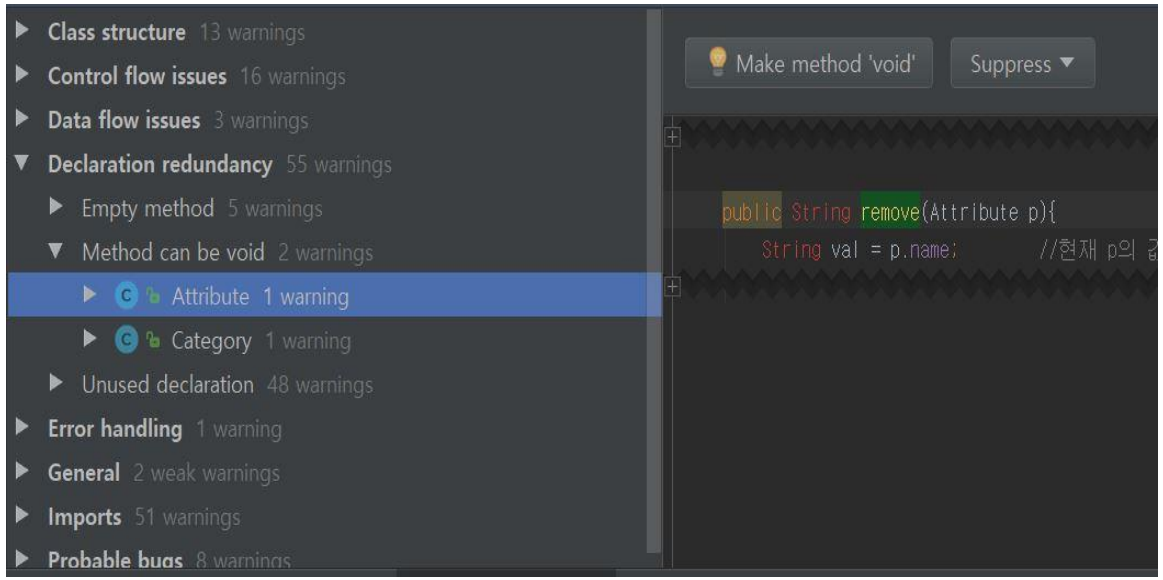


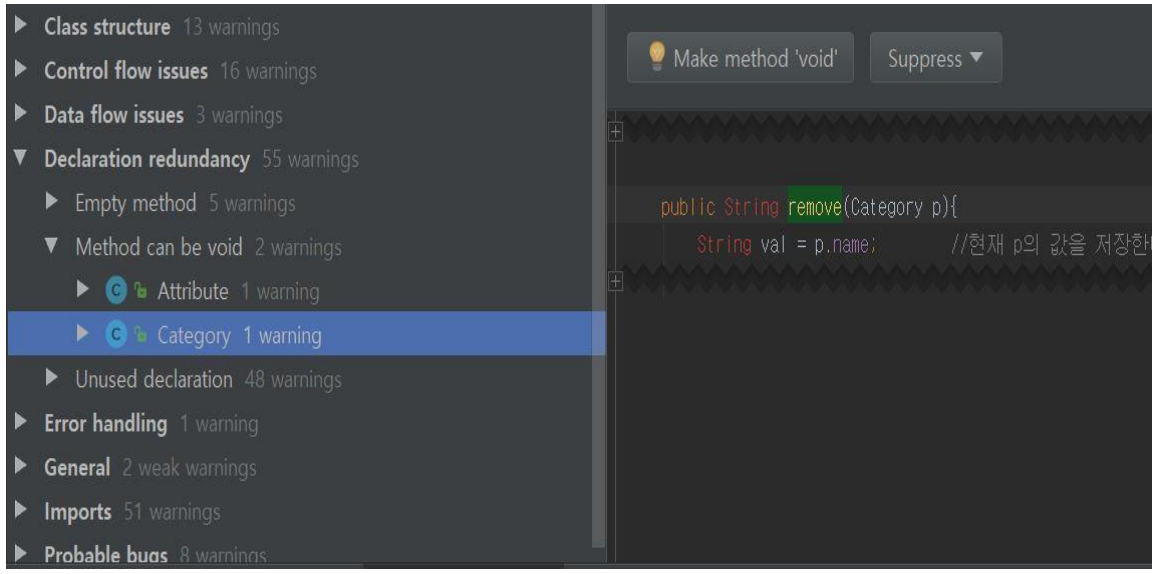


메소드가 비어있음

Static Analysis Lv1. IntelliJ

T5. SSS CPT Tool

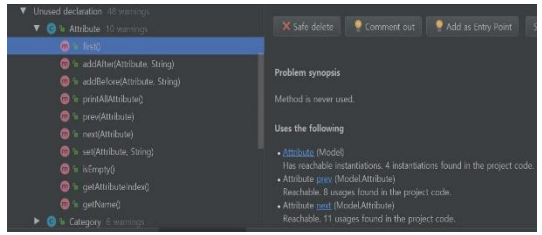


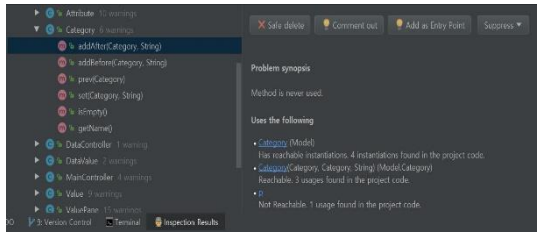


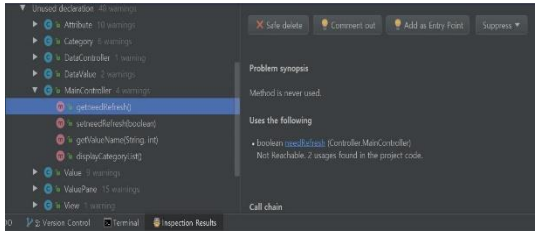
메소드 Return형 적을 필요 x

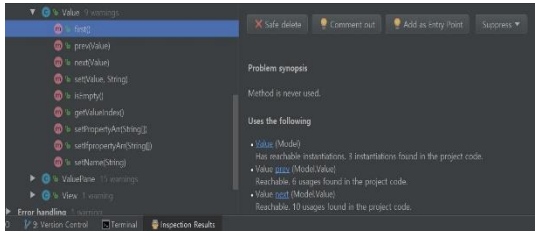
Static Analysis Lv1. IntelliJ

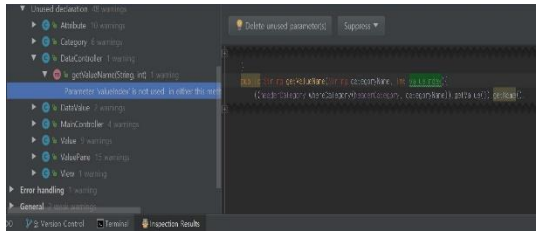
T5. SSS CPT Tool

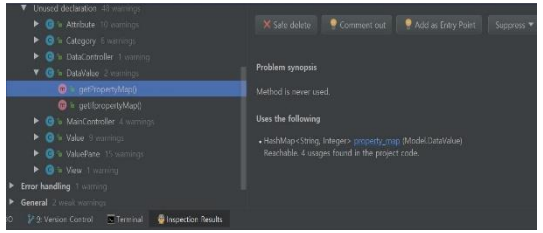


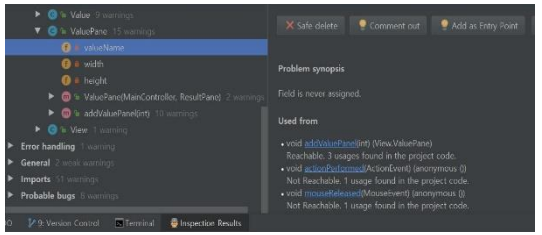


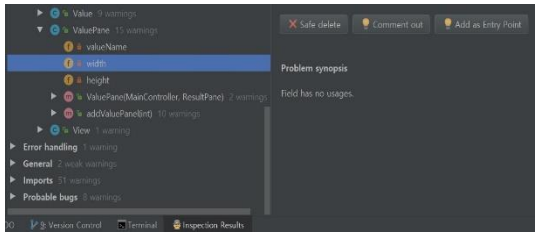


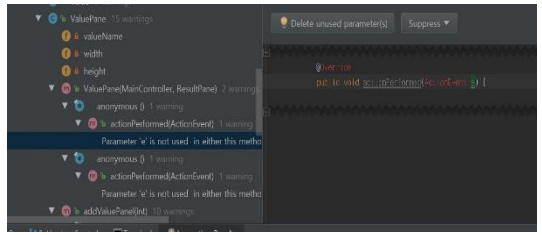


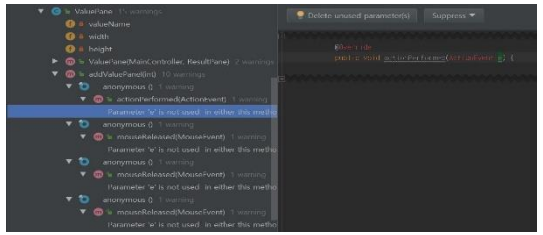












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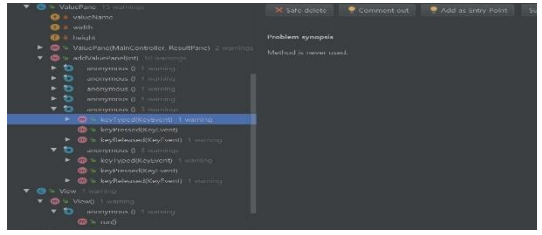
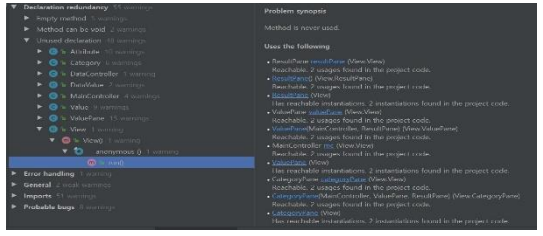
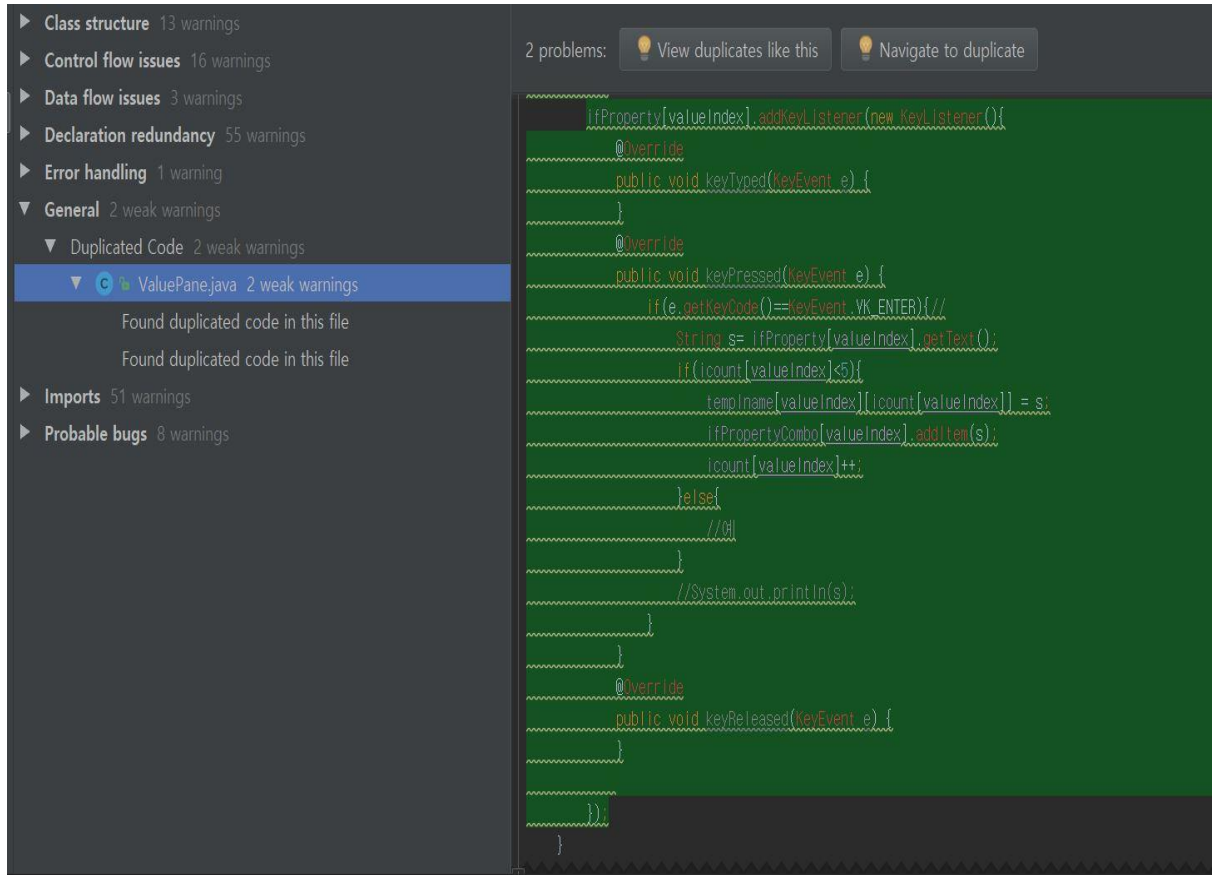
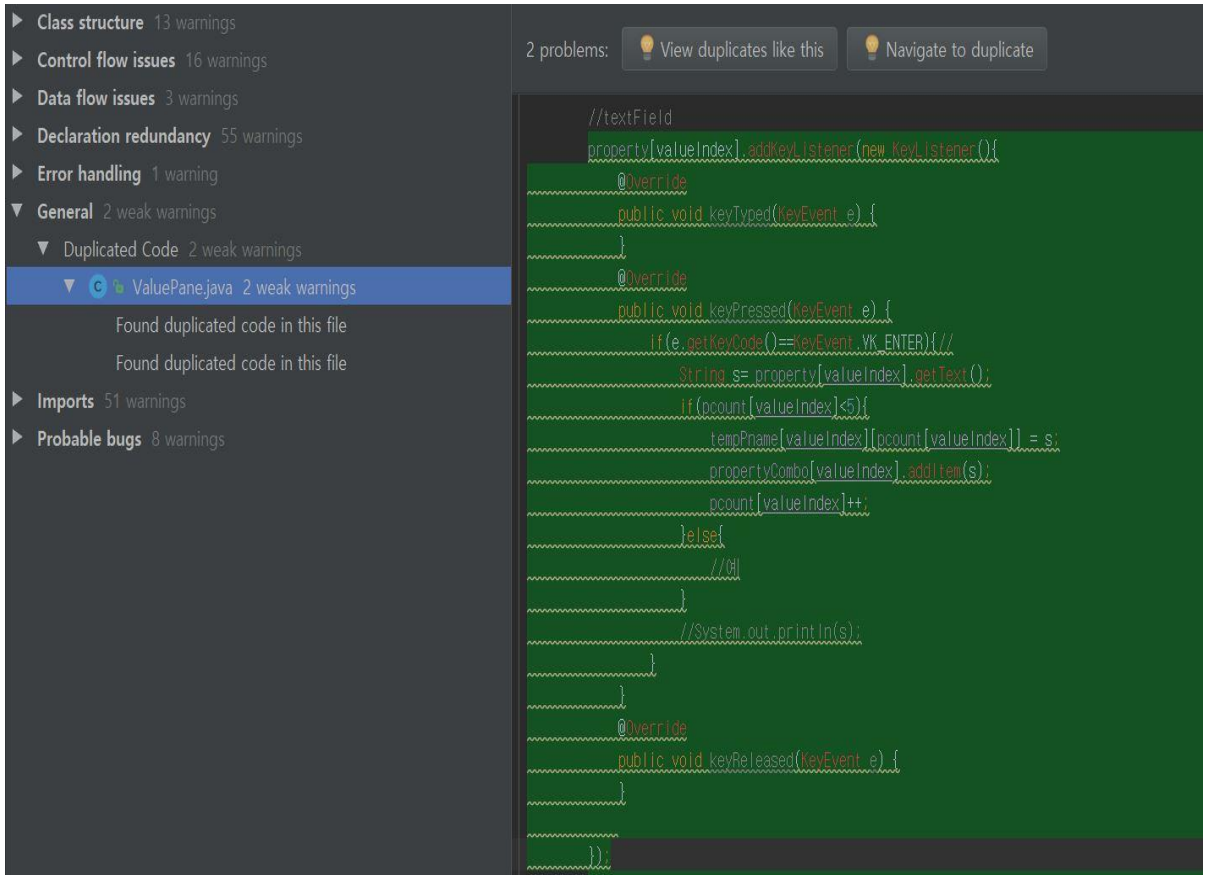




Static Analysis Lv1. IntelliJ

T5. SSS CPT Tool

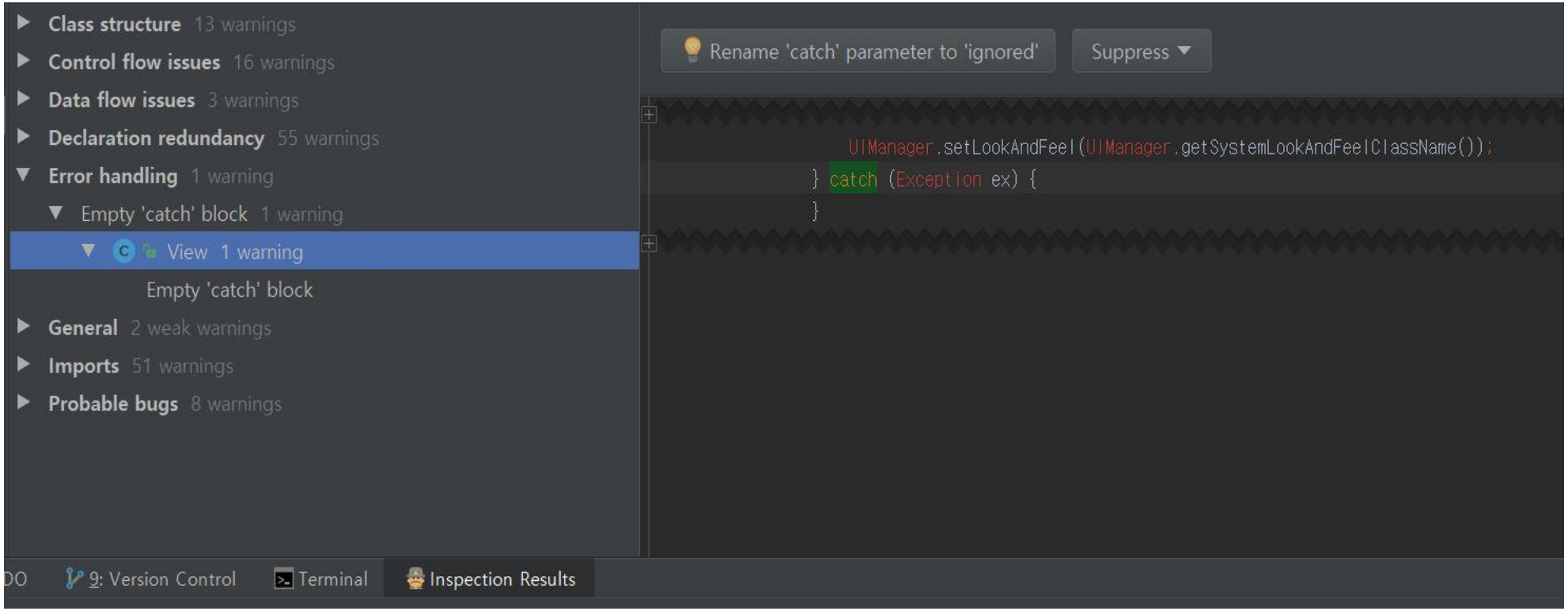




코드 중복

Static Analysis Lv1. IntelliJ

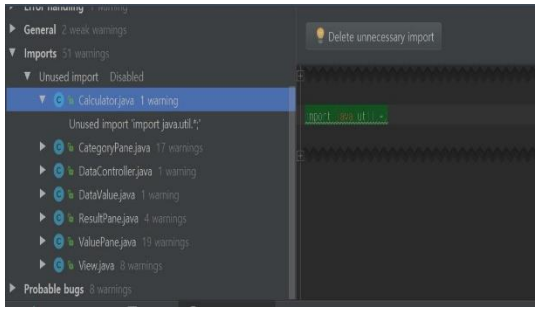
T5. SSS CPT Tool

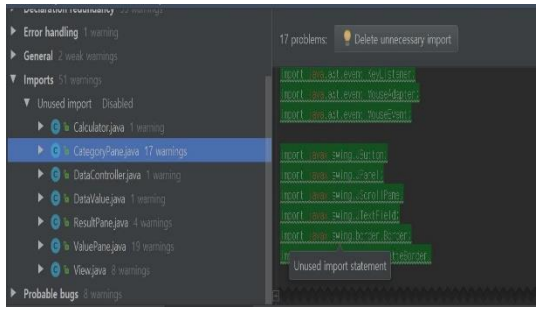


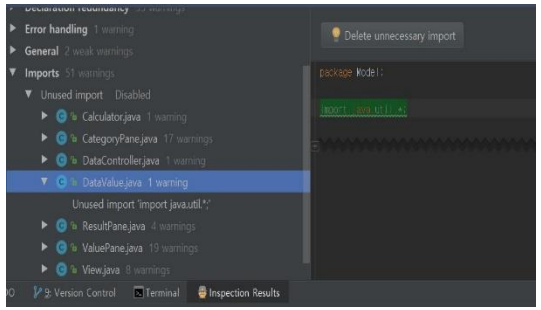
블록이 비어있음

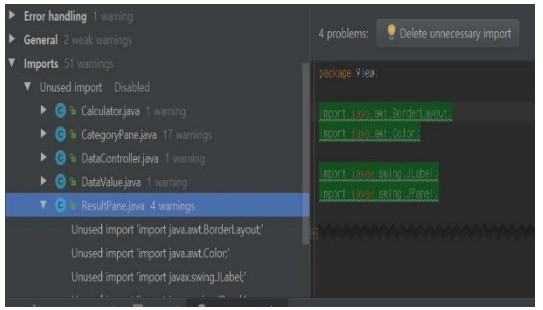
Static Analysis Lv1. IntelliJ

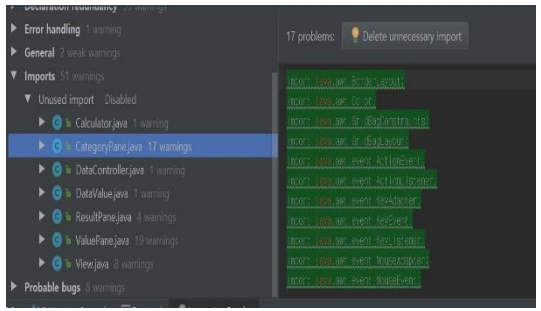
T5. SSS CPT Tool

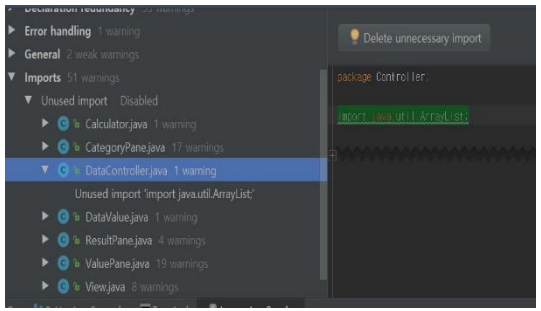


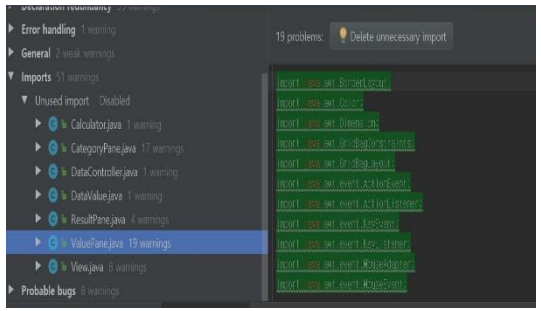


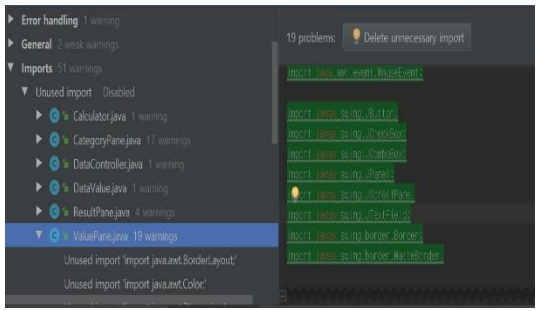


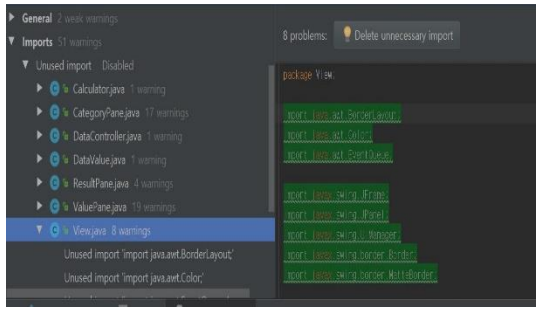








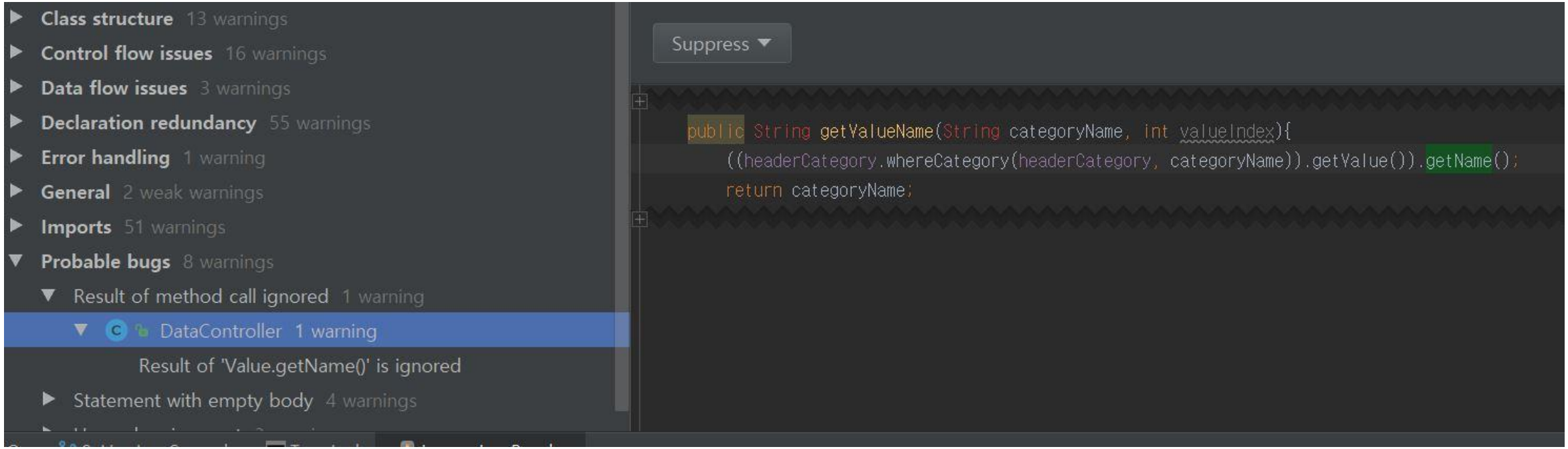




Import한 것들이 사용되지 않음

Static Analysis Lv1. IntelliJ

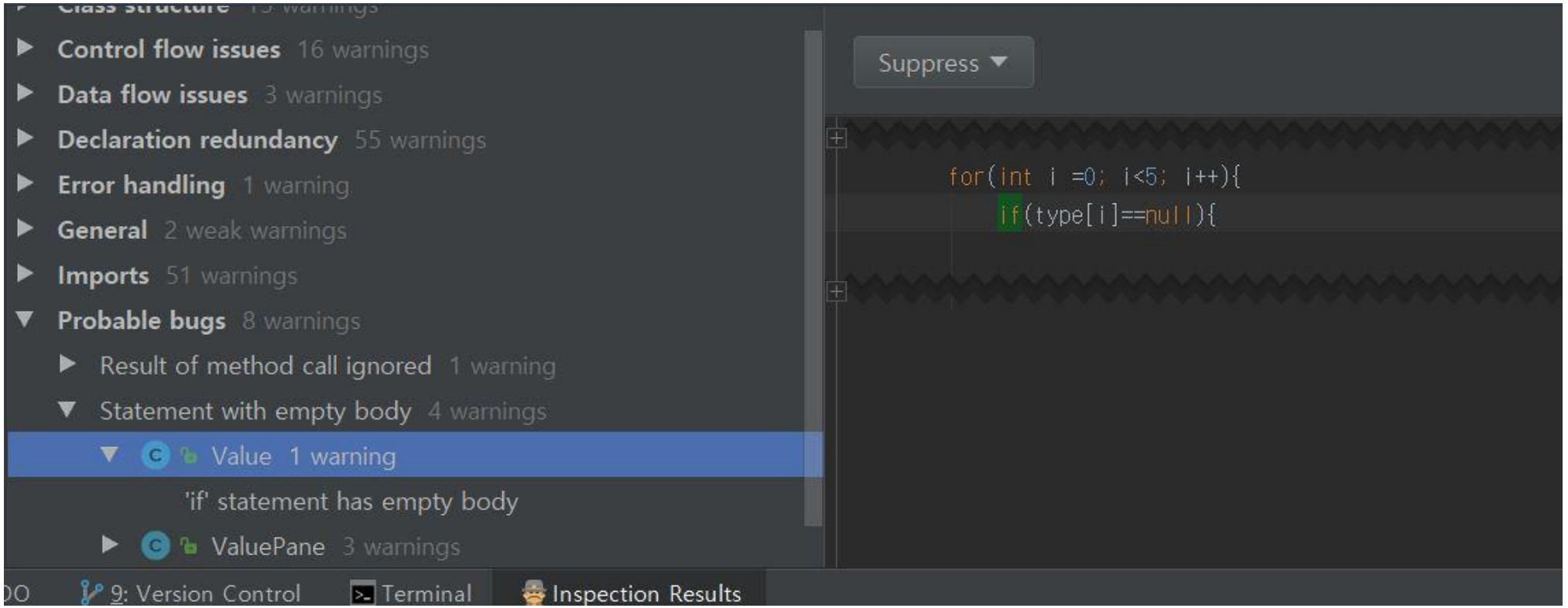
T5. SSS CPT Tool



getname 호출 후 사용 x

Static Analysis Lv1. IntelliJ

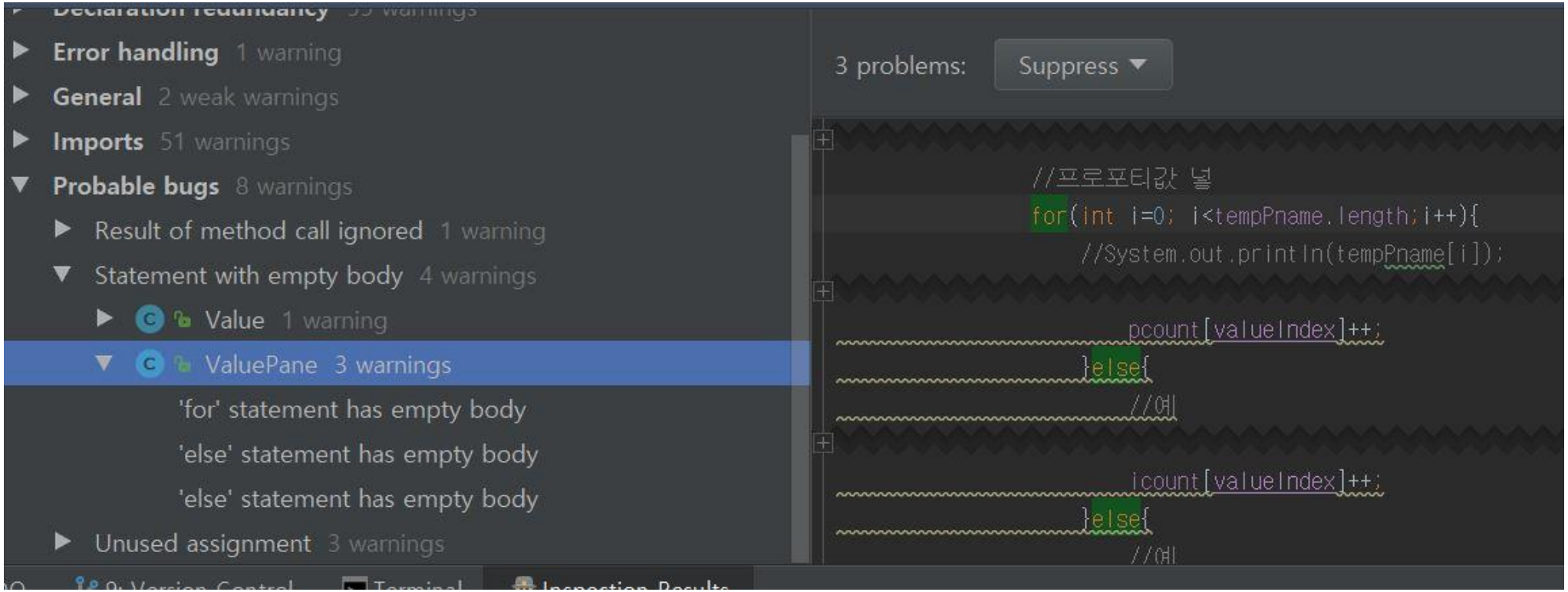
T5. SSS CPT Tool



If문의 body가 없음

Static Analysis Lv1. IntelliJ

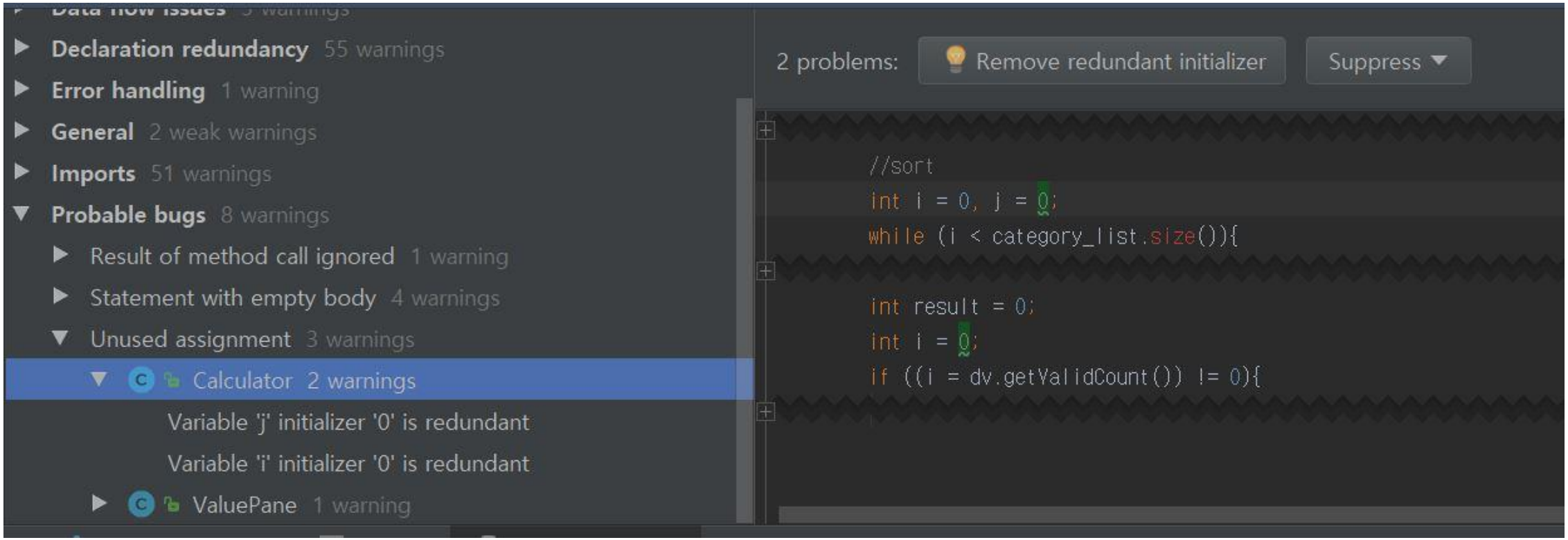
T5. SSS CPT Tool



For / else문의 body가 없음

Static Analysis Lv1. IntelliJ

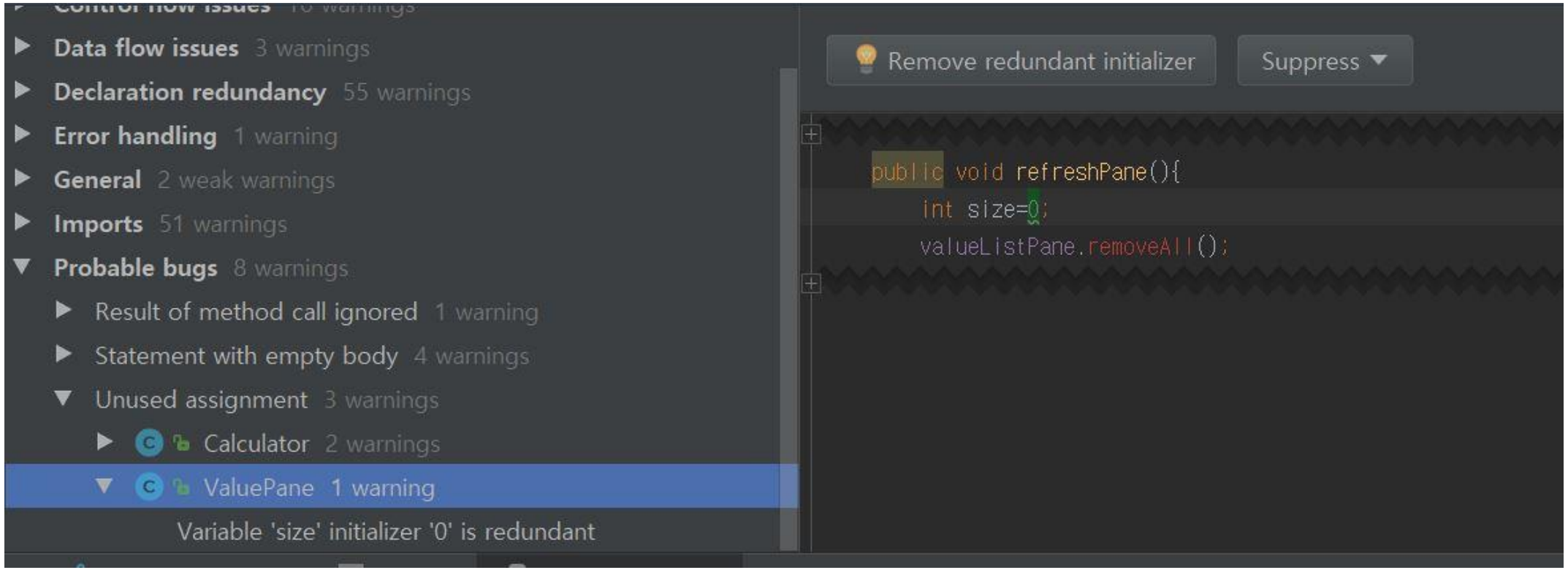
T5. SSS CPT Tool



j / i 초기화 후 사용 x

Static Analysis Lv1. IntelliJ

T5. SSS CPT Tool



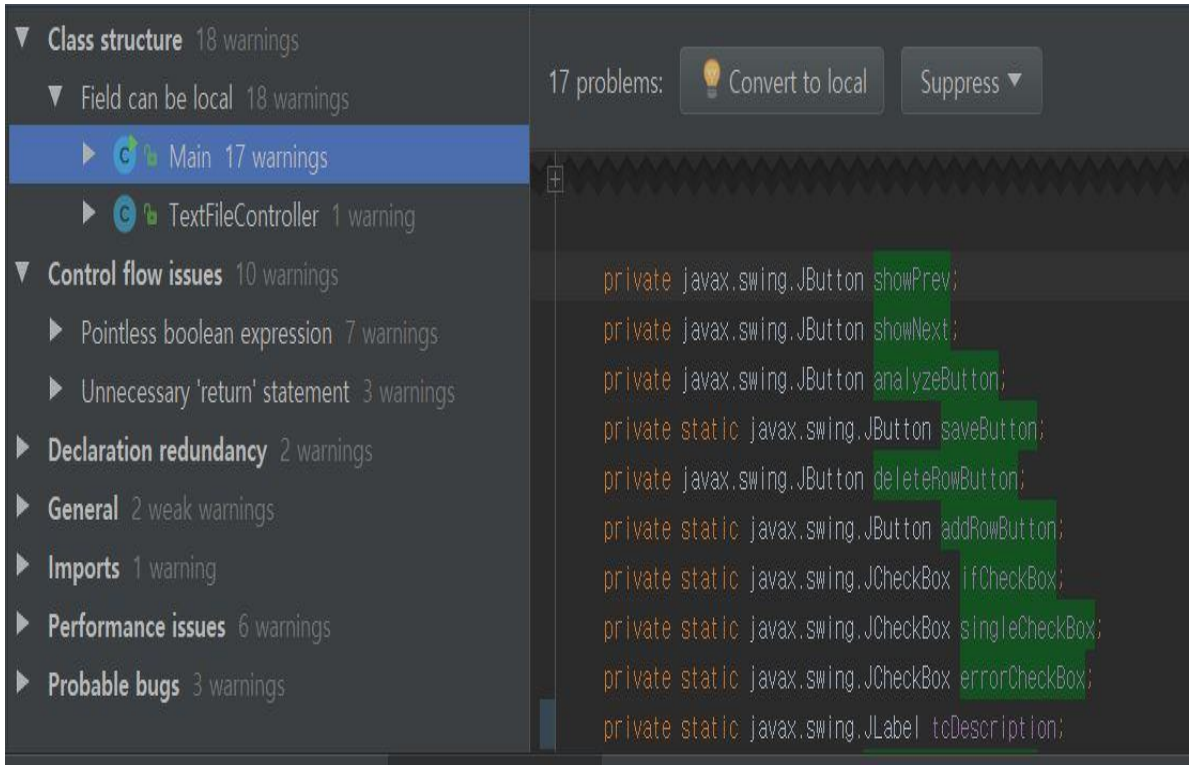
Size 초기화 후 사용 x

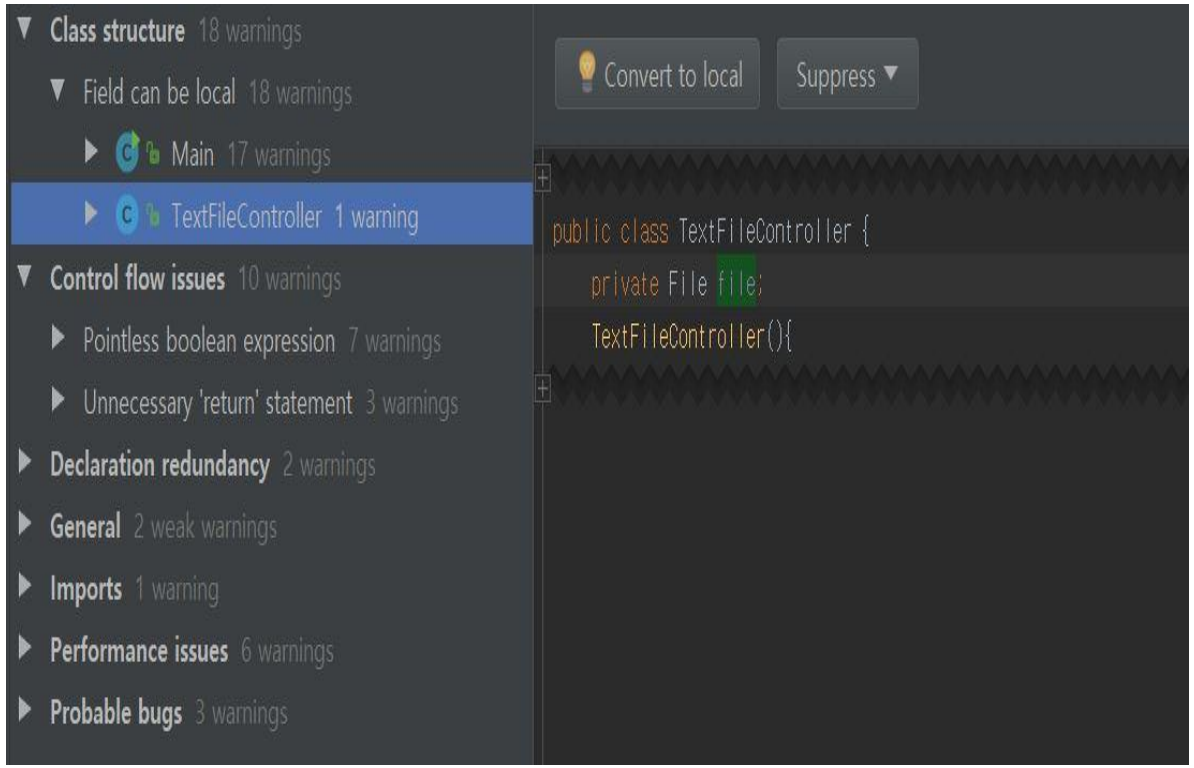
Team 8

Feesual CPT

Static Analysis Lv1. IntelliJ

T8. Feesual CPT

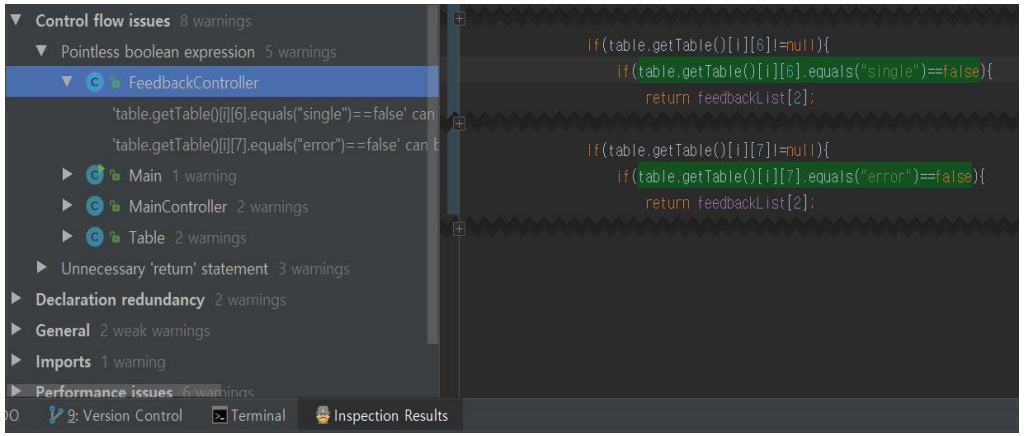


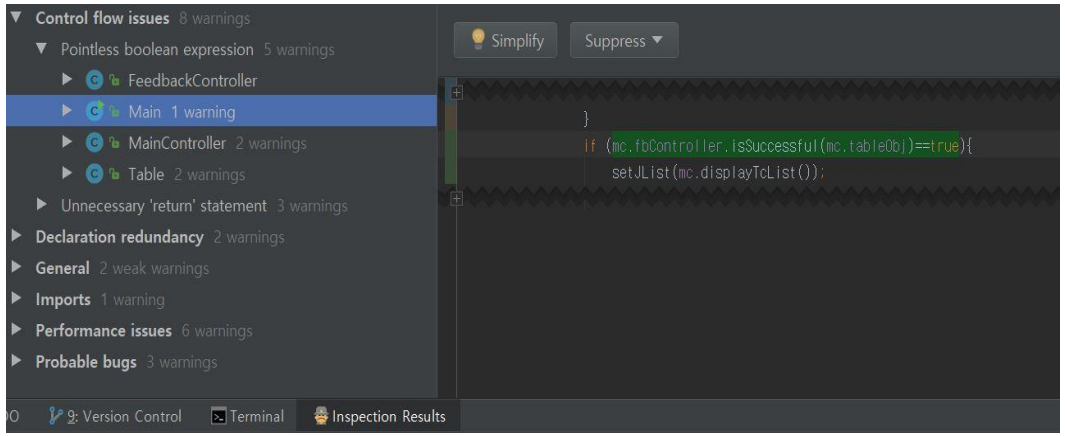


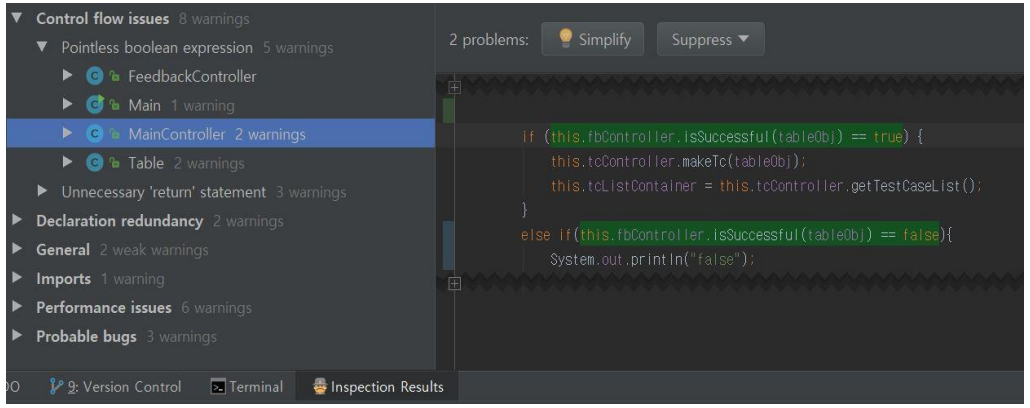
변수가 하나의 메소드에서만 사용 (지역변수 추천)

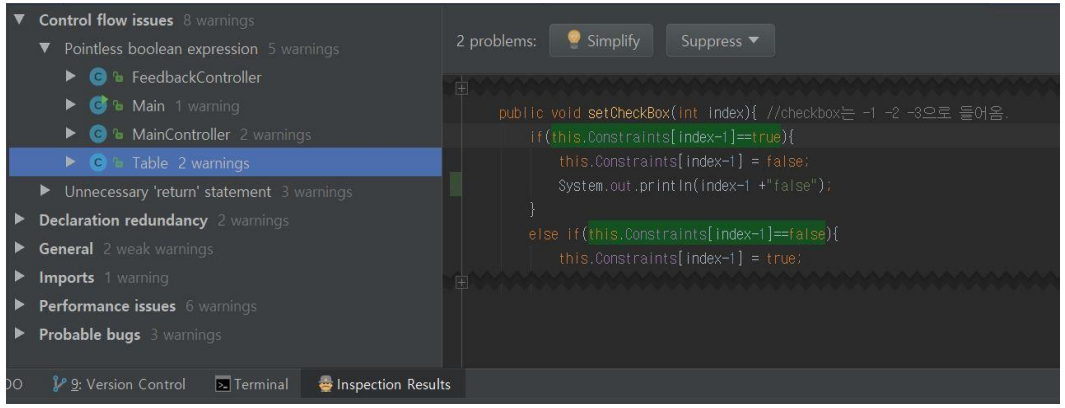
Static Analysis Lv1. IntelliJ

T8. Feesual CPT





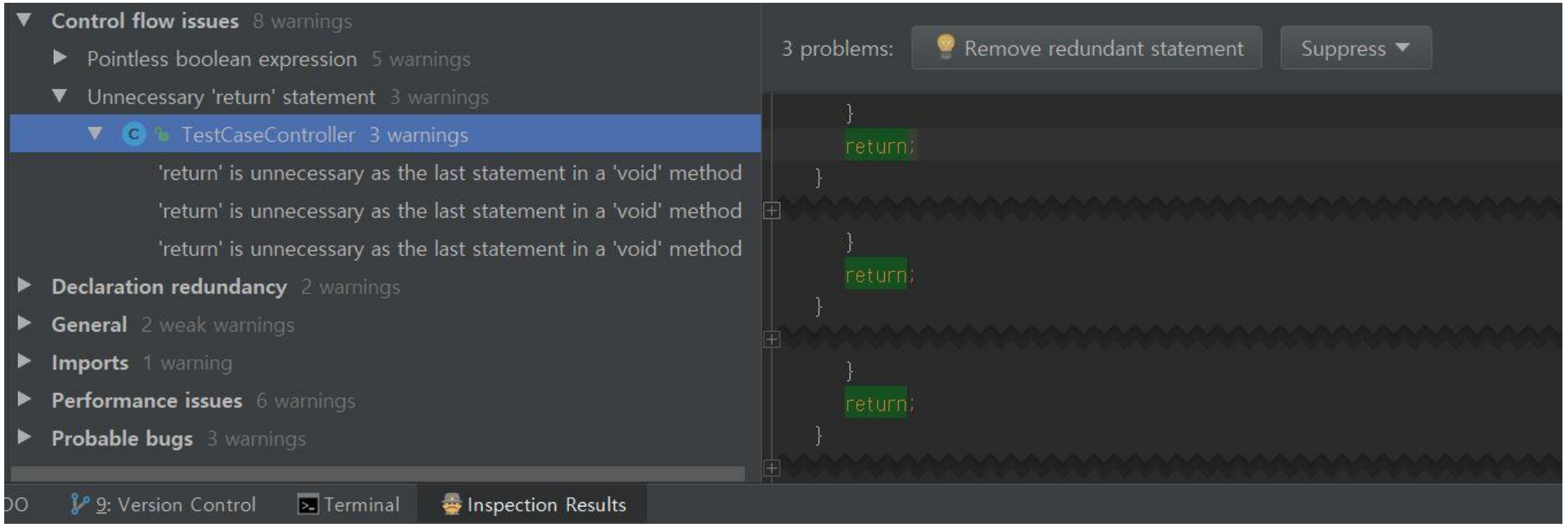




‘ == true / false ‘ 사용 (단순히 expression 추천)

Static Analysis Lv1. IntelliJ

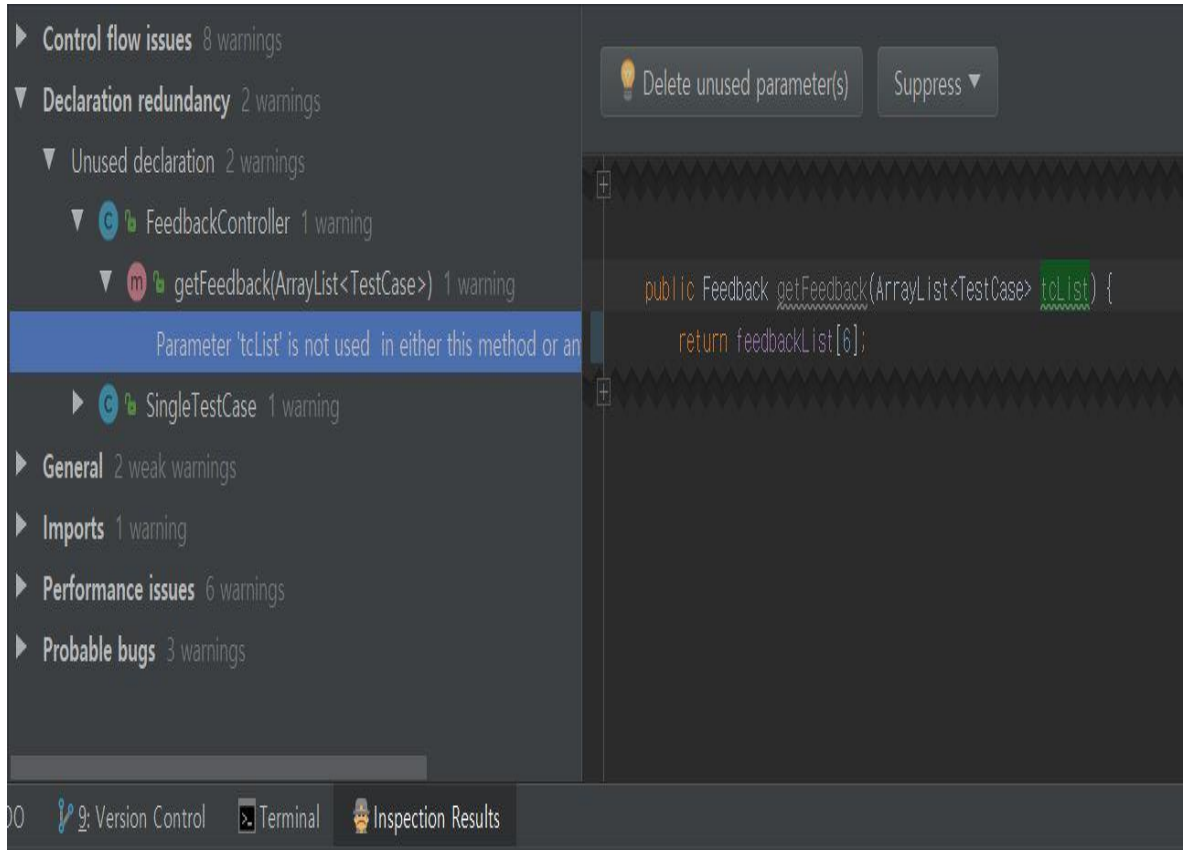
T8. Feesual CPT

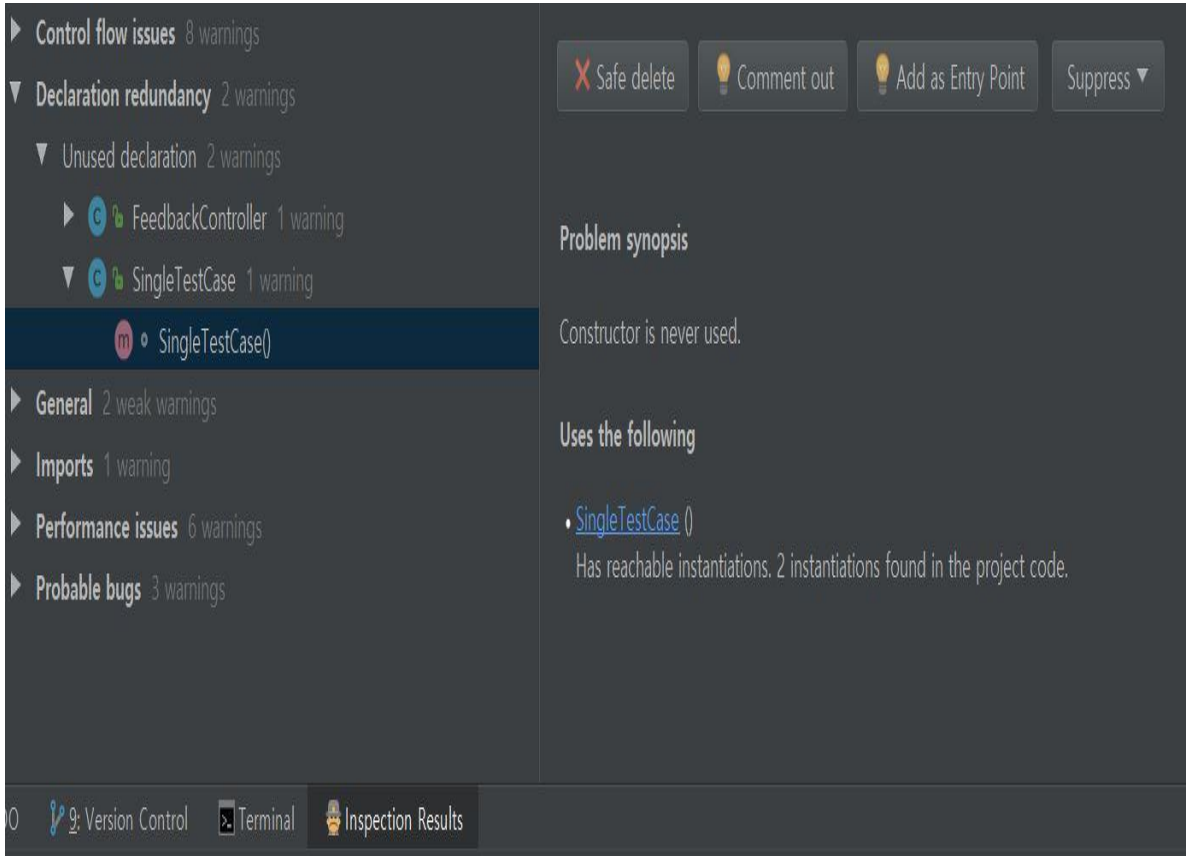


불필요한 return문 사용

Static Analysis Lv1. IntelliJ

T8. Feesual CPT

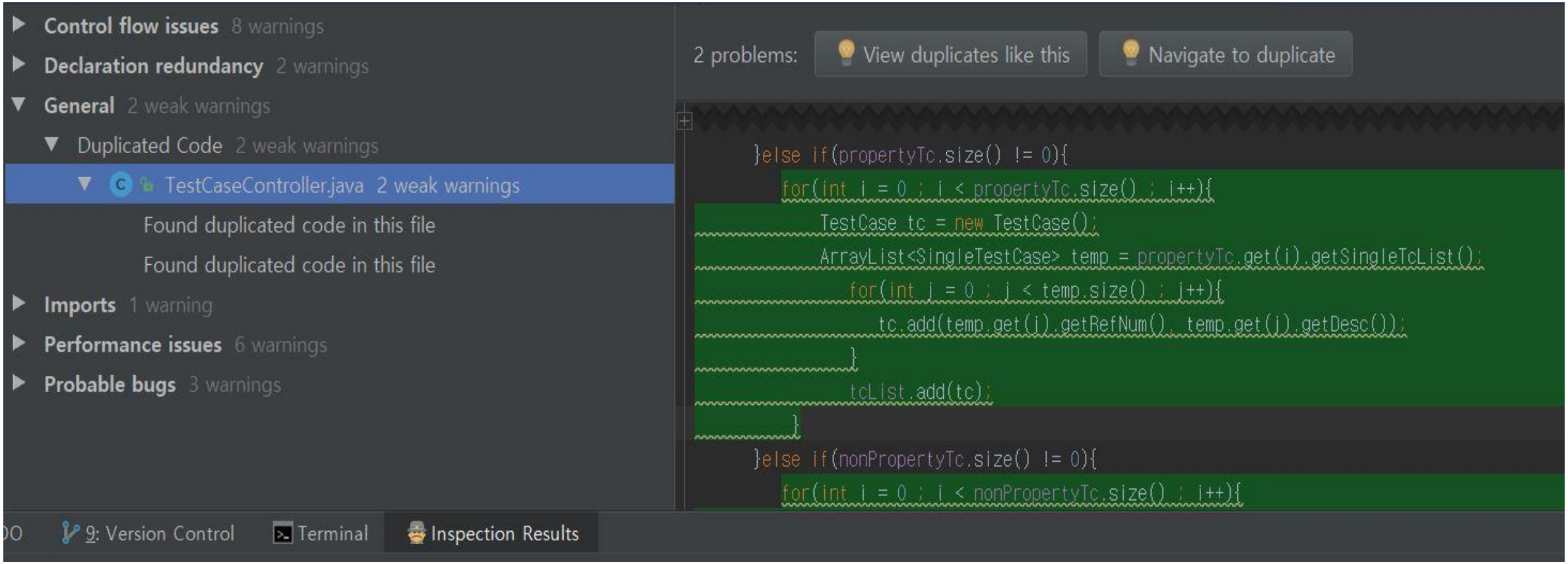




메소드 / 생성자 사용 x

Static Analysis Lv1. IntelliJ

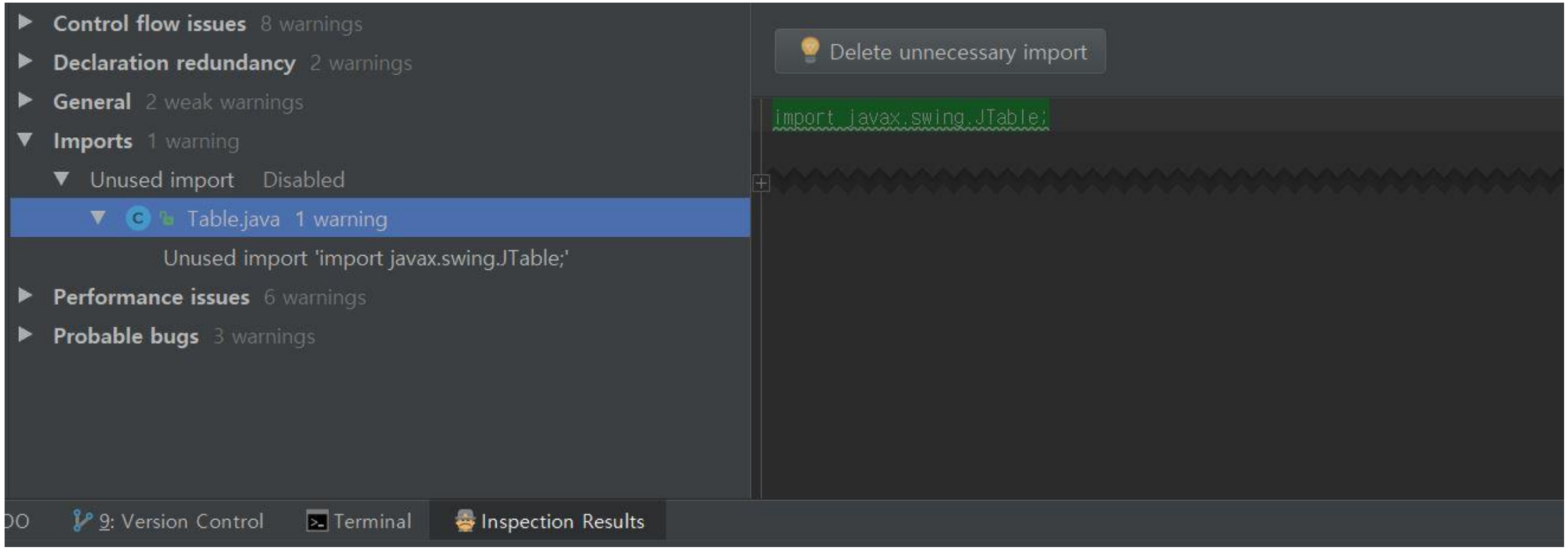
T8. Feesual CPT



동일한 코드 중복

Static Analysis Lv1. IntelliJ

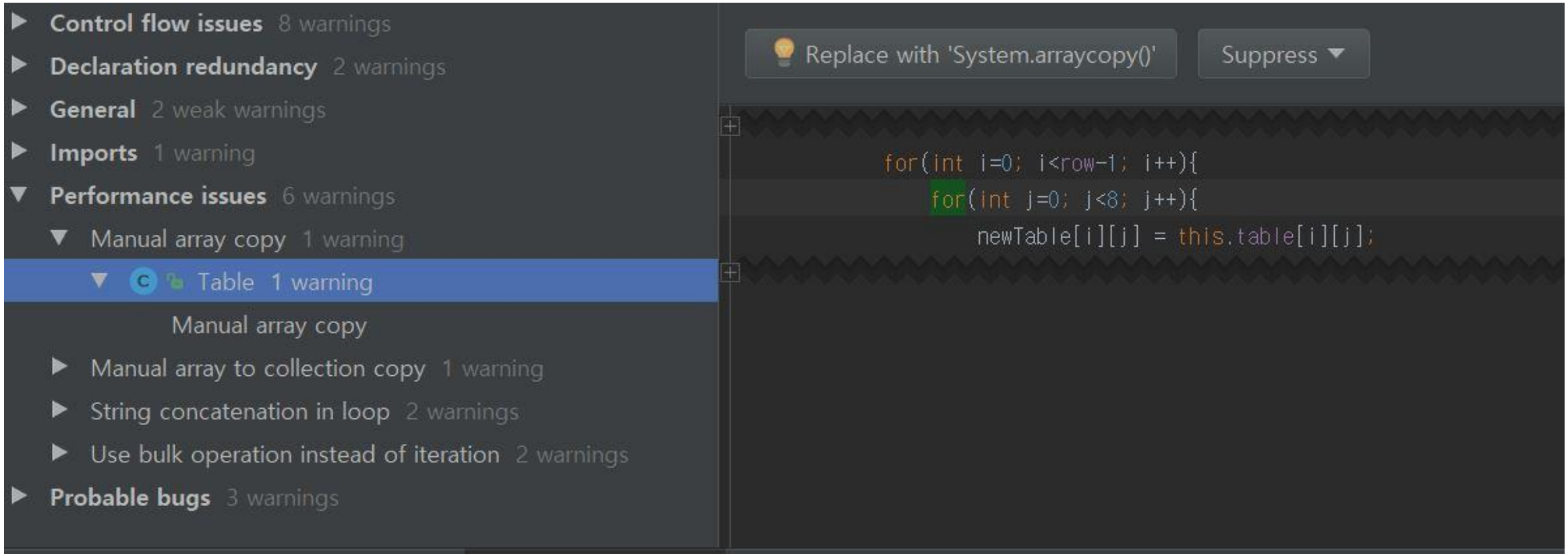
T8. Feesual CPT



Import한 내용 사용 x

Static Analysis Lv1. IntelliJ

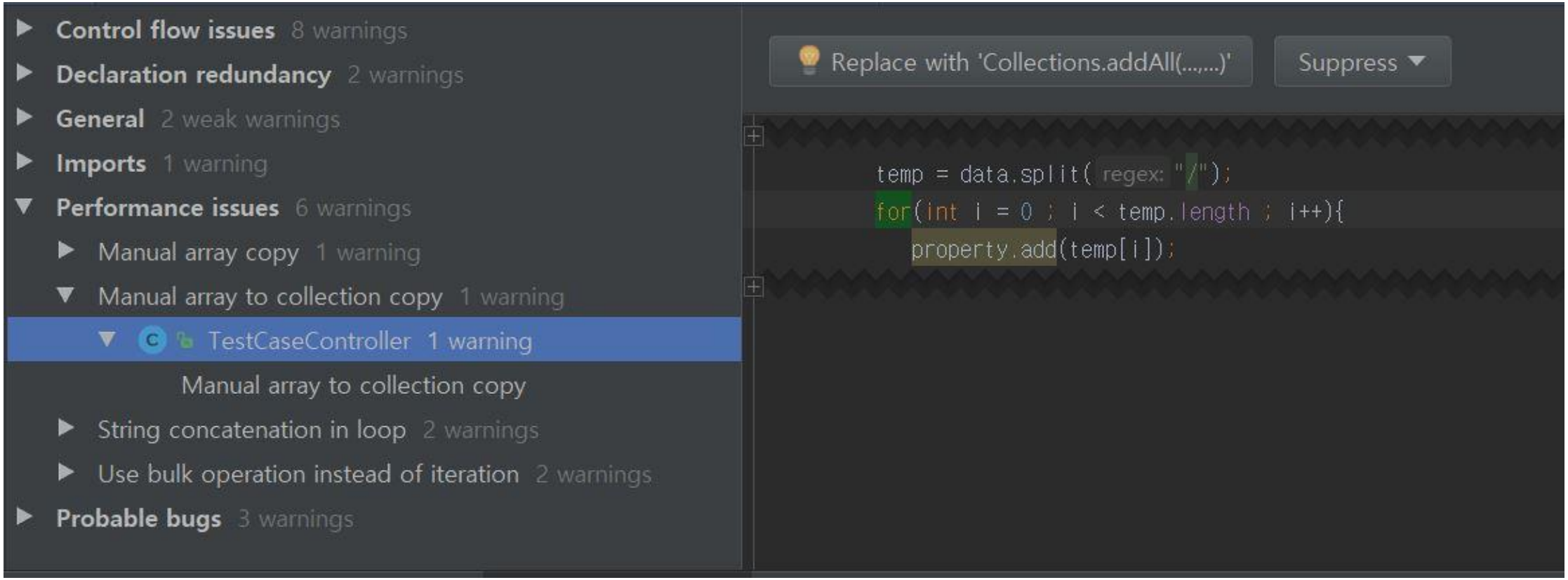
T8. Feesual CPT



단순 array 복사 (arraycopy 추천)

Static Analysis Lv1. IntelliJ

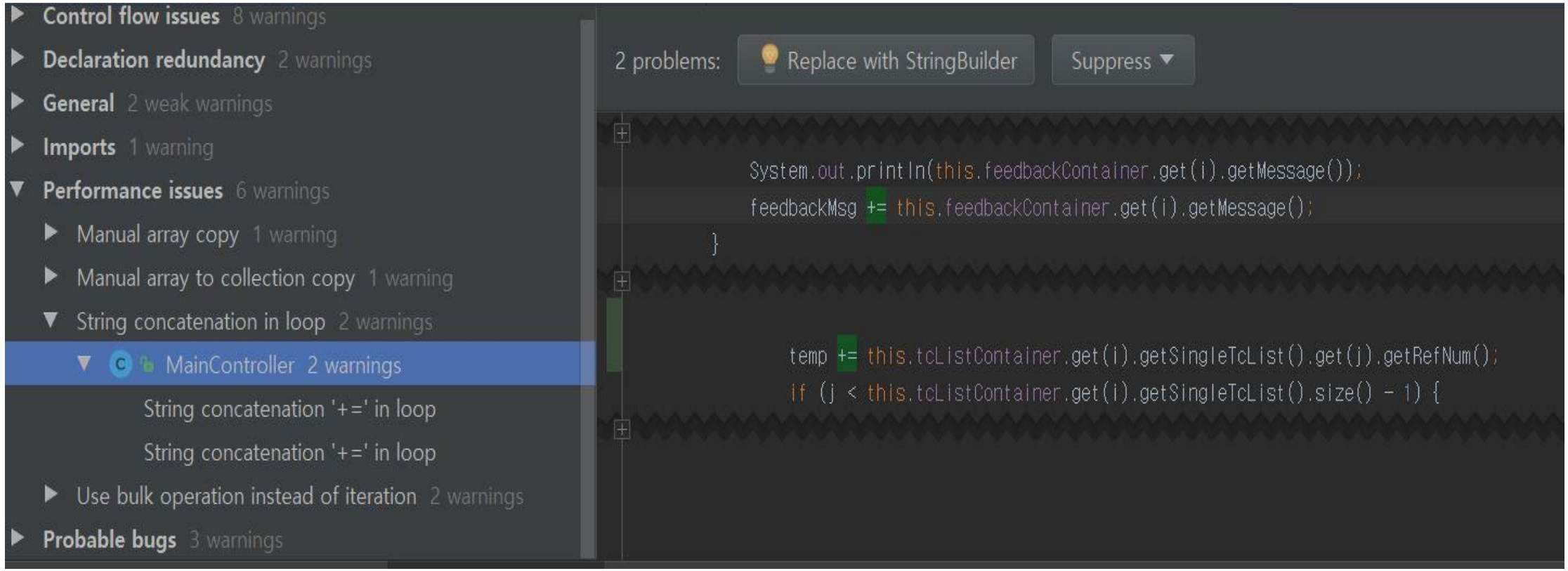
T8. Feesual CPT



Collection에 반복문으로 하나씩 array 내용 삽입
(collection.addall 메소드 추천)

Static Analysis Lv1. IntelliJ

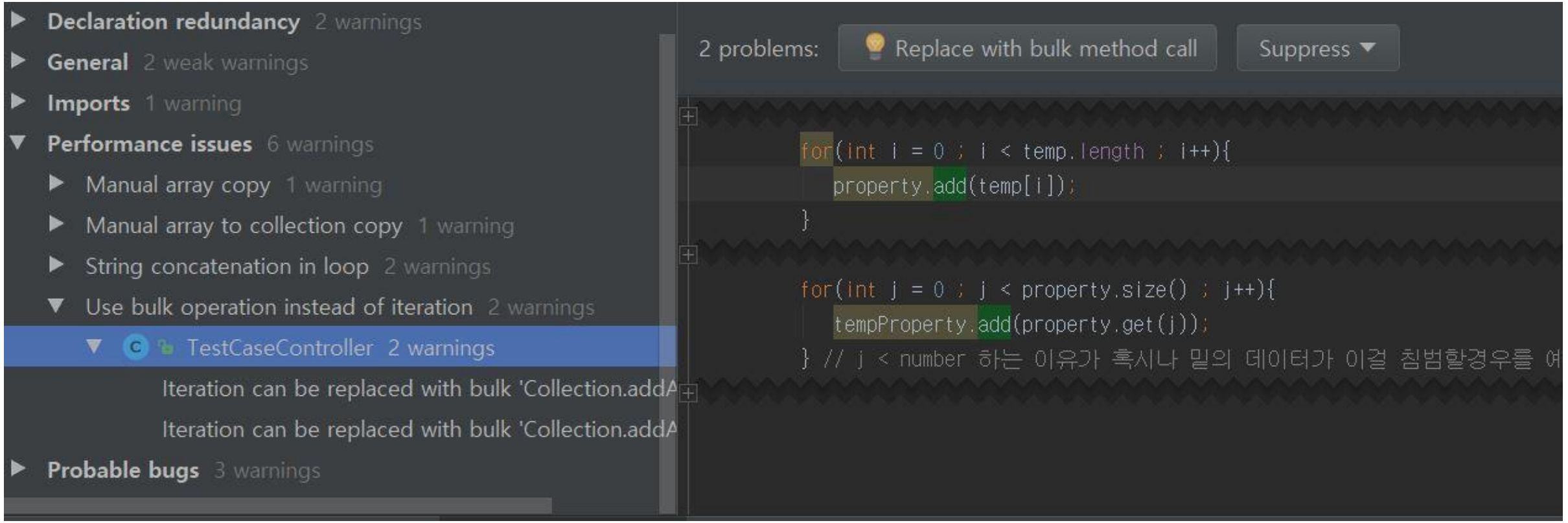
T8. Feesual CPT



반복문으로 String 복사

Static Analysis Lv1. IntelliJ

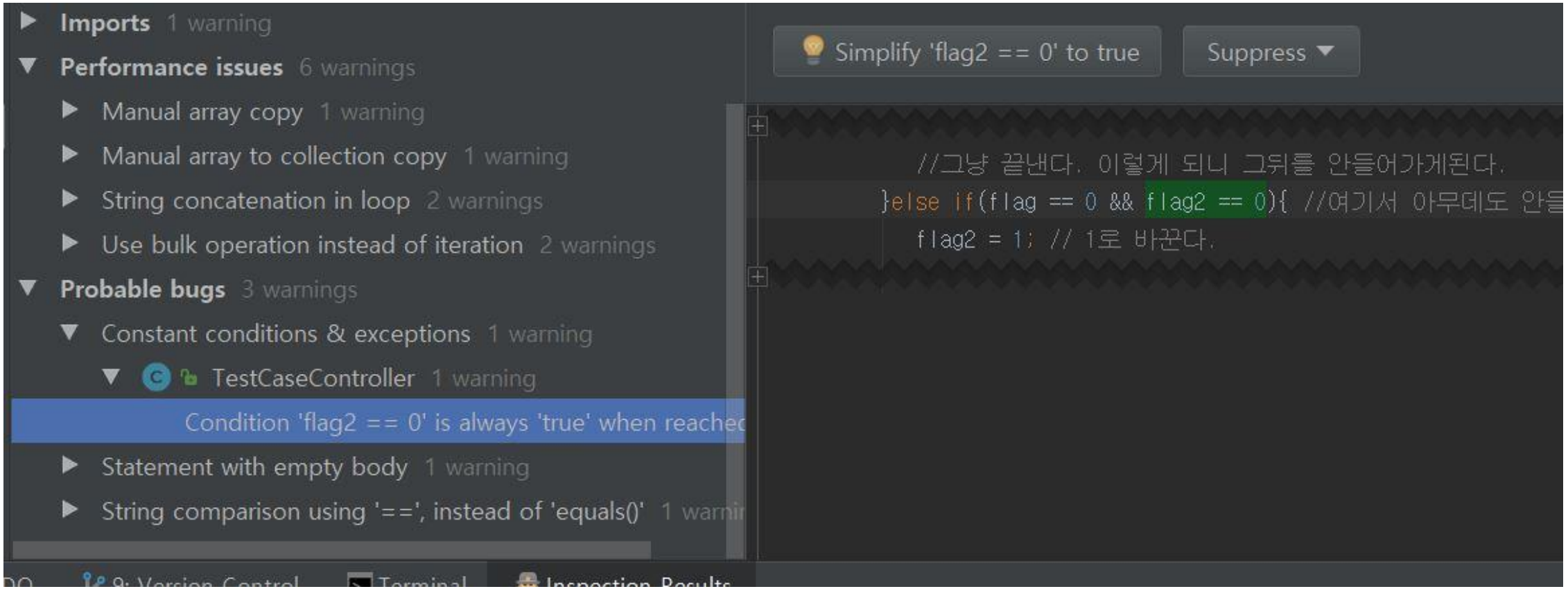
T8. Feesual CPT



Collection 복사 메소드 (collection.addall 추천)

Static Analysis Lv1. IntelliJ

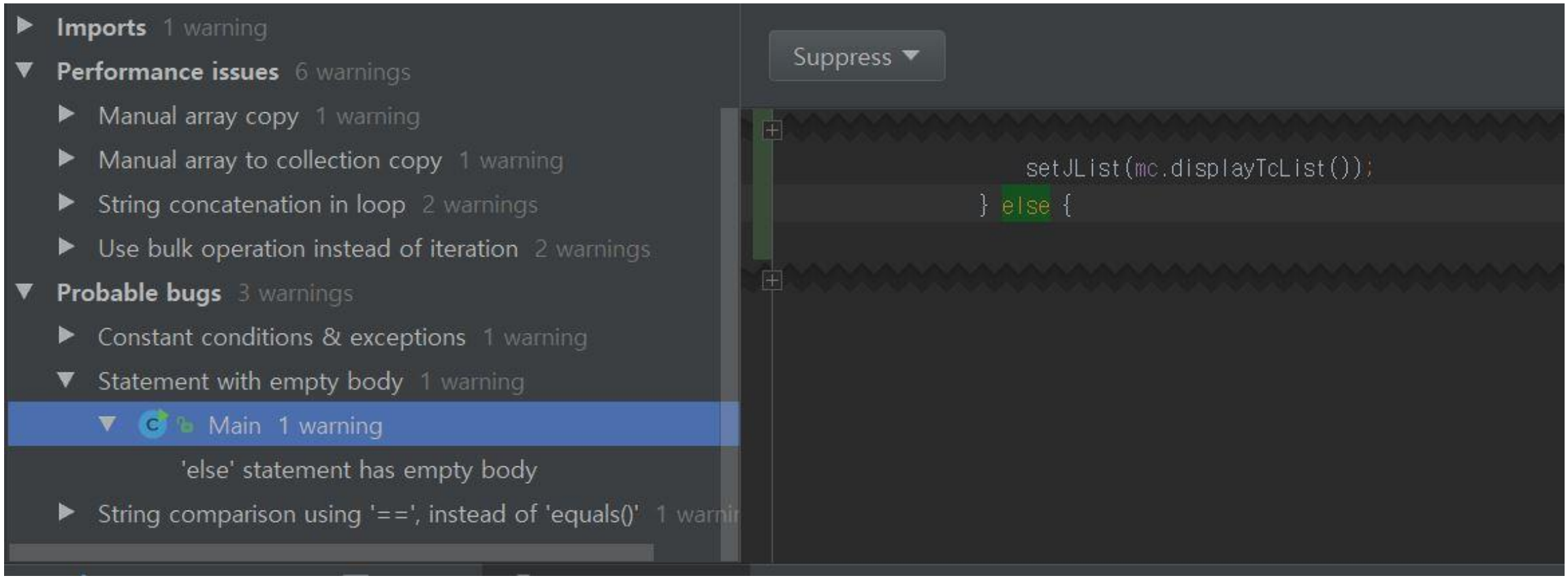
T8. Feesual CPT



Flag2는 이 line에서 항상 true

Static Analysis Lv1. IntelliJ

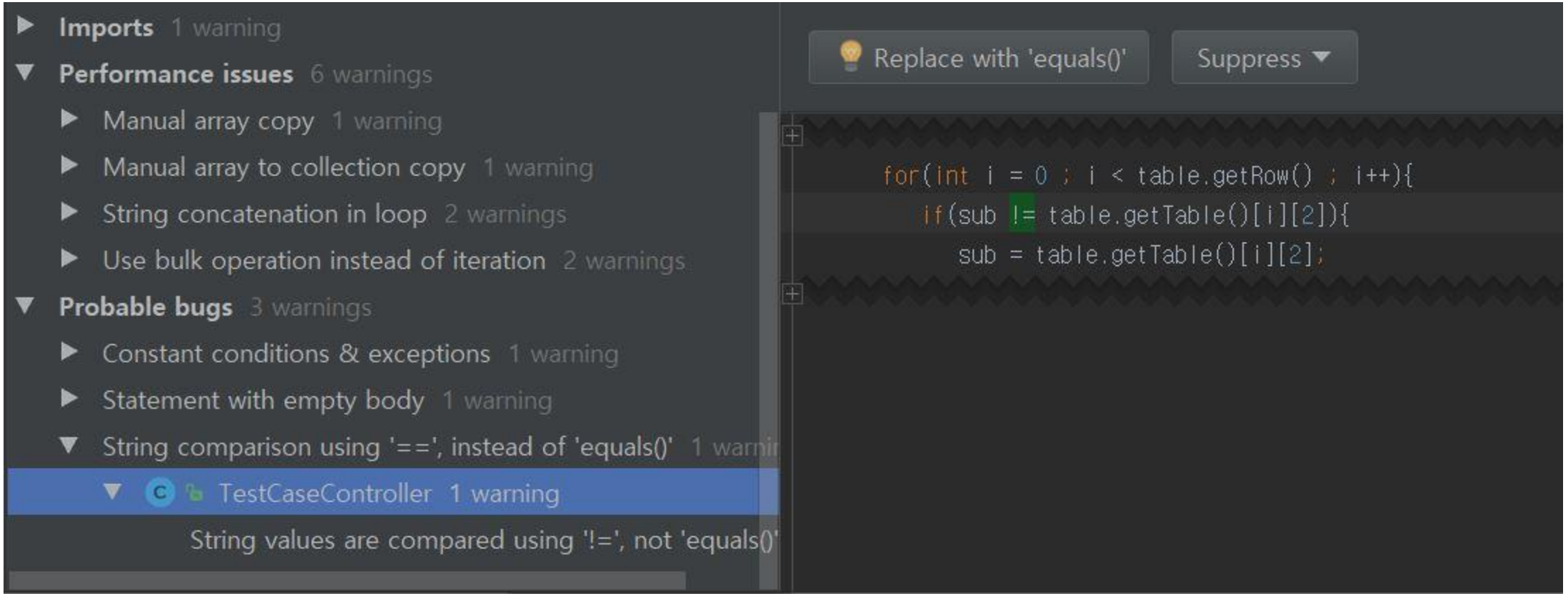
T8. Feesual CPT



else문 body가 비어있음

Static Analysis Lv1. IntelliJ

T8. Feesual CPT



Stirng 비교문에 != / == 사용 (equals()함수 사용)

Static Analysis

Lv.2_Eclipse metrics

Team 5

SSS CPT

Static Analysis Lv2_Eclipse metrics

T5. SSS CPT Tool

Metric	Total	Mean	Std. Dev.	Maximum	Resource causing Maximum	Method
McCabe Cyclomatic Complexity (avg/max per method)		1.552	1.769	12	/ThreeS/src/Controller/Calculator.java	internal_calculate
src		1.552	1.769	12	/ThreeS/src/Controller/Calculator.java	internal_calculate
Controller		1.719	2.465	12	/ThreeS/src/Controller/Calculator.java	internal_calculate
Calculator.java		8.667	3.399	12	/ThreeS/src/Controller/Calculator.java	internal_calculate
Calculator		8.667	3.399	12	/ThreeS/src/Controller/Calculator.java	internal_calculate
internal_calculate	12					
calculate	10					
findKey	4					
MainController.java		1	0	1	/ThreeS/src/Controller/MainController.java	MainController
DataController.java		1	0	1	/ThreeS/src/Controller/DataController.java	DataController
Model		1.551	1.592	12	/ThreeS/src/Model/Value.java	Value
Value.java		1.576	1.939	12	/ThreeS/src/Model/Value.java	Value
Value		1.576	1.939	12	/ThreeS/src/Model/Value.java	Value
Value	12					
whereValue	4					
first	2					

Calulator.internal calculate 메소드
Value.Value 생성자

Cyclomatic Complexity가 높게 나옴

Static Analysis Lv2_Eclipse metrics

T5. SSS CPT Tool

Number of Parameters (avg/max per method)		0.958	1.09	6	/ThreeS/src/Model/Value.java	Value
src		0.958	1.09	6	/ThreeS/src/Model/Value.java	Value
Model		0.837	1.007	6	/ThreeS/src/Model/Value.java	Value
Value.java		0.848	1.234	6	/ThreeS/src/Model/Value.java	Value
Value		0.848	1.234	6	/ThreeS/src/Model/Value.java	Value
Value	6					
addLast	4					
whereValue	2					
set	2					
setPrev	1					
setNext	1					
remove	1					

Value의 Private생성자가
private변수 6개에 대한 초기화

Parameter가 많다고 판정

Team 8

Feesual CPT

Static Analysis Lv2_Eclipse metrics

T8. Feesual CPT

Metric	Total	Mean	Std. Dev.	Maximum	Resource causing Maximum	Method
McCabe Cyclomatic Complexity (avg/max per method)		3.259	6.435	40	/SMA2017_FeesualCPT/src/TestCaseController.java	makeTc
src		3.259	6.435	40	/SMA2017_FeesualCPT/src/TestCaseController.java	makeTc
(default package)		3.259	6.435	40	/SMA2017_FeesualCPT/src/TestCaseController.java	makeTc
TestCaseController.java		10.571	13.468	40	/SMA2017_FeesualCPT/src/TestCaseController.java	makeTc
TestCaseController		10.571	13.468	40	/SMA2017_FeesualCPT/src/TestCaseController.java	makeTc
makeTc	40					
recursive2	20					
checkProperty	5					
recursive1	4					
saveProperty	3					
TestCaseController	1					
getTestCaseList	1					
FeedbackController.java		6.25	8.526	21	/SMA2017_FeesualCPT/src/FeedbackController.java	getFeedback
FeedbackController		6.25	8.526	21	/SMA2017_FeesualCPT/src/FeedbackController.java	getFeedback
getFeedback	21					
isSuccessful	2					
FeedbackController	1					
getFeedback	1					
TextFileController.java		7	6	13	/SMA2017_FeesualCPT/src/TextFileController.java	saveRequest
TextFileController		7	6	13	/SMA2017_FeesualCPT/src/TextFileController.java	saveRequest
saveRequest	13					
TextFileController	1					
MainController.java		1.7	1.269	5	/SMA2017_FeesualCPT/src/MainController.java	displayTcList
Main.java		2.167	1.344	4	/SMA2017_FeesualCPT/src/Main.java	getJTableData

TestCaseController.makeTc 메소드
TestCaseController.recursive2 메소드
FeedbackController.getFeedback 메소드
TextFileController.saveRequest 메소드

Cyclomatic Complexity가 높게 나옴

Static Analysis Lv2_Eclipse metrics

T8. Feesual CPT

Metric	Total	Mean	Std. Dev.	Maximum	Resource causing Maximum	Method
Nested Block Depth (avg/max per method)		1.907	1.531	7	/SMA2017_FeesualCPT/src/FeedbackController.java	getFeedback
src		1.907	1.531	7	/SMA2017_FeesualCPT/src/FeedbackController.java	getFeedback
(default package)		1.907	1.531	7	/SMA2017_FeesualCPT/src/FeedbackController.java	getFeedback
FeedbackController.java		2.75	2.487	7	/SMA2017_FeesualCPT/src/FeedbackController.java	getFeedback
FeedbackController		2.75	2.487	7	/SMA2017_FeesualCPT/src/FeedbackController.java	getFeedback
getFeedback	7					
isSuccessful	2					
FeedbackController	1					
getFeedback	1					
TestCaseController.java		3.571	2.129	7	/SMA2017_FeesualCPT/src/TestCaseController.java	makeTc
TestCaseController		3.571	2.129	7	/SMA2017_FeesualCPT/src/TestCaseController.java	makeTc
makeTc	7					
recursive2	6					
checkProperty	4					
recursive1	3					
saveProperty	3					
TestCaseController	1					
getTestCaseList	1					
TextFileController.java		3	2	5	/SMA2017_FeesualCPT/src/TextFileController.java	saveRequest
MainController.java		1.5	0.922	4	/SMA2017_FeesualCPT/src/MainController.java	displayTcList

FeedbackController.getFeedback 메소드
TestCaseController.makeTc 메소드
TestCaseController.recursive2 메소드

중첩된 Block이 많음

Static Analysis

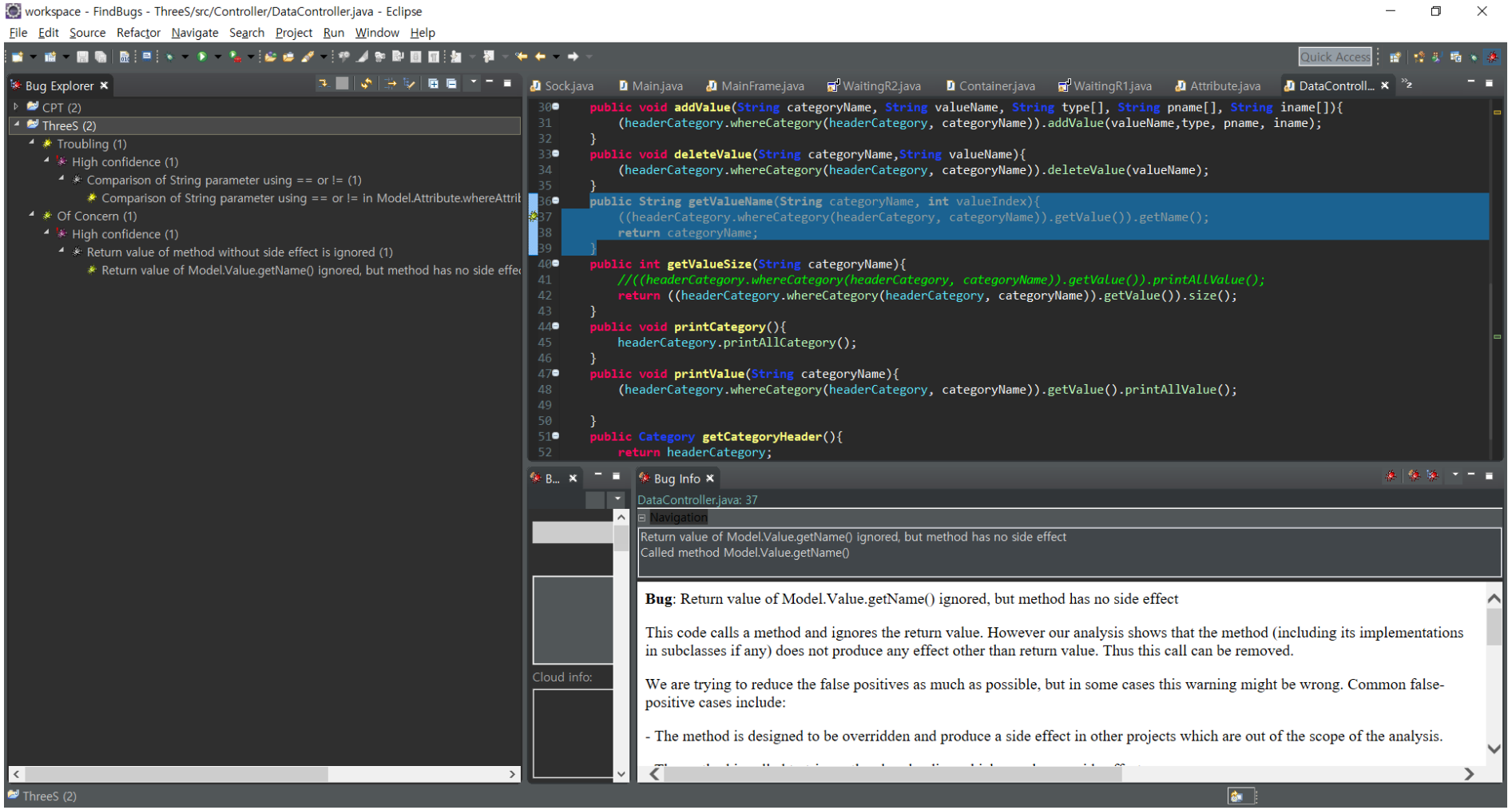
Lv.3_Find Bugs

Team 5

SSS CPT

Static Analysis Lv3_Find Bugs

T5. SSS CPT Tool



Static Analysis Lv3_Find Bugs

T5. SSS CPT Tool

1. String 파라미터에 대한 == , != 연산자 사용

2. 함수에서 입력인자가 변형 없이 출력인자로 나옴

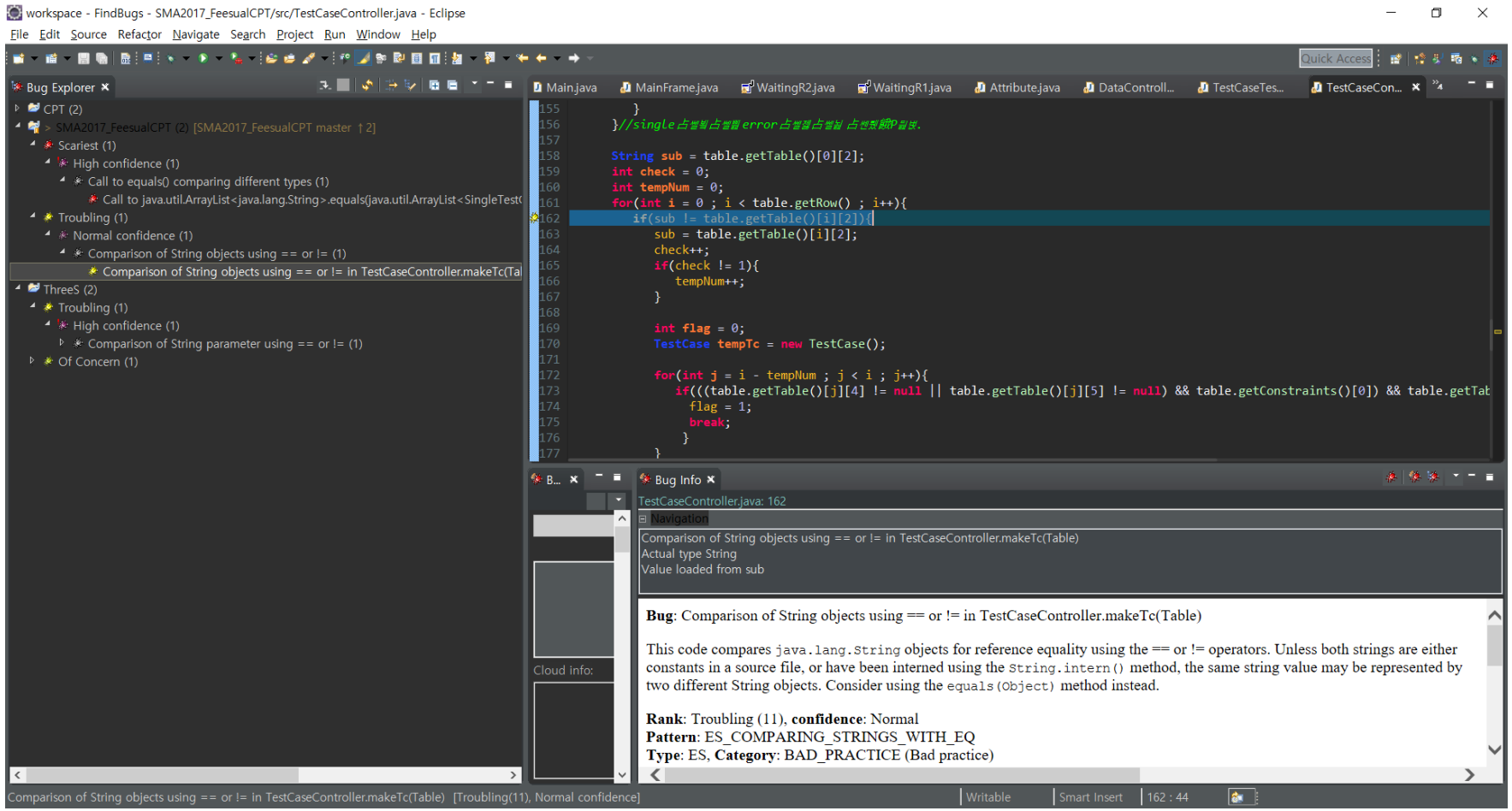
```
public String getValueName(String categoryName, int valueIndex) {
((headerCategory.whereCategory(headerCategory,categoryName)).getValue()).getName();
return categoryName;
}
```

Team 8

Feesual CPT

Static Analysis Lv3_Find Bugs

T8. Feesual CPT



Static Analysis Lv3_Find Bugs

T8. Feesual CPT

1. String 파라미터에 == , != 연산자 사용

2. 서로 다른 성격의 자료형간 비교

Q & A