Nusrs Testing In CTIP

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프로젝트 Process

- Testing Plan 작성
- Testing Design 작성
- Eclipse 설치
- SubClipse 설치
- Jfeature 설치
- Svn-xp.com 에 프로젝트 등록
- TestCase 도출
- Testing unit 환경설정
- TestCase 입력
- 결과 도출

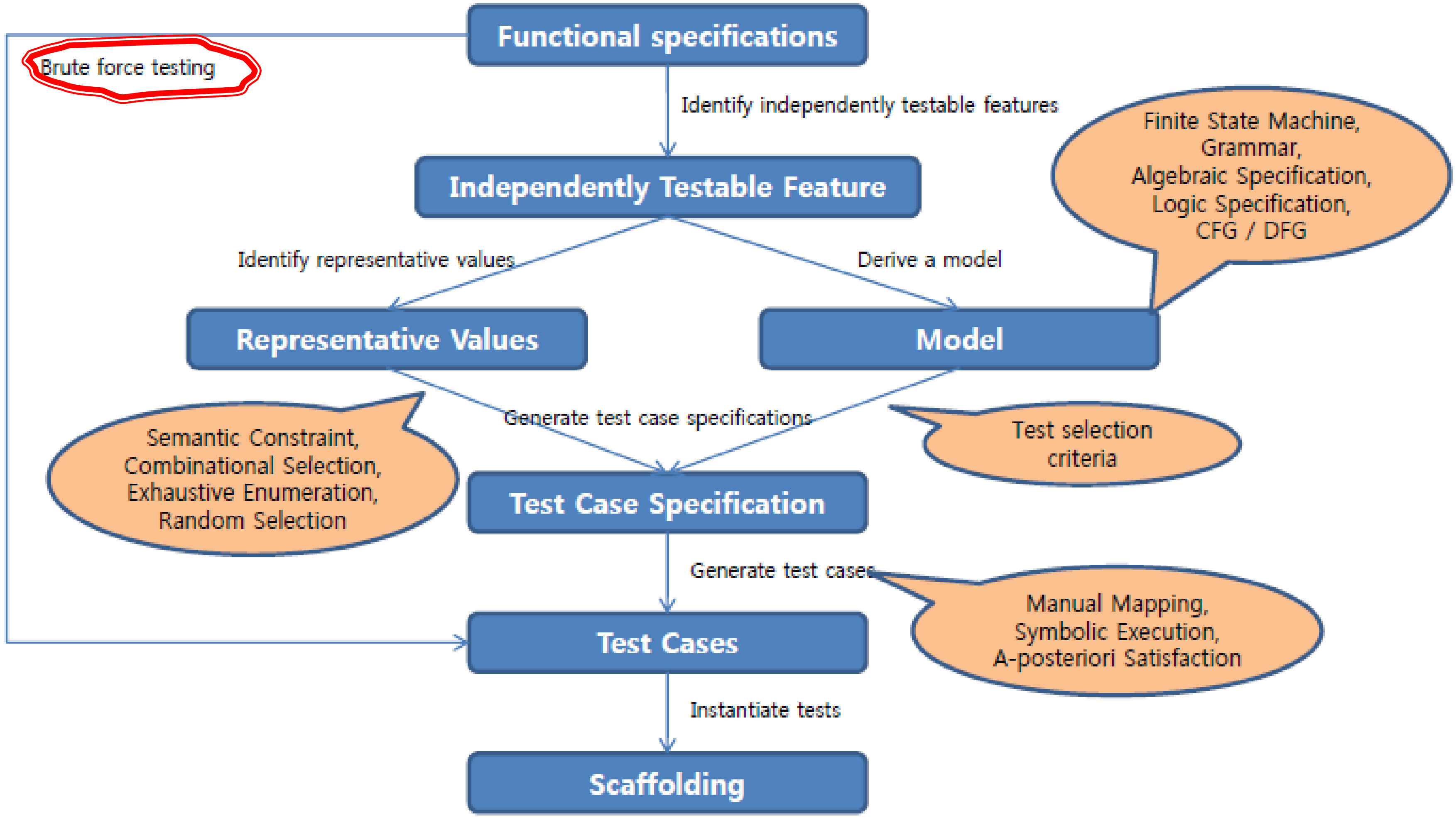
Testing Plan

- About Test Plan

Test plan identifier	Plan_1
Introduction	SDT Condition 또는 Action의 Undefined Variable
Test items	SDT
Features to be tested	SDT를 작성한 뒤에, Condition또는 Action 란에 Variable을 설정하는데, 미리 설정된 Variable이 Description Window에 없는 경우 Quick Check 기능이 에러를 출력한다.
Features not to be tested	SDT가 완성되지 않았다면 테스트하지 않는다.
Approach	Manual testing Unit Testing(a plan)

Item pass/fail criteria	SDT Condition 또는 Action의 Variable이 define되지 않은 경우 에러메시지를 내보내면 pass, 에러메시지를 내보내지 않으면 fail. SDT Condition 또는 Action의 Variable이 Define된 경우 에러메시지를 내보내면 fail 에러메시지를 내보내지 않으면 pass
Suspension criteria and resumption requirements	해당사항 없음
Test deliverables	프로그램을 실행한다. 내용을 설계를 한다. SDT를 편집한다. Quick Check를 한다.
Testing tasks	해당사항 없음
Environmental needs	System에 자바가 설치되어 있고, 테스트케이스가 준비되어 있어야 한다.
Responsibilities	Quick Check tab
Staffing and training needs	해당사항 없음
Schedule	해당사항 없음
Risks and contingencies	해당사항 없음
Approvals	해당사항 없음

Brute force testing



Functional specifications
Brute force testing
Identify independently testable features
Independently Testable Feature
Finite State Machine, Grammar, Algebraic Specification, Logic Specification, CFG / DFG
Identify representative values
Derive a model
Representative Values
Model
Generate test case specifications
Semantic Constraint, Combinational Selection, Exhaustive Enumeration, Random Selection
Test selection criteria
Test Case Specification
Generate test cases
Manual Mapping, Symbolic Execution, A-posteriori Satisfaction
Test Cases
Instantiate tests
Scaffolding

Testing Design

Test design specification identifier	Design_9.1
Features to be tested	Conditions 또는 Action name이 중복되었을때 에러 메시지 출력의 여부
Approach refinements	
Test identification	Plan_9
Feature pass/fail criteria	에러메시지를 내보내면 pass, 에러메시지를 내보내지 않으면 fail

Test design specification identifier	Design_9.2
Features to be tested	Condition 과 Action열에서 name이 중복된 것이 없을 때 에러메시지 출력의 여부
Approach refinements	
Test identification	Plan_9
Feature pass/fail criteria	에러메시지를 내보내면 fail, 에러메시지를 내보내지 않으면 pass

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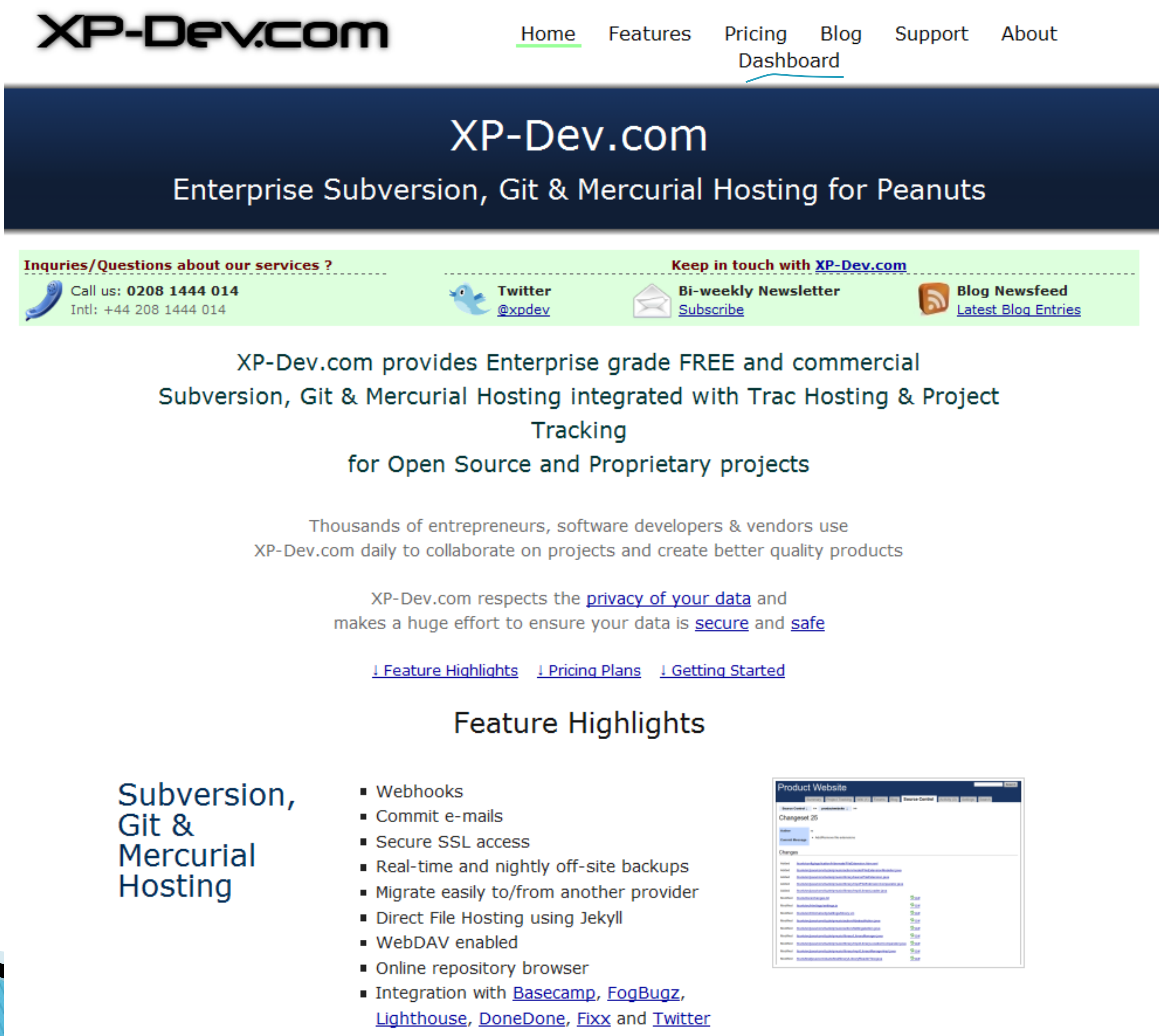

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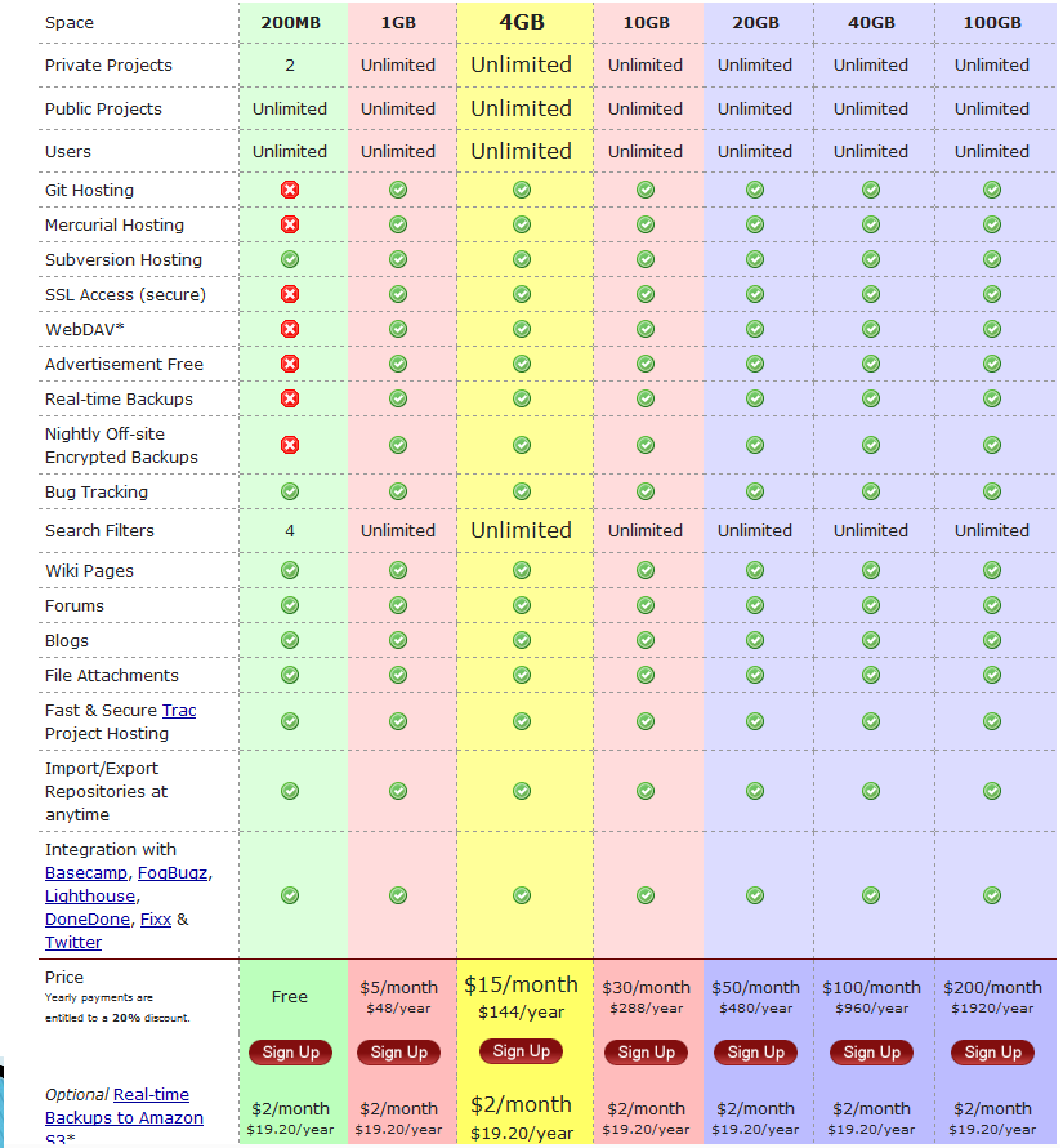
↓ Feature Highlights ↓ Pricing Plans ↓ Getting Started

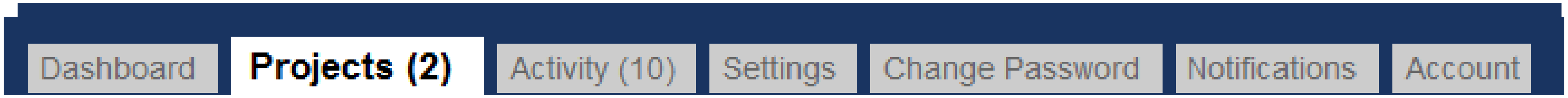
Feature Highlights

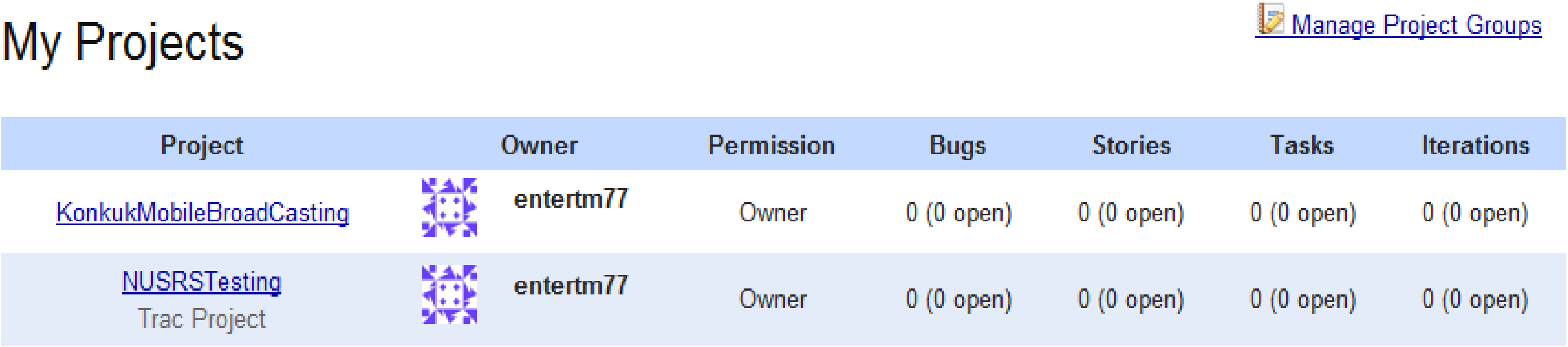
Subversion, Git & Mercurial Hosting

- Webhooks
- Commit e-mails
- Secure SSL access
- Real-time and nightly off-site backups
- Migrate easily to/from another provider
- Direct File Hosting using Jekyll
- WebDAV enabled
- Online repository browser
- Integration with Basecamp, FogBugz, Lighthouse, DoneDone, Fixx and Twitter



Space	200MB	1GB	4GB	10GB	20GB	40GB	100GB
Private Projects	2	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Public Projects	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Users	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Git Hosting	✗	✓	✓	✓	✓	✓	✓
Mercurial Hosting	✗	✓	✓	✓	✓	✓	✓
Subversion Hosting	✓	✓	✓	✓	✓	✓	✓
SSL Access (secure)	✗	✓	✓	✓	✓	✓	✓
WebDAV*	✗	✓	✓	✓	✓	✓	✓
Advertisement Free	✗	✓	✓	✓	✓	✓	✓
Real-time Backups	✗	✓	✓	✓	✓	✓	✓
Nightly Off-site Encrypted Backups	✗	✓	✓	✓	✓	✓	✓
Bug Tracking	✓	✓	✓	✓	✓	✓	✓
Search Filters	4	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Wiki Pages	✓	✓	✓	✓	✓	✓	✓
Forums	✓	✓	✓	✓	✓	✓	✓
Blogs	✓	✓	✓	✓	✓	✓	✓
File Attachments	✓	✓	✓	✓	✓	✓	✓
Fast & Secure Trac Project Hosting	✓	✓	✓	✓	✓	✓	✓
Import/Export Repositories at anytime	✓	✓	✓	✓	✓	✓	✓
Integration with Basecamp, FogBugz, Lighthouse, DoneDone, Fixx & Twitter	✓	✓	✓	✓	✓	✓	✓
Price Yearly payments are entitled to a **20%** discount.	Free Sign Up	$5/month $48/year Sign Up	$15/month $144/year Sign Up	$30/month $288/year Sign Up	$50/month $480/year Sign Up	$100/month $960/year Sign Up	$200/month $1920/year Sign Up
Optional Real-time Backups to Amazon S3*	$2/month $19.20/year	$2/month $19.20/year	$2/month $19.20/year	$2/month $19.20/year	$2/month $19.20/year	$2/month $19.20/year	$2/month $19.20/year

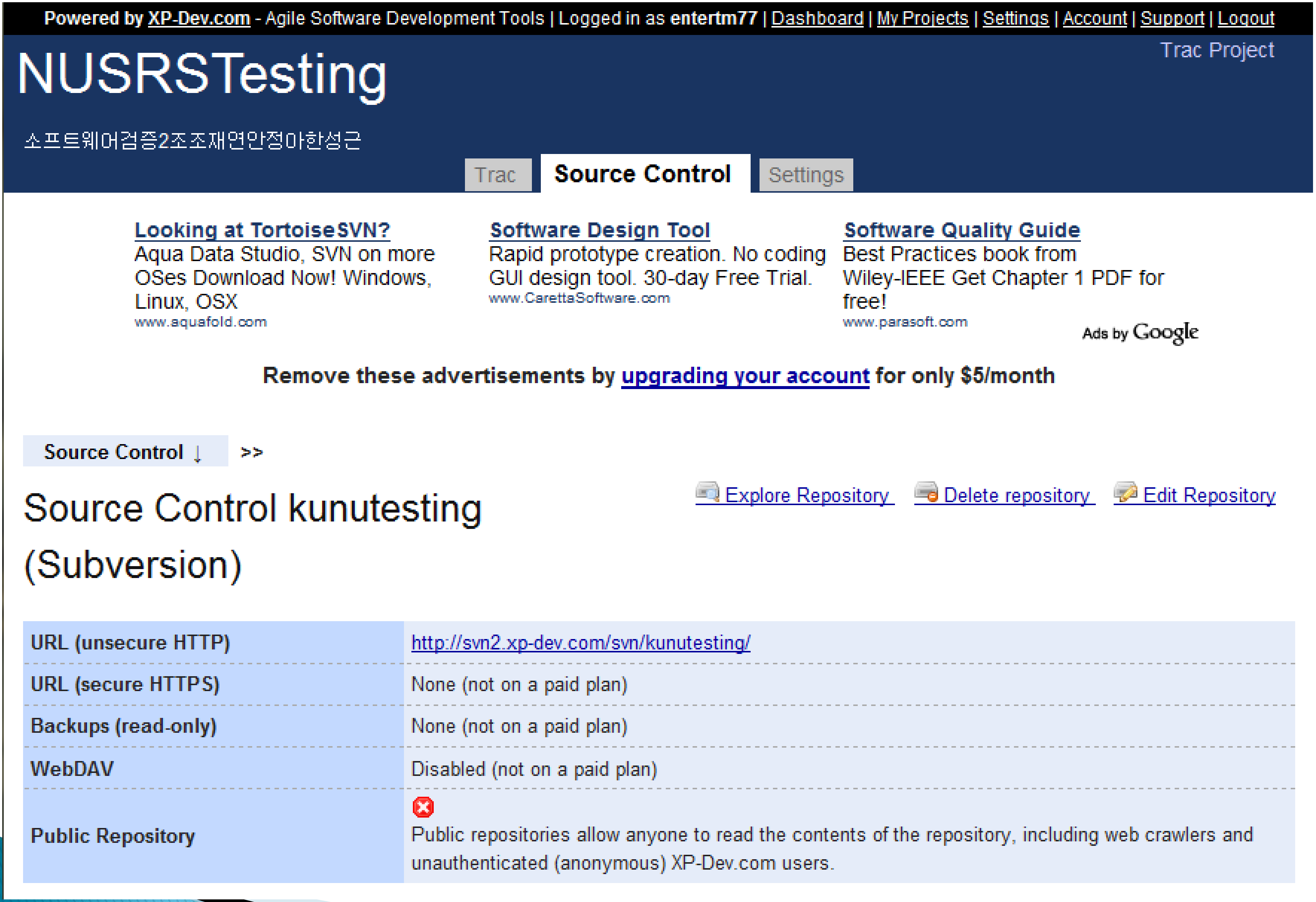

Dashboard
Projects (2)
Activity (10)
Settings
Change Password
Notifications
Account



My Projects

Manage Project Groups

Project	Owner	Permission	Bugs	Stories	Tasks	Iterations
KonkukMobileBroadCasting	entertm77	Owner	0 (0 open)	0 (0 open)	0 (0 open)	0 (0 open)
NUSRSTesting Trac Project	entertm77	Owner	0 (0 open)	0 (0 open)	0 (0 open)	0 (0 open)



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Trac Project

NUSRSTesting

소프트웨어검증2조조재연안정아한성근

Trac
Source Control
Settings

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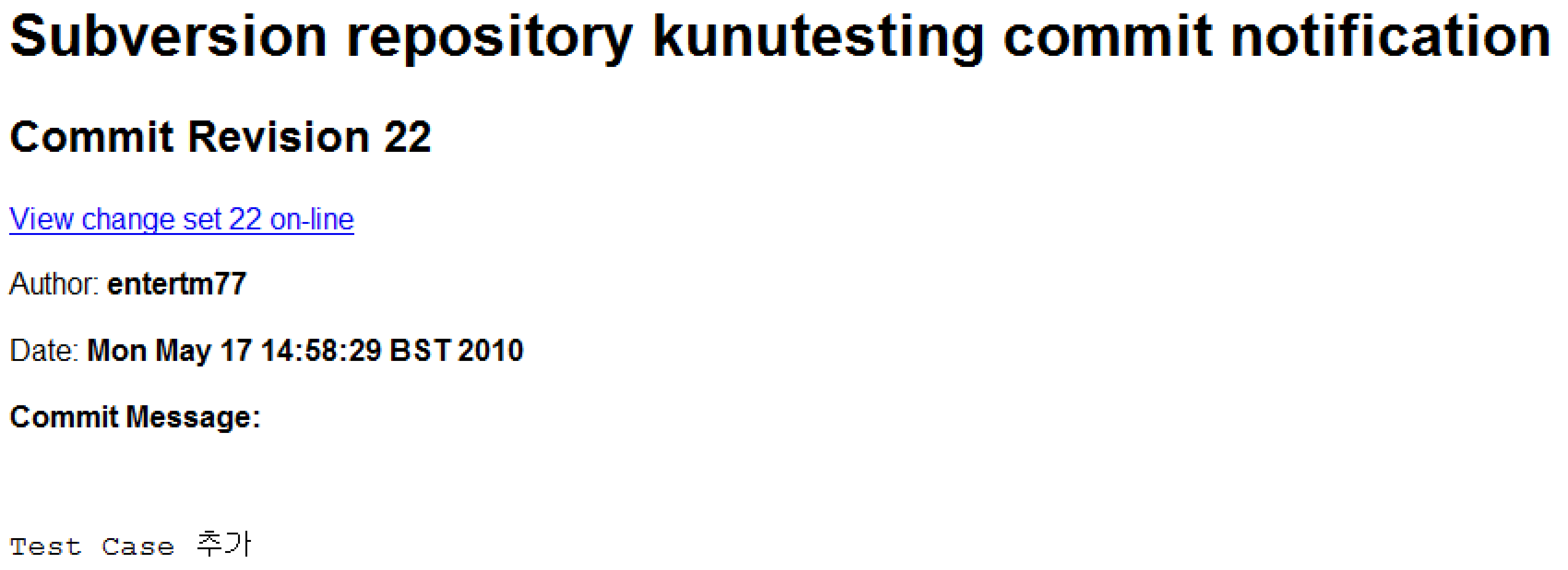
Source Control ↓
>>
Explore Repository
Delete repository
Edit Repository

Source Control kunutesting (Subversion)

URL (unsecure HTTP)	http://svn2.xp-dev.com/svn/kunutesting/
URL (secure HTTPS)	None (not on a paid plan)
Backups (read-only)	None (not on a paid plan)
WebDAV	Disabled (not on a paid plan)
Public Repository	☒ Public repositories allow anyone to read the contents of the repository, including web crawlers and unauthenticated (anonymous) XP-Dev.com users.

Commit notification



Subversion repository kunutesting commit notification

Commit Revision 22

[View change set 22 on-line]()

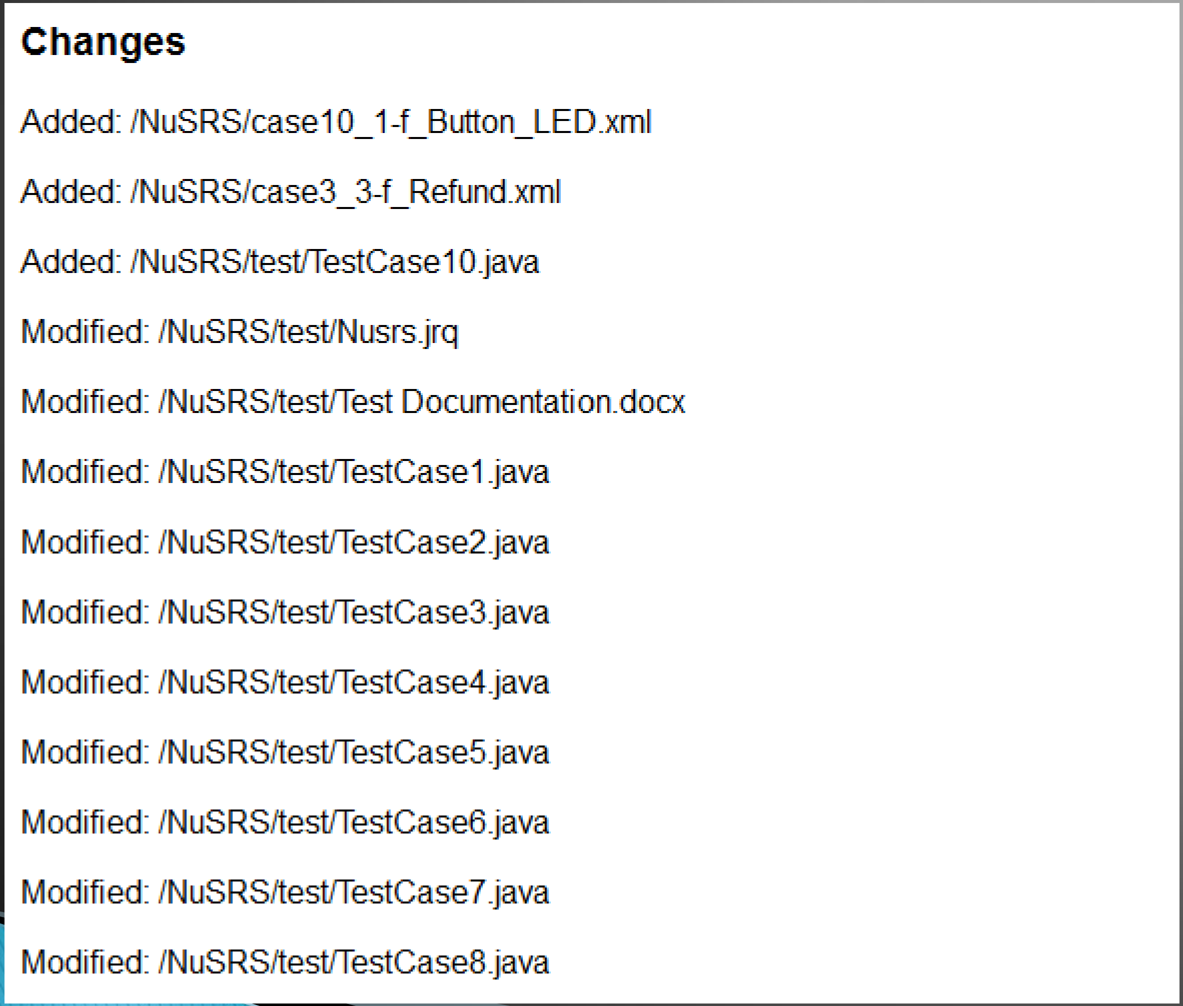
Author: **entertm77**

Date: **Mon May 17 14:58:29 BST 2010**

Commit Message:

```
Test Case 추가
```

E-mail notification



Changes

Added: /NuSRS/case10_1-f_Button_LED.xml

Added: /NuSRS/case3_3-f_Refund.xml

Added: /NuSRS/test/TestCase10.java

Modified: /NuSRS/test/Nusrs.jrq

Modified: /NuSRS/test/Test Documentation.docx

Modified: /NuSRS/test/TestCase1.java

Modified: /NuSRS/test/TestCase2.java

Modified: /NuSRS/test/TestCase3.java

Modified: /NuSRS/test/TestCase4.java

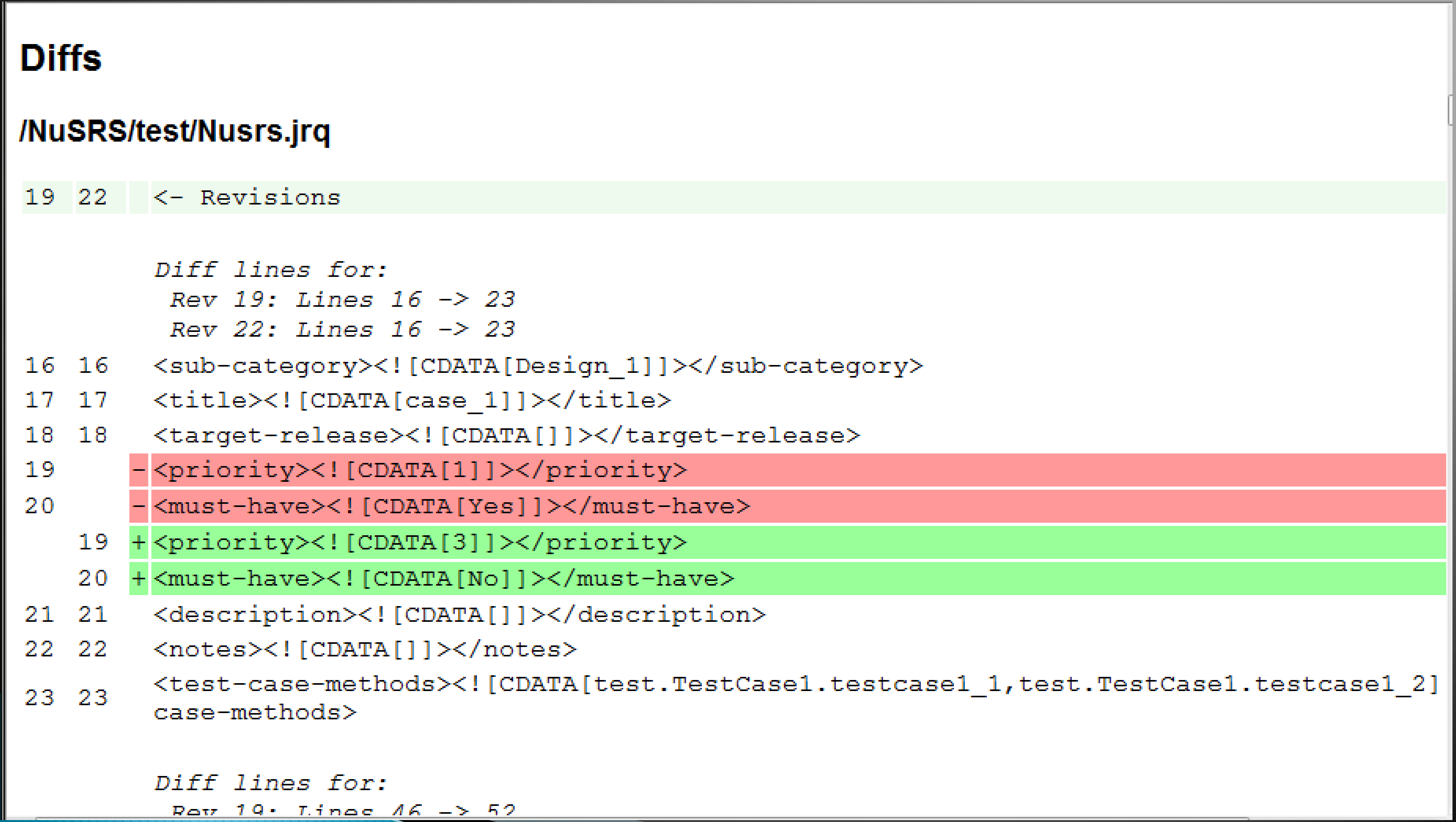
Modified: /NuSRS/test/TestCase5.java

Modified: /NuSRS/test/TestCase6.java

Modified: /NuSRS/test/TestCase7.java

Modified: /NuSRS/test/TestCase8.java

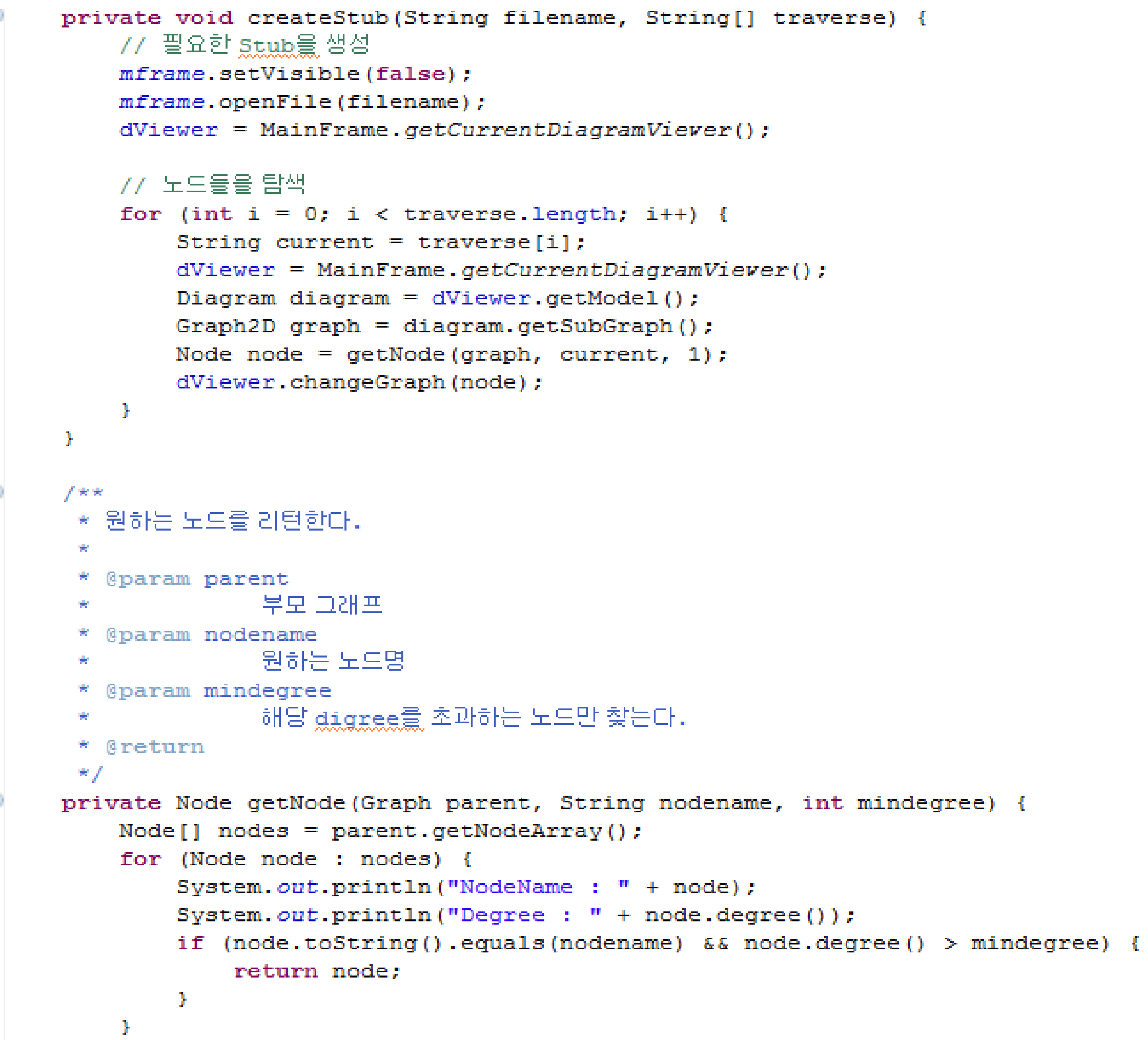
E-mail notification



Diffs

/NuSRS/test/Nusrs.jrq

```
19 22    <- Revisions

         Diff lines for:
          Rev 19: Lines 16 -> 23
          Rev 22: Lines 16 -> 23
16 16    <sub-category><![CDATA[Design_1]]></sub-category>
17 17    <title><![CDATA[case_1]]></title>
18 18    <target-release><![CDATA[]]></target-release>
19      -<priority><![CDATA[1]]></priority>
20      -<must-have><![CDATA[Yes]]></must-have>
   19   +<priority><![CDATA[3]]></priority>
   20   +<must-have><![CDATA[No]]></must-have>
21 21    <description><![CDATA[]]></description>
22 22    <notes><![CDATA[]]></notes>
23 23    <test-case-methods><![CDATA[test.TestCase1.testcase1_1,test.TestCase1.testcase1_2]
         case-methods>

         Diff lines for:
          Rev 19: Lines 46 -> 52
```

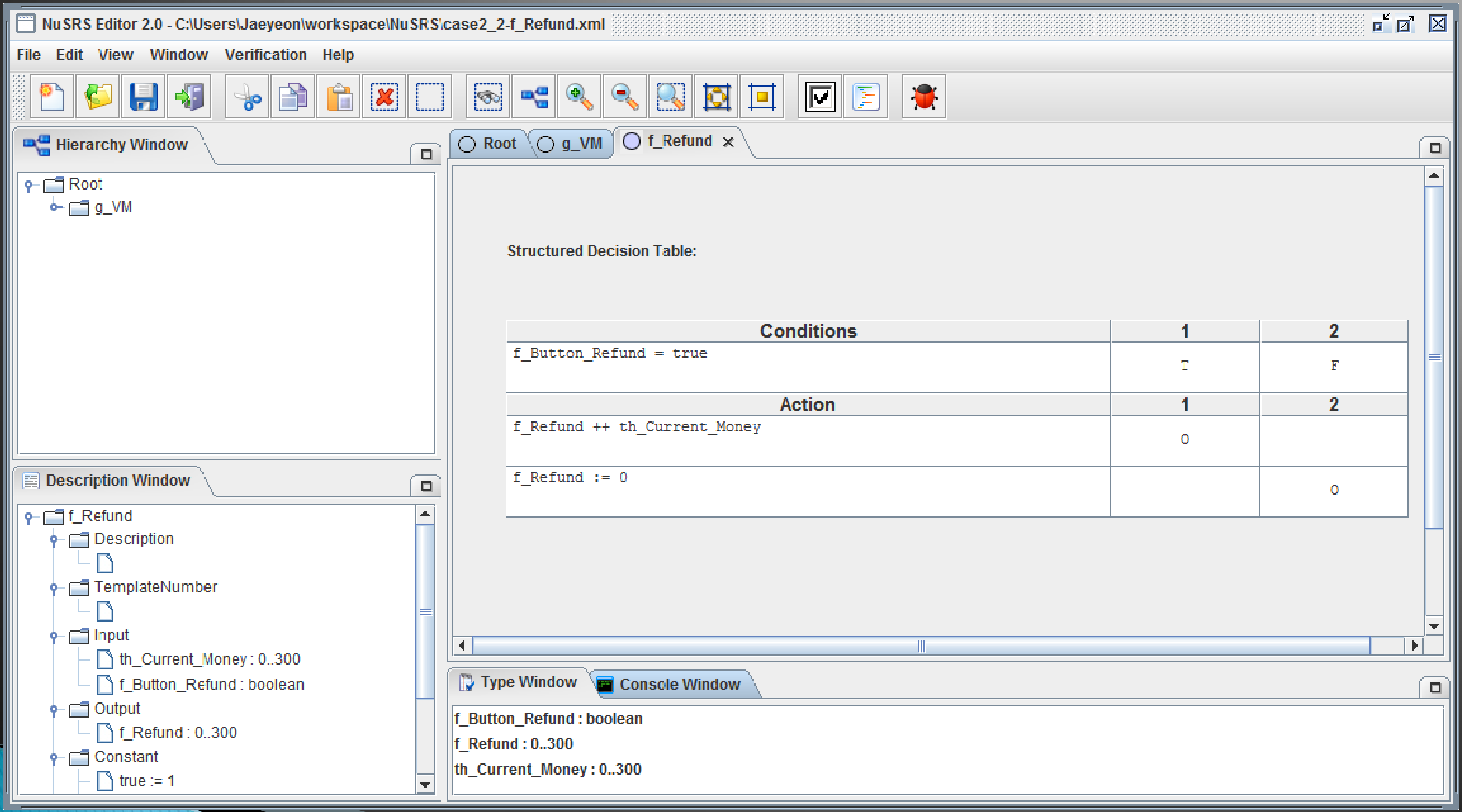


```java
private void createStub(String filename, String[] traverse) {
    // 필요한 Stub을 생성
    mframe.setVisible(false);
    mframe.openFile(filename);
    dViewer = MainFrame.getCurrentDiagramViewer();

    // 노드들을 탐색
    for (int i = 0; i < traverse.length; i++) {
        String current = traverse[i];
        dViewer = MainFrame.getCurrentDiagramViewer();
        Diagram diagram = dViewer.getModel();
        Graph2D graph = diagram.getSubGraph();
        Node node = getNode(graph, current, 1);
        dViewer.changeGraph(node);
    }
}

/**
 * 원하는 노드를 리턴한다.
 *
 * @param parent
 *              부모 그래프
 * @param nodename
 *              원하는 노드명
 * @param mindegree
 *              해당 digree를 초과하는 노드만 찾는다.
 * @return
 */
private Node getNode(Graph parent, String nodename, int mindegree) {
    Node[] nodes = parent.getNodeArray();
    for (Node node : nodes) {
        System.out.println("NodeName : " + node);
        System.out.println("Degree : " + node.degree());
        if (node.toString().equals(nodename) && node.degree() > mindegree) {
            return node;
        }
    }
```

Test case Table 작성

Test case specification identifier	Case2.2
Test items	Plan_2, Design_2.1
Input specifications	Open Filename : case2_2-f_Refund.xml SDT name : f_Refund SDT의 Action의 연산자가 eg1Constants.java 의 String[] tokenImage안의 토크나이저내의 값과 일치하지 않을 경우를 위해서 Action ROW1에서 :=대신 ++를 넣음
Output specifications	Pass : Error At f_Refund, Action Row : 0 Col : 0 – Encountered "+" at line 1, column 11. Fail : No Error Exists 을 출력
Environmental needs	Eclipse및 NuSRS프로그램이 필요 그리고 Test File이 필요하다.
Special procedural requirements	f_Refund SDT를 만든뒤, 아이콘을 더블클릭하여 Table을 오픈한다.
Intercase dependencies	

Test case 작성


NuSRS Editor 2.0 - C:\Users\Jaeyeon\workspace\NuSRS\case2_2-f_Refund.xml
File
Edit
View
Window
Verification
Help
Hierarchy Window
Root
g_VM
Description Window
Root
g_VM
f_Refund
Type Window
Console Window

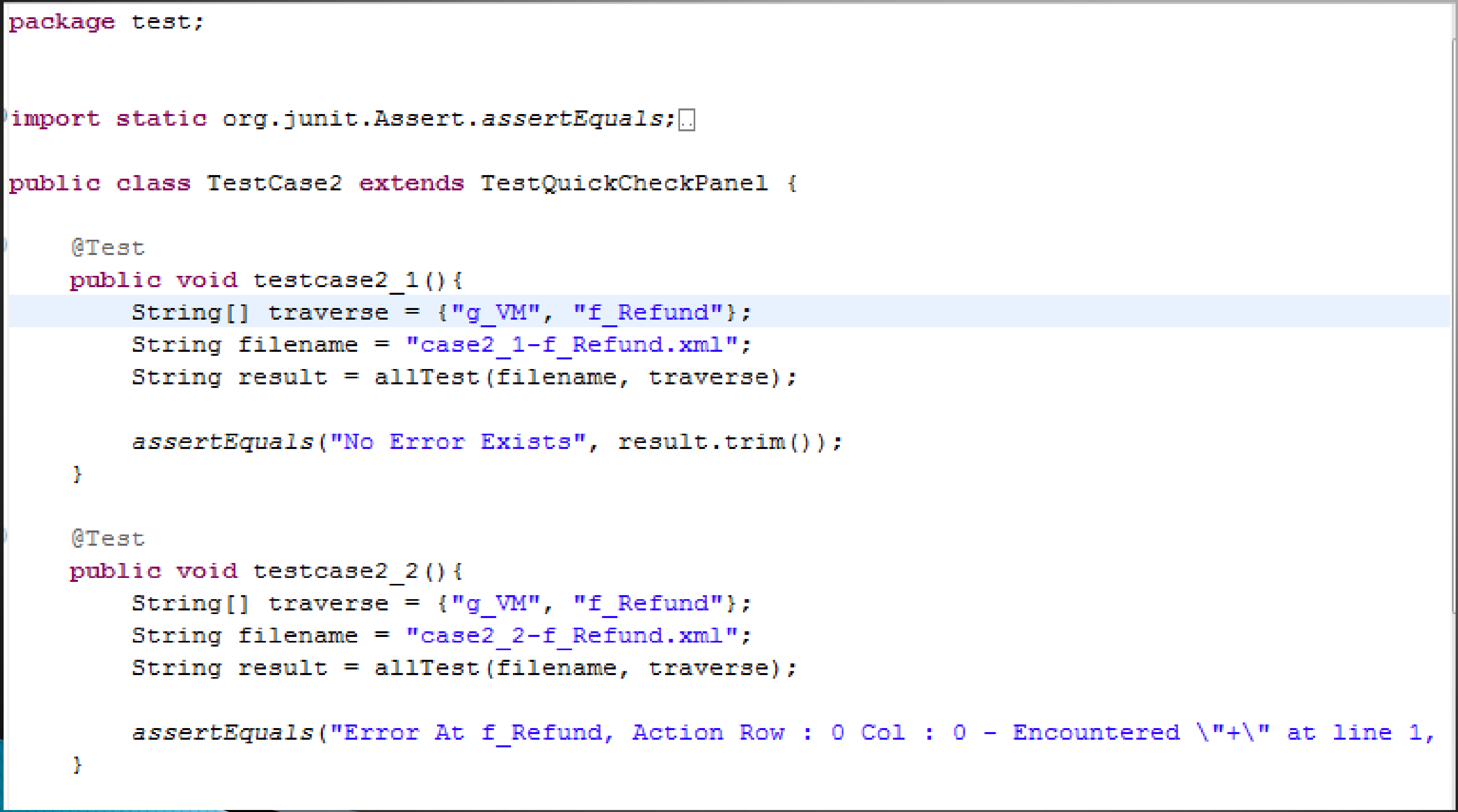
- f_Refund
  - Description
  - TemplateNumber
  - Input
    - th_Current_Money : 0..300
    - f_Button_Refund : boolean
  - Output
    - f_Refund : 0..300
  - Constant
    - true := 1

Structured Decision Table:

Conditions	1	2
f_Button_Refund = true	T	F
Action	**1**	**2**
f_Refund ++ th_Current_Money	0	
f_Refund := 0		0

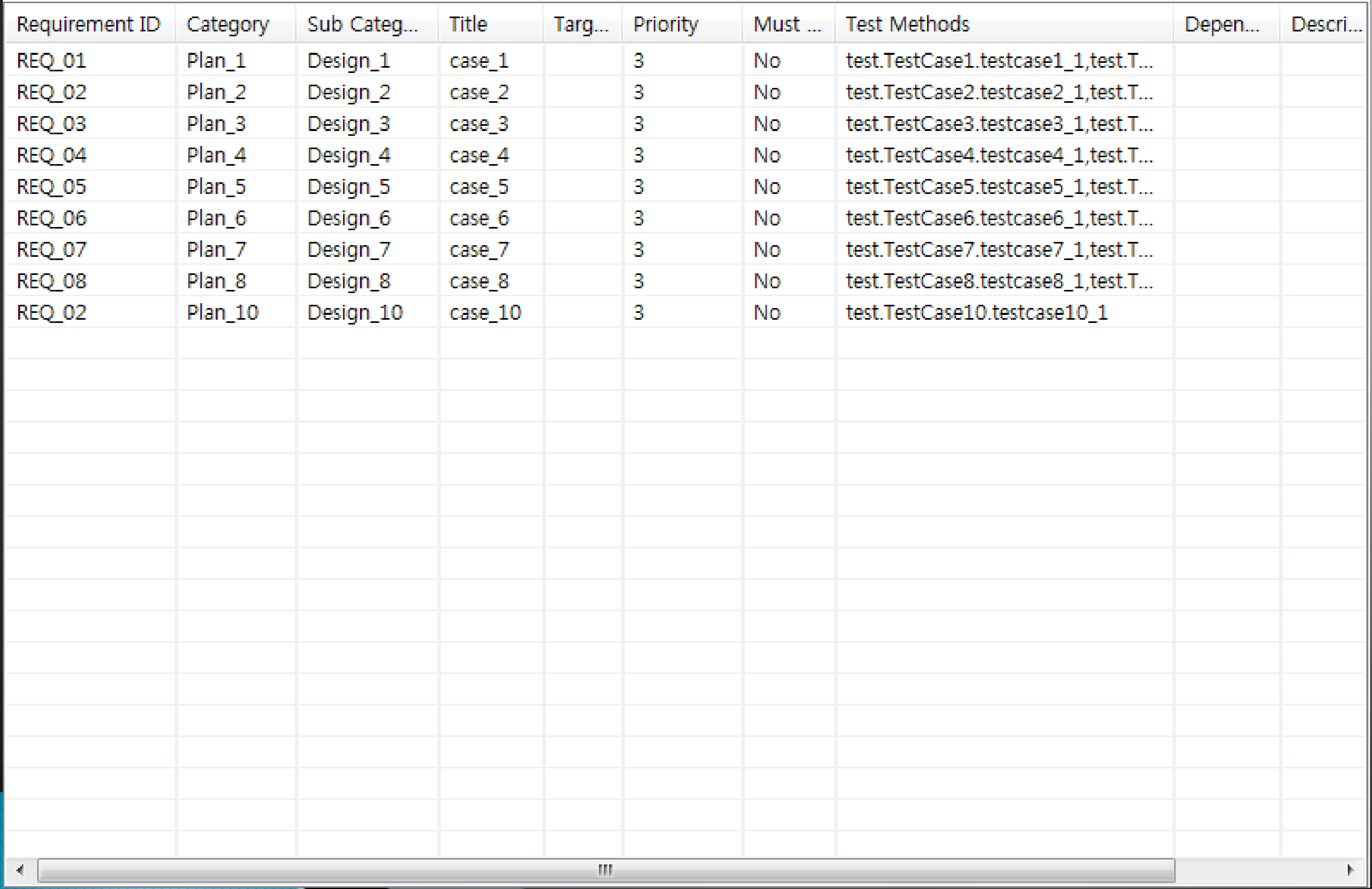
f_Button_Refund : boolean
f_Refund : 0..300
th_Current_Money : 0..300

Test Case Code 작성



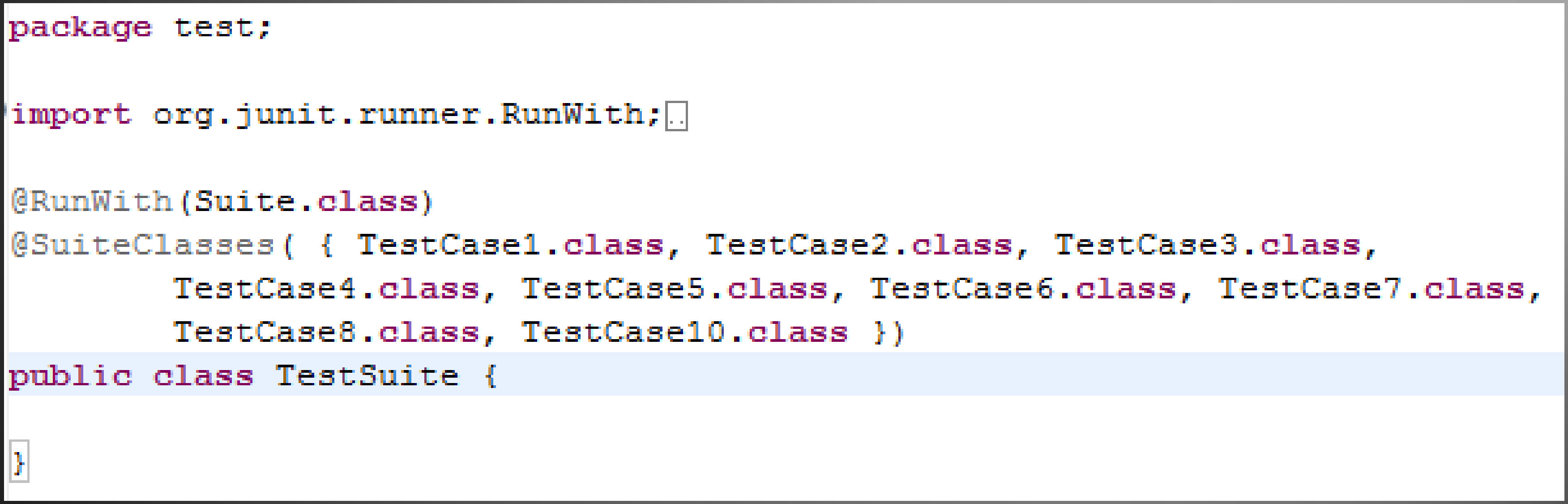
```java
package test;


import static org.junit.Assert.assertEquals;

public class TestCase2 extends TestQuickCheckPanel {

    @Test
    public void testcase2_1(){
        String[] traverse = {"g_VM", "f_Refund"};
        String filename = "case2_1-f_Refund.xml";
        String result = allTest(filename, traverse);

        assertEquals("No Error Exists", result.trim());
    }

    @Test
    public void testcase2_2(){
        String[] traverse = {"g_VM", "f_Refund"};
        String filename = "case2_2-f_Refund.xml";
        String result = allTest(filename, traverse);

        assertEquals("Error At f_Refund, Action Row : 0 Col : 0 - Encountered \"+\" at line 1,
    }
```

Jfeature 작성



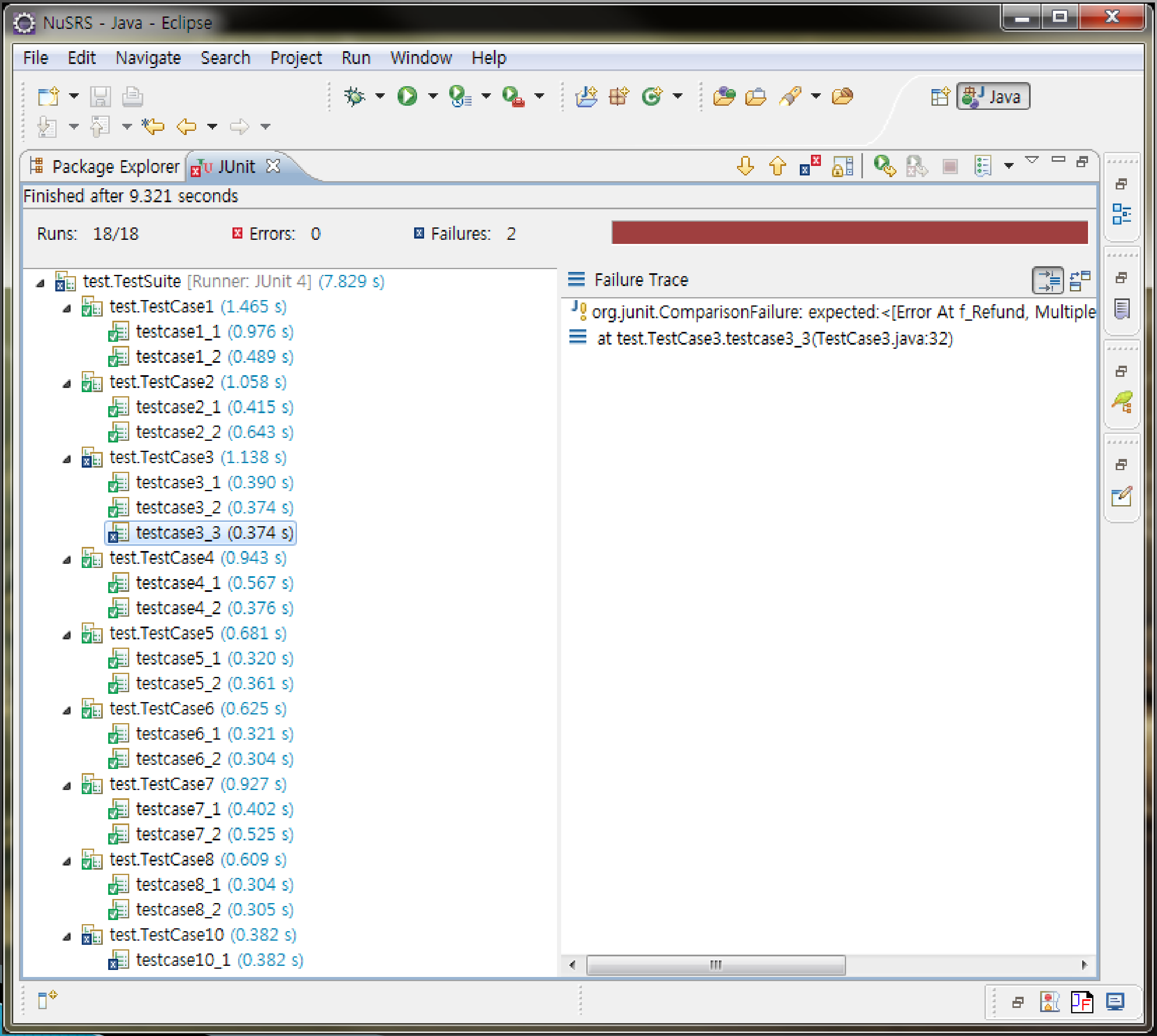
Requirement ID	Category	Sub Categ...	Title	Targ...	Priority	Must ...	Test Methods	Depen...	Descri...
REQ_01	Plan_1	Design_1	case_1		3	No	test.TestCase1.testcase1_1,test.T...		
REQ_02	Plan_2	Design_2	case_2		3	No	test.TestCase2.testcase2_1,test.T...		
REQ_03	Plan_3	Design_3	case_3		3	No	test.TestCase3.testcase3_1,test.T...		
REQ_04	Plan_4	Design_4	case_4		3	No	test.TestCase4.testcase4_1,test.T...		
REQ_05	Plan_5	Design_5	case_5		3	No	test.TestCase5.testcase5_1,test.T...		
REQ_06	Plan_6	Design_6	case_6		3	No	test.TestCase6.testcase6_1,test.T...		
REQ_07	Plan_7	Design_7	case_7		3	No	test.TestCase7.testcase7_1,test.T...		
REQ_08	Plan_8	Design_8	case_8		3	No	test.TestCase8.testcase8_1,test.T...		
REQ_02	Plan_10	Design_10	case_10		3	No	test.TestCase10.testcase10_1		

Test Suite 작성



```
package test;

import org.junit.runner.RunWith;

@RunWith(Suite.class)
@SuiteClasses( { TestCase1.class, TestCase2.class, TestCase3.class,
        TestCase4.class, TestCase5.class, TestCase6.class, TestCase7.class,
        TestCase8.class, TestCase10.class })
public class TestSuite {

}
```

테스트결과

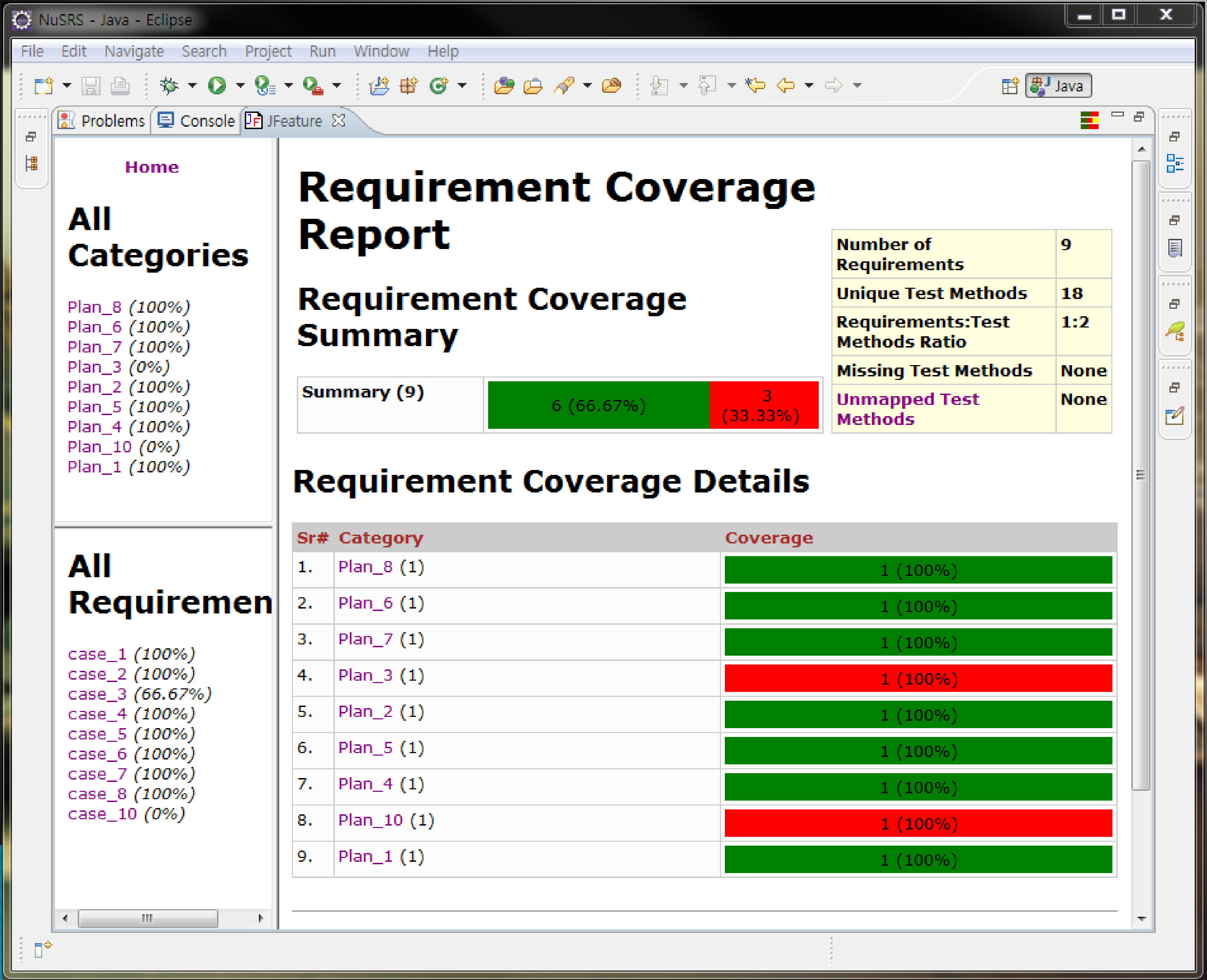

NuSRS - Java - Eclipse
File
Edit
Navigate
Search
Project
Run
Window
Help
Java
Package Explorer
JUnit
Failure Trace

Finished after 9.321 seconds

Runs: 18/18 ☒ Errors: 0 ☒ Failures: 2

```
test.TestSuite [Runner: JUnit 4] (7.829 s)
    test.TestCase1 (1.465 s)
        testcase1_1 (0.976 s)
        testcase1_2 (0.489 s)
    test.TestCase2 (1.058 s)
        testcase2_1 (0.415 s)
        testcase2_2 (0.643 s)
    test.TestCase3 (1.138 s)
        testcase3_1 (0.390 s)
        testcase3_2 (0.374 s)
        testcase3_3 (0.374 s)
    test.TestCase4 (0.943 s)
        testcase4_1 (0.567 s)
        testcase4_2 (0.376 s)
    test.TestCase5 (0.681 s)
        testcase5_1 (0.320 s)
        testcase5_2 (0.361 s)
    test.TestCase6 (0.625 s)
        testcase6_1 (0.321 s)
        testcase6_2 (0.304 s)
    test.TestCase7 (0.927 s)
        testcase7_1 (0.402 s)
        testcase7_2 (0.525 s)
    test.TestCase8 (0.609 s)
        testcase8_1 (0.304 s)
        testcase8_2 (0.305 s)
    test.TestCase10 (0.382 s)
        testcase10_1 (0.382 s)
```

```
org.junit.ComparisonFailure: expected:<[Error At f_Refund, Multiple
at test.TestCase3.testcase3_3(TestCase3.java:32)
```


NuSRS - Java - Eclipse
File
Edit
Navigate
Search
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Run
Window
Help
Java
Problems
Console
JFeature

Home

All Categories

- Plan_8 *(100%)*
- Plan_6 *(100%)*
- Plan_7 *(100%)*
- Plan_3 *(0%)*
- Plan_2 *(100%)*
- Plan_5 *(100%)*
- Plan_4 *(100%)*
- Plan_10 *(0%)*
- Plan_1 *(100%)*

All Requiremen

- case_1 *(100%)*
- case_2 *(100%)*
- case_3 *(66.67%)*
- case_4 *(100%)*
- case_5 *(100%)*
- case_6 *(100%)*
- case_7 *(100%)*
- case_8 *(100%)*
- case_10 *(0%)*

Requirement Coverage Report

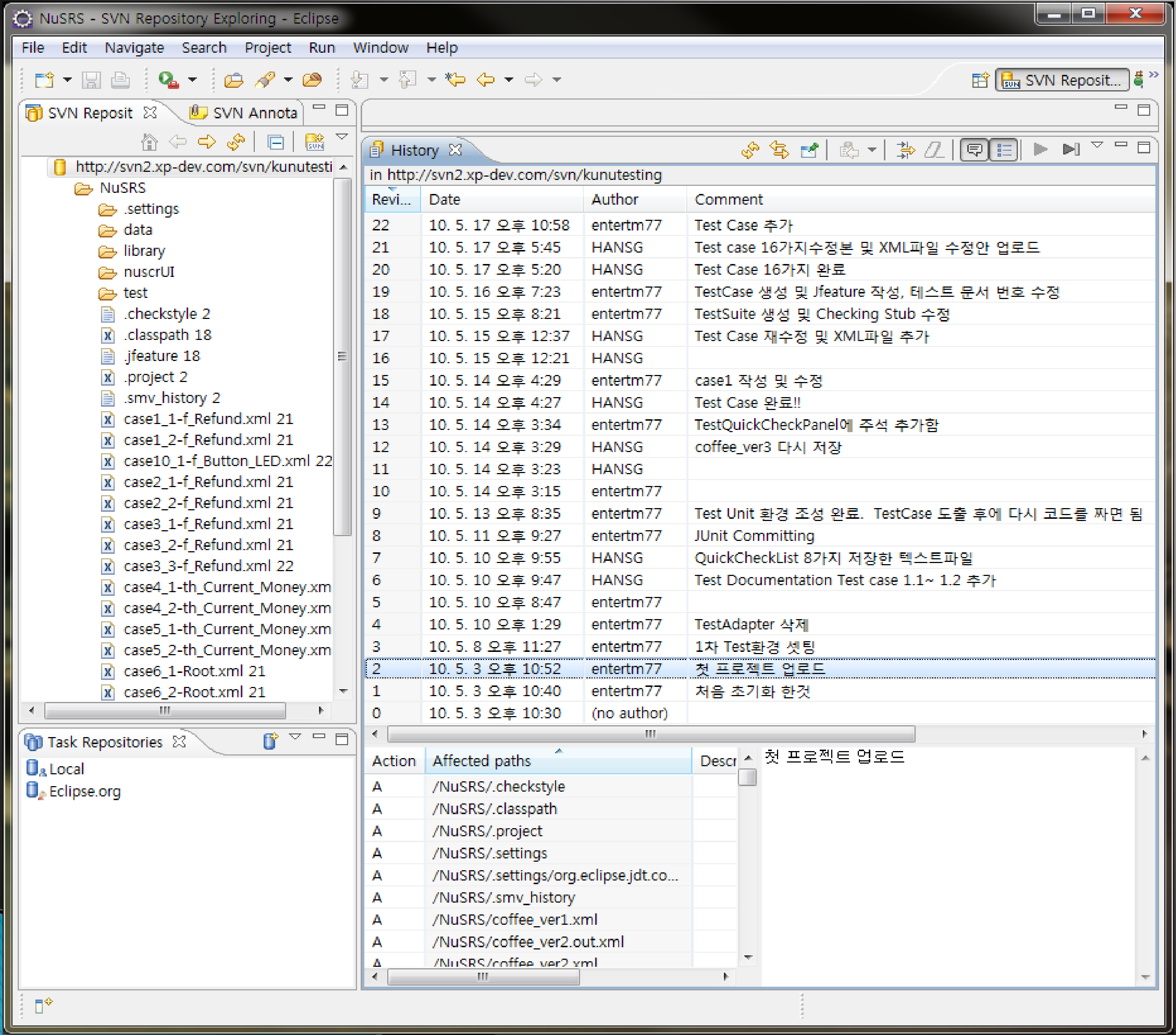
Requirement Coverage Summary

Summary (9)	🟩 6 (66.67%)	🟥 3 (33.33%)

Number of Requirements	**9**
Unique Test Methods	**18**
Requirements:Test Methods Ratio	**1:2**
Missing Test Methods	**None**
Unmapped Test Methods	**None**

Requirement Coverage Details

Sr#	Category	Coverage
1.	Plan_8 (1)	🟩 1 (100%)
2.	Plan_6 (1)	🟩 1 (100%)
3.	Plan_7 (1)	🟩 1 (100%)
4.	Plan_3 (1)	🟥 1 (100%)
5.	Plan_2 (1)	🟩 1 (100%)
6.	Plan_5 (1)	🟩 1 (100%)
7.	Plan_4 (1)	🟩 1 (100%)
8.	Plan_10 (1)	🟥 1 (100%)
9.	Plan_1 (1)	🟩 1 (100%)



http://svn2.xp-dev.com/svn/kunutesti

- NuSRS
  - .settings
  - data
  - library
  - nuscrUI
  - test
  - .checkstyle 2
  - .classpath 18
  - .jfeature 18
  - .project 2
  - .smv_history 2
  - case1_1-f_Refund.xml 21
  - case1_2-f_Refund.xml 21
  - case10_1-f_Button_LED.xml 22
  - case2_1-f_Refund.xml 21
  - case2_2-f_Refund.xml 21
  - case3_1-f_Refund.xml 21
  - case3_2-f_Refund.xml 21
  - case3_3-f_Refund.xml 22
  - case4_1-th_Current_Money.xm
  - case4_2-th_Current_Money.xm
  - case5_1-th_Current_Money.xm
  - case5_2-th_Current_Money.xm
  - case6_1-Root.xml 21
  - case6_2-Root.xml 21

in http://svn2.xp-dev.com/svn/kunutesting

Revi...	Date	Author	Comment
22	10. 5. 17 오후 10:58	entertm77	Test Case 추가
21	10. 5. 17 오후 5:45	HANSG	Test case 16가지수정본 및 XML파일 수정안 업로드
20	10. 5. 17 오후 5:20	HANSG	Test Case 16가지 완료
19	10. 5. 16 오후 7:23	entertm77	TestCase 생성 및 Jfeature 작성, 테스트 문서 번호 수정
18	10. 5. 15 오후 8:21	entertm77	TestSuite 생성 및 Checking Stub 수정
17	10. 5. 15 오후 12:37	HANSG	Test Case 재수정 및 XML파일 추가
16	10. 5. 15 오후 12:21	HANSG	
15	10. 5. 14 오후 4:29	entertm77	case1 작성 및 수정
14	10. 5. 14 오후 4:27	HANSG	Test Case 완료!!
13	10. 5. 14 오후 3:34	entertm77	TestQuickCheckPanel에 주석 추가함
12	10. 5. 14 오후 3:29	HANSG	coffee_ver3 다시 저장
11	10. 5. 14 오후 3:23	HANSG	
10	10. 5. 14 오후 3:15	entertm77	
9	10. 5. 13 오후 8:35	entertm77	Test Unit 환경 조성 완료. TestCase 도출 후에 다시 코드를 짜면 됨
8	10. 5. 11 오후 9:27	entertm77	JUnit Committing
7	10. 5. 10 오후 9:55	HANSG	QuickCheckList 8가지 저장한 텍스트파일
6	10. 5. 10 오후 9:47	HANSG	Test Documentation Test case 1.1~ 1.2 추가
5	10. 5. 10 오후 8:47	entertm77	
4	10. 5. 10 오후 1:29	entertm77	TestAdapter 삭제
3	10. 5. 8 오후 11:27	entertm77	1차 Test환경 셋팅
2	10. 5. 3 오후 10:52	entertm77	첫 프로젝트 업로드
1	10. 5. 3 오후 10:40	entertm77	처음 초기화 한것
0	10. 5. 3 오후 10:30	(no author)	

Action	Affected paths	Descr
A	/NuSRS/.checkstyle	
A	/NuSRS/.classpath	
A	/NuSRS/.project	
A	/NuSRS/.settings	
A	/NuSRS/.settings/org.eclipse.jdt.co...	
A	/NuSRS/.smv_history	
A	/NuSRS/coffee_ver1.xml	
A	/NuSRS/coffee_ver2.out.xml	
A	/NuSRS/coffee_ver2.xml	

첫 프로젝트 업로드

앞으로 해야할 것

- Category-Based Testing으로 Test Case 추가 도출
- Structural Testing을 하여 Coverage 측정
- Test결과를 쓸 Test Log 작성
- Index 수정