JFeature & OSRMT

Requirement Engineering &
RETools Execution Examples

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    2. Reason of Using RE Tools
    3. RE Process

2. JFeature
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    3. Usage

3. OSRMT
    1. Introduce
    2. Installation
    3. Usage

Requirement Engineering

1. Requirements?
2. Requirement Engineering
3. RE Process

Requirements??

What Should be Requirement?

Range form a high-level abstract statement of service or system constraint to detailed mathematical functional specification.

- 추상화된 표현부터 수학식 까지 모든 표현들이 요구 사항이 된다.

Requirement Completeness & Consistency

Ambiguous Requirement may be interpreted in different ways.

- Complete : 모든 요구 조건들이 문서화 되어야 한다.
- Consistent : 서로 상충되는 요구 조건들이 존재해서는 안 된다.

⇨ 체계화, 구조화된 RE Tool의 필요성!!!!

Requirements?? (Cont.)

User Requirement

Statements in natural language, diagrams of the services the system provides and its operational constraints.

- 일상적인 언어 혹은 다이어그램으로 작성된다.
- 시스템이 제공하는 기능들을 기술하게 된다.
- 보통 고객이 작성하게 된다. 정의되는 성격을 가진다.

System Requirement

Structured document setting out detailed descriptions of the system`s functions, services and operational constraints.

- 구조적인 문서로 작성된다.
- 시스템의 기능, 서비스와 제약사항을 기술하게 된다.
- 보통 고객과 개발자가 상의하여 작성한다. 정의되는 성격을 가진다.

Requirements?? (Cont.)

Functional Requirement

Statements of services which the system should provide

- 특정 input에 대해 system의 작동에 대한 설명
- 특정 상황에 대한 system의 작동에 대한 설명

Non-functional Requirement

Constraints on the services or functions offered by the system

- 시간적 제약사항(개발 기간)등도 포함된다.
- 개발 과정에서의 제약사항도 포함된다.
- Product Requirement : 실행 속도, 신뢰성
- Organization Requirement : 표준, 구현 환경
- External Requirement : 인적 제약조건

⇨ NFR이 충족 되어야 System이 의미를 가진다!

Reason of Using RE Tools

Cons. Of Natural Language Specification

- Ambiguity
  - ✓ 작성자와 개발자 간에 동일한 해석이 이루어 져야 함
  - ✓ 일반적 언어는 여러 의미로 해석 될 가능성이 항상 존재
- Over-flexibility
  - ✓ 같은 내용을 여러 방식으로 Specification 할 수 있음
- Lack of modularisation
  - ✓ 구조화된 시스템과는 달리 언어는 구조화 되어 있지 않음

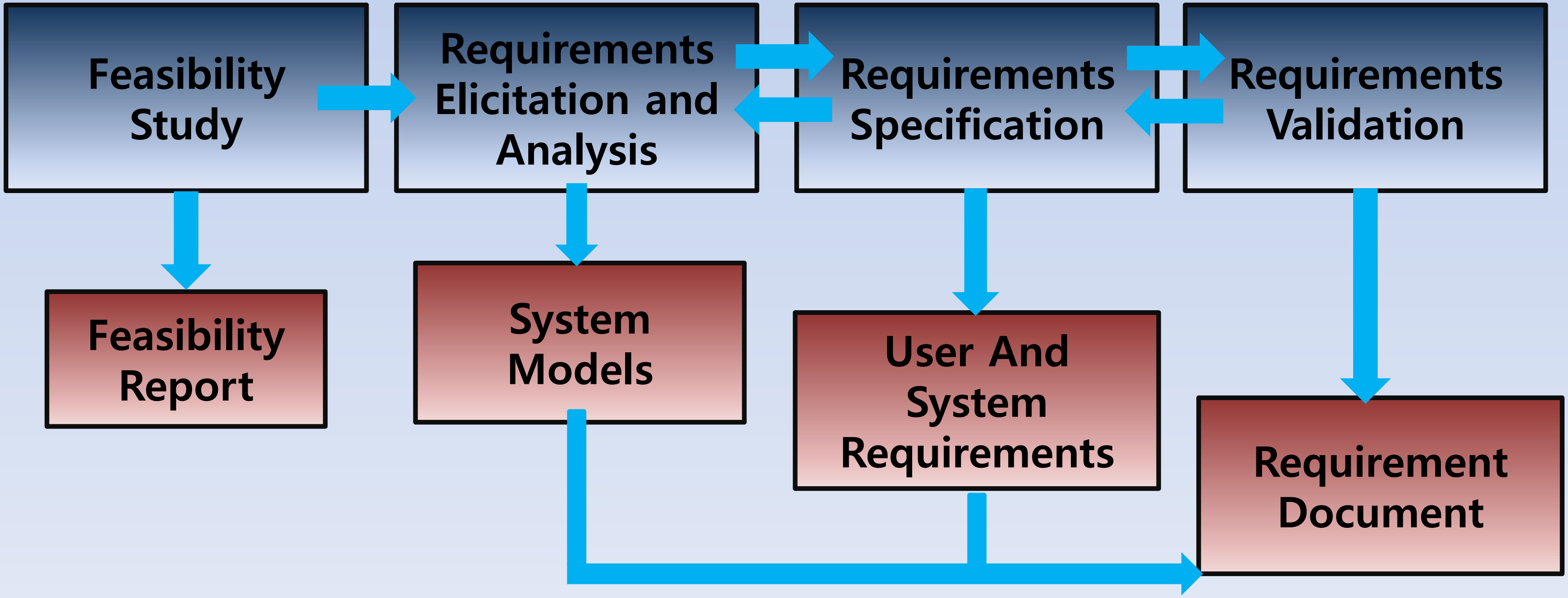
➡ RE Tool을 활용하여 Specification을 구체화!!

RE Process

RE Process

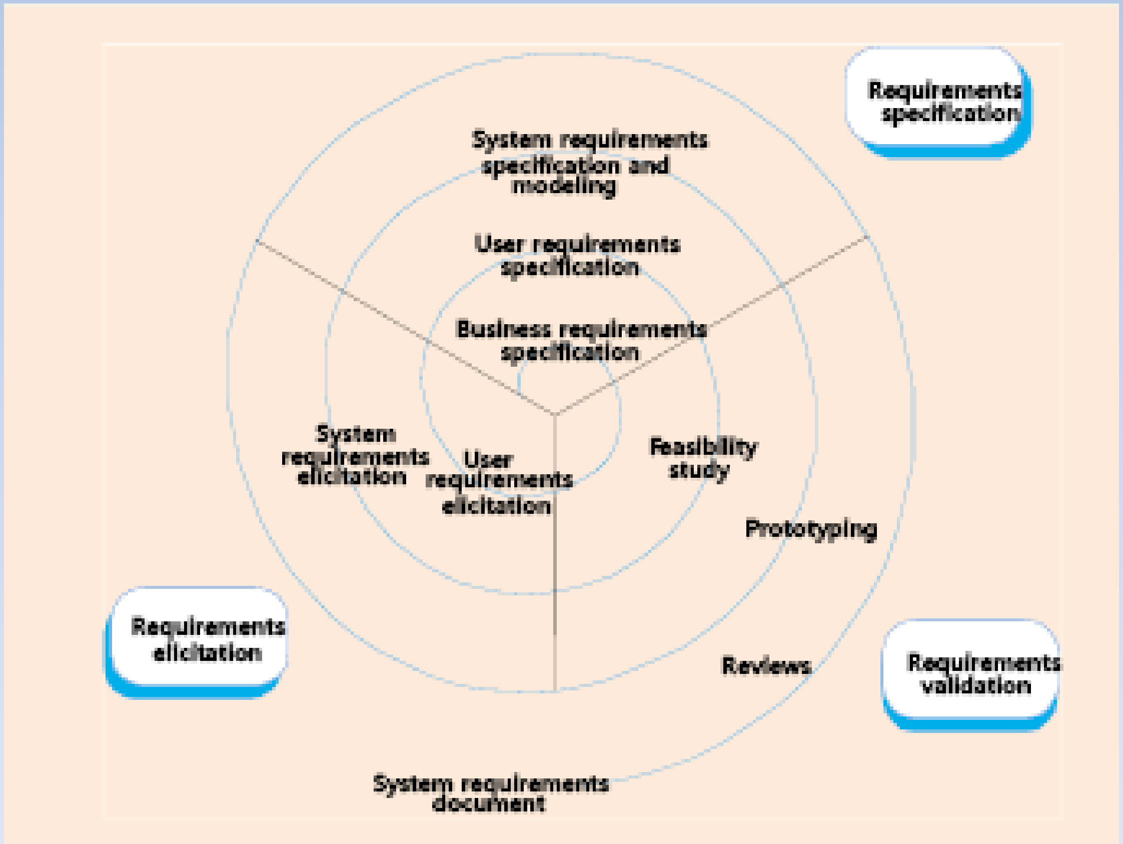
RE Processes vary widely depending on application domain, involved people, organization developing the requirements

- Generic RE Activities.


Feasibility Study
Requirements Elicitation and Analysis
Requirements Specification
Requirements Validation
Feasibility Report
System Models
User And System Requirements
Requirement Document

RE Process Diagram

각 과정을 1회만 하는 것이 아니라 System Requirement Document가 나올 때까지 반복적으로 수행한다.


Requirements specification
System requirements specification and modeling
User requirements specification
Business requirements specification
System requirements elicitation
User requirements elicitation
Feasibility study
Prototyping
Requirements elicitation
Reviews
Requirements validation
System requirements document

RE Process

Feasibility Study

Decides whether or not the propose system is worth to develop

- 프로젝트에 대한 타당성 검토과정
- Feasibility 검토를 위한 질문
  - ✓ System이 개발되지 않는다면??
  - ✓ 지금의 문제점은 무엇인지?
  - ✓ System이 고객의 Requirement를 어떻게 만족 시킬 것인가?
  - ✓ System 통합에서의 문제점은 어떤 것인가?
  - ✓ 어떤 Skill과 Technology가 요구되는가

RE Process

Requirement Discovery

- Stakeholder Identification
  - ✓ System과 연관된 사람들을 파악
  - ✓ 직접 혹은 간접 적으로 연관된 모든 사람을 포함
- Stakeholder Interviews
  - ✓ Closed Interview : 미리 준비된 질문들로 인터뷰를 진행
  - ✓ Open Interview : 미리 준비된 계획이나 범위 없이 인터뷰를 진행

RE Process

Requirement Discovery Problems

- Stakeholder(SH)들이 자신의 요구를 정확히 알지 못한다.
- SH들이 자신의 Requirement를 자신의 방식대로 표현한다.
- 다른 SH들이 상충되는 Requirement를 제시할 수 있다.
- 정치적인 요구 혹은 환경적인 요소들이 System Requirement 에 영향을 끼칠 수 있다.
- Analysis process 동안 Requirement 가 바뀔 수 있다.

➡ 수집된 Requirement 를 걸러낼 필요가 있다!!

RE Process

Requirement Elicitation

cross-functional implications can be elicited by conducting JRD sessions in a controlled environment, facilitated by a trained facilitator, wherein stakeholders participate in discussions to elicit requirements, analyze their details and uncover cross-functional implications.

- JRD(Joint Requirement Development)Sessions
  - ✓ 회의를 통해 Cross-functional Requirement를 제거
- Requirement Presentation Schemes
  - ✓ Contract-style list : Check-List of Requirements
  - ✓ User Story : Requirement 를 informal한 표현으로 작성
  - ✓ Use case : UML에서의 Scenario Based Technique
  - ✓ Sequence Diagram : System processing 기반 Diagram

RE Process

Requirement Validation

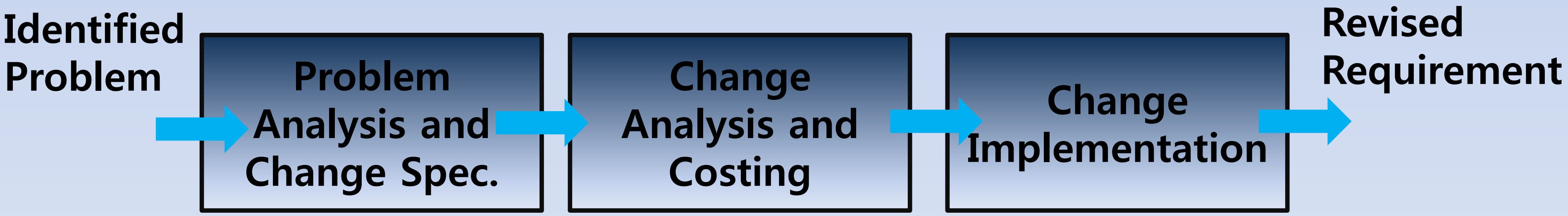
Demonstrate whether the requirements we defined are what the customer really wants. Requirements error costs are high, so validation is very important.

- Validation Checks
  - ✓ Validity : System이 고객이 요구한 기능들을 제공하는가
  - ✓ Consistency : 상충되는 Requirement가 있는가
  - ✓ Completeness : 고객이 요구한 모든 기능들이 포함 되었는가
  - ✓ Realism : 가용범위 내의 기술과 비용으로 구현 가능한가
  - ✓ Verifiability : 검증이 가능한 Requirement 인가

- Validation Techniques
  - ✓ Requirement Reviews
  - ✓ Prototyping
  - ✓ Test-case generation

Requirement Management

The process of managing requirement change during the RE process and system development


Identified Problem
Problem Analysis and Change Spec.
Change Analysis and Costing
Change Implementation
Revised Requirement

JFeature

1. Introduce
2. Installation
3. Usage

JFeature

- When Developer need to use JFeature?
  - Requirements을 추출하였지만 정해진 문서 형식이 없어 제대로 정리되어있지 않다
  - All requirements 을 정확히 파악하기 힘들다.
  - 수정 된 Requirements와 수정 전 Requirements의 구분이 힘들다.
  - 변경되는 Requirements에 대하여 추적성이 표현되어 있지 않아 요구사항의 흐름을 파악하기 힘들다.
  - Requirements의 내용을 일관되게 수정하게 어렵다.
  - Testcase 와 연동이 필요하다.
  - Coverage형태로 요구사항의 비교적 정확한 반영율을 알고싶다.
  - CVS,XML과 같은 다른 형태의 requirements를 쉽게 가져오고 싶다.

JFeature

- Simplify make documents
  - Requirements를 기록, 보존.
  - Requirements의 수정사항이 생겼을 때, 즉시 View를 제공하므로 빠른 편집이 가능
  - Requirements 편집하는 확장 인터페이스
- Round trip engineering
  - CSV 파일의 requirements와 동기화 가능
  - XML 파일의 requirements와 동기화 가능

JFeature

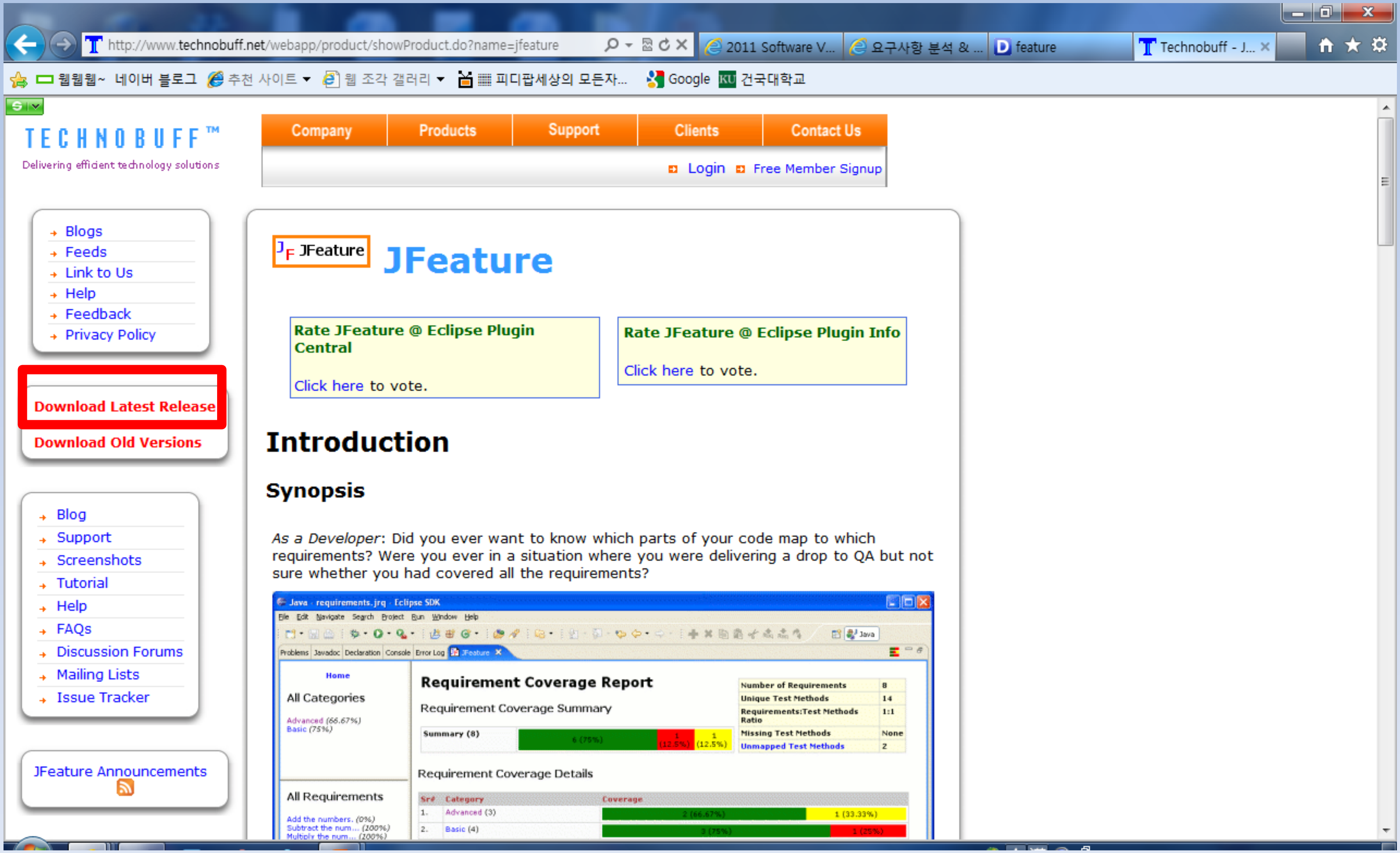
- 개발된 Test code와 Requirements를 매칭시킨다
  - 요구사항이 반영여부를 Coverage형태로 쉽게 확인 가능
  - Junit과 연동하여 requirements coverage 대한 Additional reporting format을 제공
  - TestMethod editor를 통해서 requirements에 맞는 TestMethod를 정의
  - 프로세스를 단순화 시킨다

- JFeature는JUnit TestCase 외 다른 Plug-in들과는 연동이 불가.

- CPL(Common Public License) 무료 라이선스

Jfeature installation

- http://www.technobuff.net/webapp/product/showProduct.do?name=jfeature 에 접속후 다운로드



JFeature

Rate JFeature @ Eclipse Plugin Central

Click here to vote.

Rate JFeature @ Eclipse Plugin Info

Click here to vote.

Introduction

Synopsis

As a Developer: Did you ever want to know which parts of your code map to which requirements? Were you ever in a situation where you were delivering a drop to QA but not sure whether you had covered all the requirements?

Requirement Coverage Report

Requirement Coverage Summary

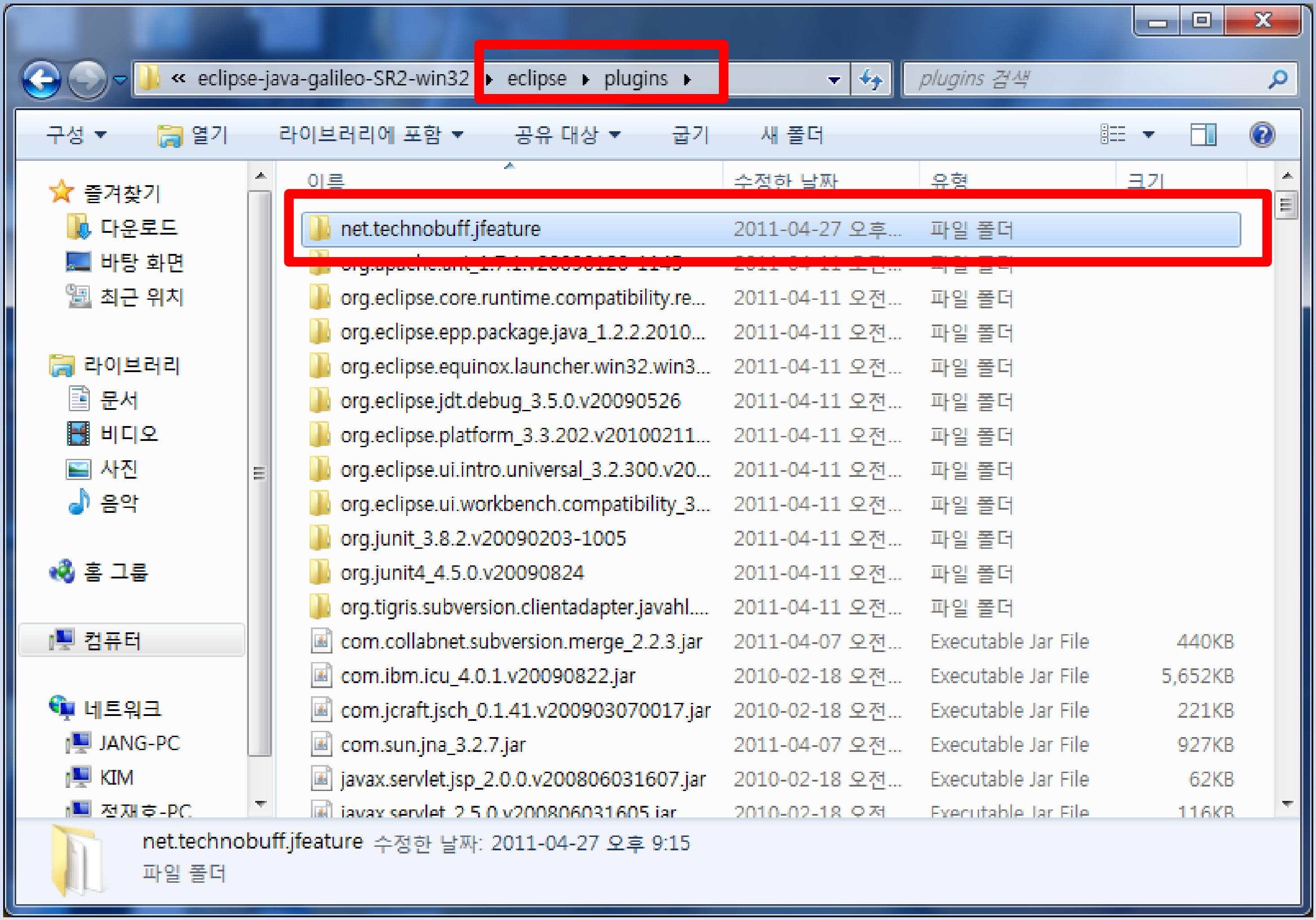
Number of Requirements	8
Unique Test Methods	14
Requirements:Test Methods Ratio	1:1
Missing Test Methods	None
Unmapped Test Methods	2

Summary (8): 6 (75%) 1 (12.5%) 1 (12.5%)

Requirement Coverage Details

Sr#	Category	Coverage
1.	Advanced (3)	2 (66.67%) 1 (33.33%)
2.	Basic (4)	3 (75%) 1 (25%)

Jfeature installation

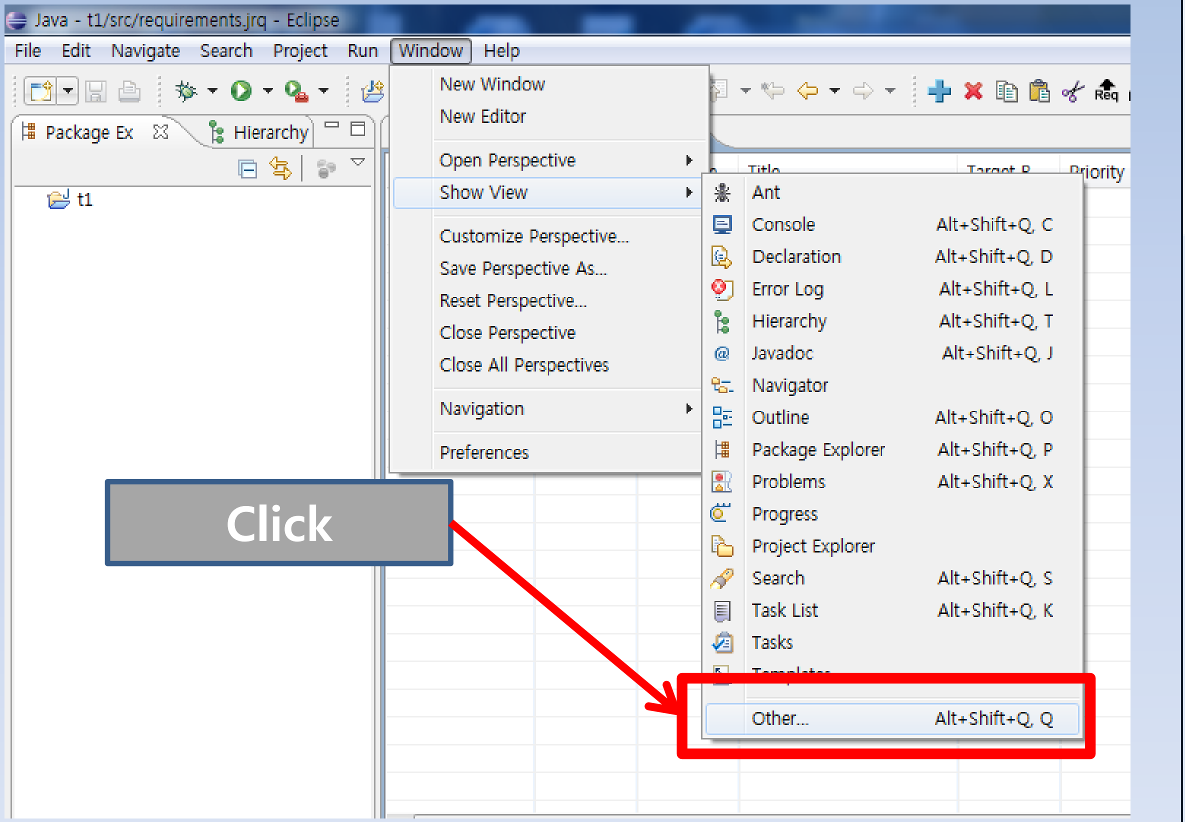


이름	수정한 날짜	유형	크기
net.technobuff.jfeature	2011-04-27 오후...	파일 폴더	
org.apache.ant_1.7.1.v20090120-1145	2011-04-11 오전...	파일 폴더	
org.eclipse.core.runtime.compatibility.re...	2011-04-11 오전...	파일 폴더	
org.eclipse.epp.package.java_1.2.2.2010...	2011-04-11 오전...	파일 폴더	
org.eclipse.equinox.launcher.win32.win3...	2011-04-11 오전...	파일 폴더	
org.eclipse.jdt.debug_3.5.0.v20090526	2011-04-11 오전...	파일 폴더	
org.eclipse.platform_3.3.202.v20100211...	2011-04-11 오전...	파일 폴더	
org.eclipse.ui.intro.universal_3.2.300.v20...	2011-04-11 오전...	파일 폴더	
org.eclipse.ui.workbench.compatibility_3...	2011-04-11 오전...	파일 폴더	
org.junit_3.8.2.v20090203-1005	2011-04-11 오전...	파일 폴더	
org.junit4_4.5.0.v20090824	2011-04-11 오전...	파일 폴더	
org.tigris.subversion.clientadapter.javahl....	2011-04-11 오전...	파일 폴더	
com.collabnet.subversion.merge_2.2.3.jar	2011-04-07 오전...	Executable Jar File	440KB
com.ibm.icu_4.0.1.v20090822.jar	2010-02-18 오전...	Executable Jar File	5,652KB
com.jcraft.jsch_0.1.41.v200903070017.jar	2010-02-18 오전...	Executable Jar File	221KB
com.sun.jna_3.2.7.jar	2011-04-07 오전...	Executable Jar File	927KB
javax.servlet.jsp_2.0.0.v200806031607.jar	2010-02-18 오전...	Executable Jar File	62KB
javax.servlet_2.5.0.v200806031605.jar	2010-02-18 오전	Executable Jar File	116KB

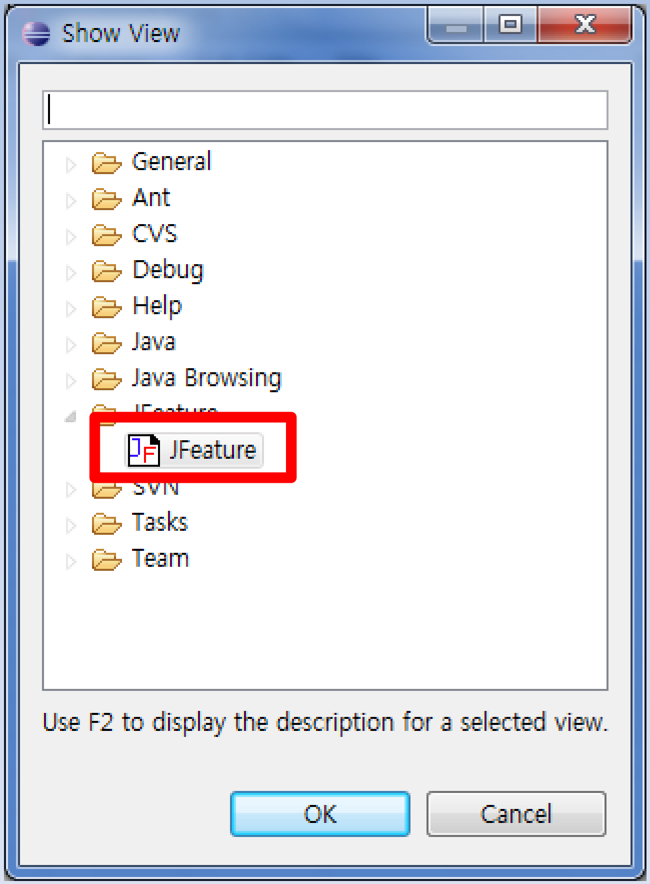
net.technobuff.jfeature 수정한 날짜: 2011-04-27 오후 9:15
파일 폴더

JFeature installation

- Eclipse 실행후 Jfeature Window 활성화

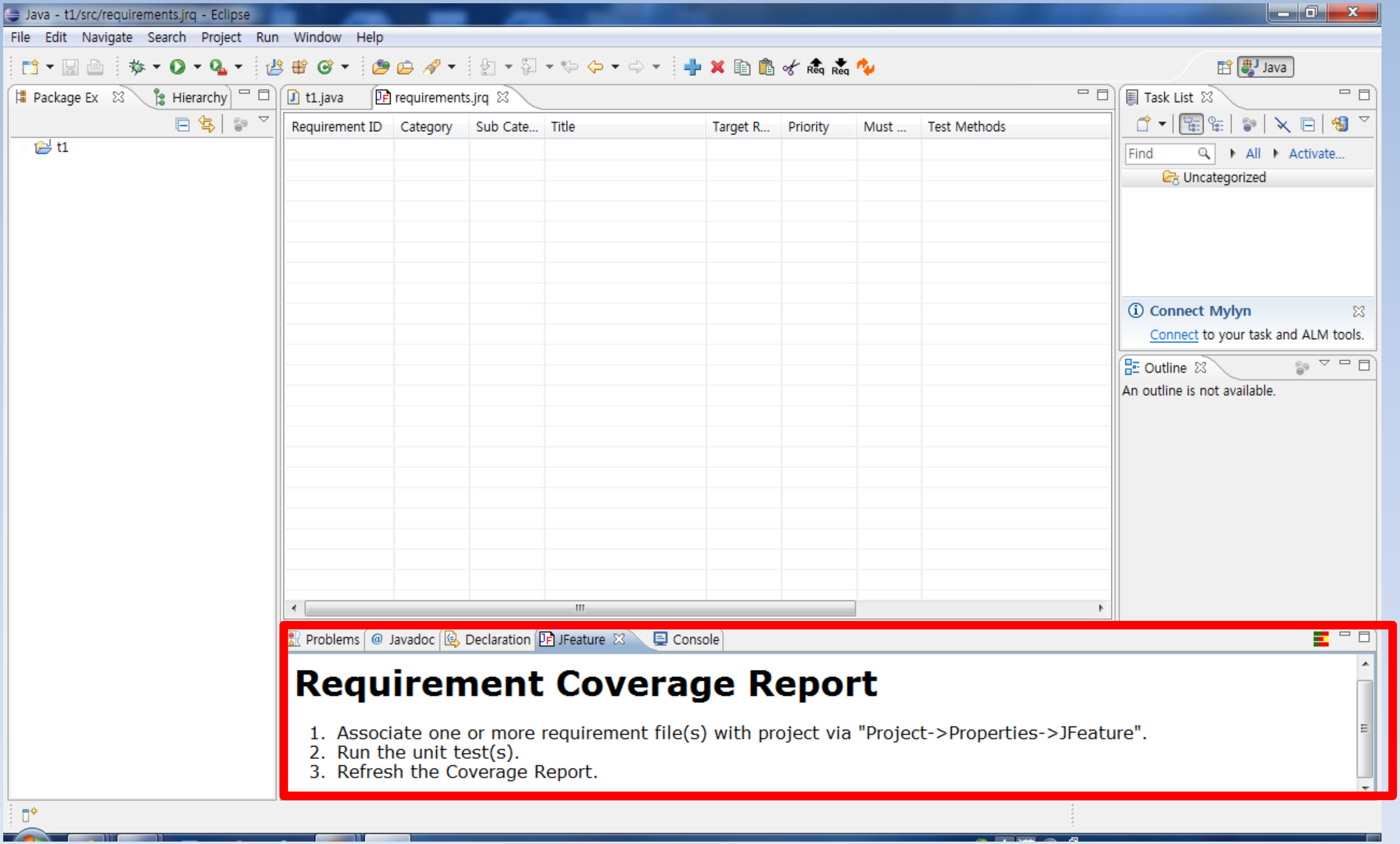


Click



Use F2 to display the description for a selected view.

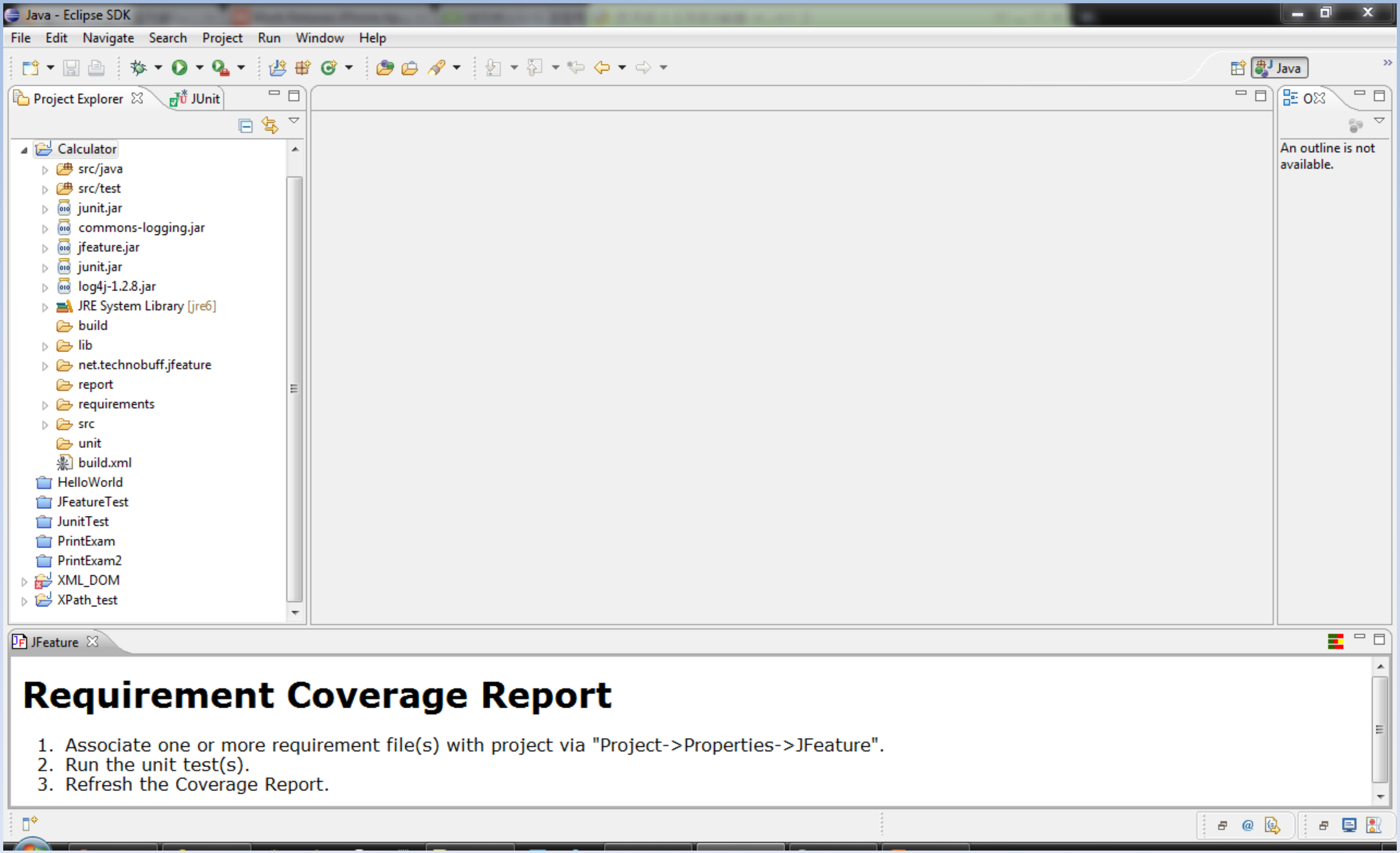
JFeature installation



Requirement Coverage Report

1. Associate one or more requirement file(s) with project via "Project->Properties->JFeature".
2. Run the unit test(s).
3. Refresh the Coverage Report.

JFeature Usage



Requirement Coverage Report

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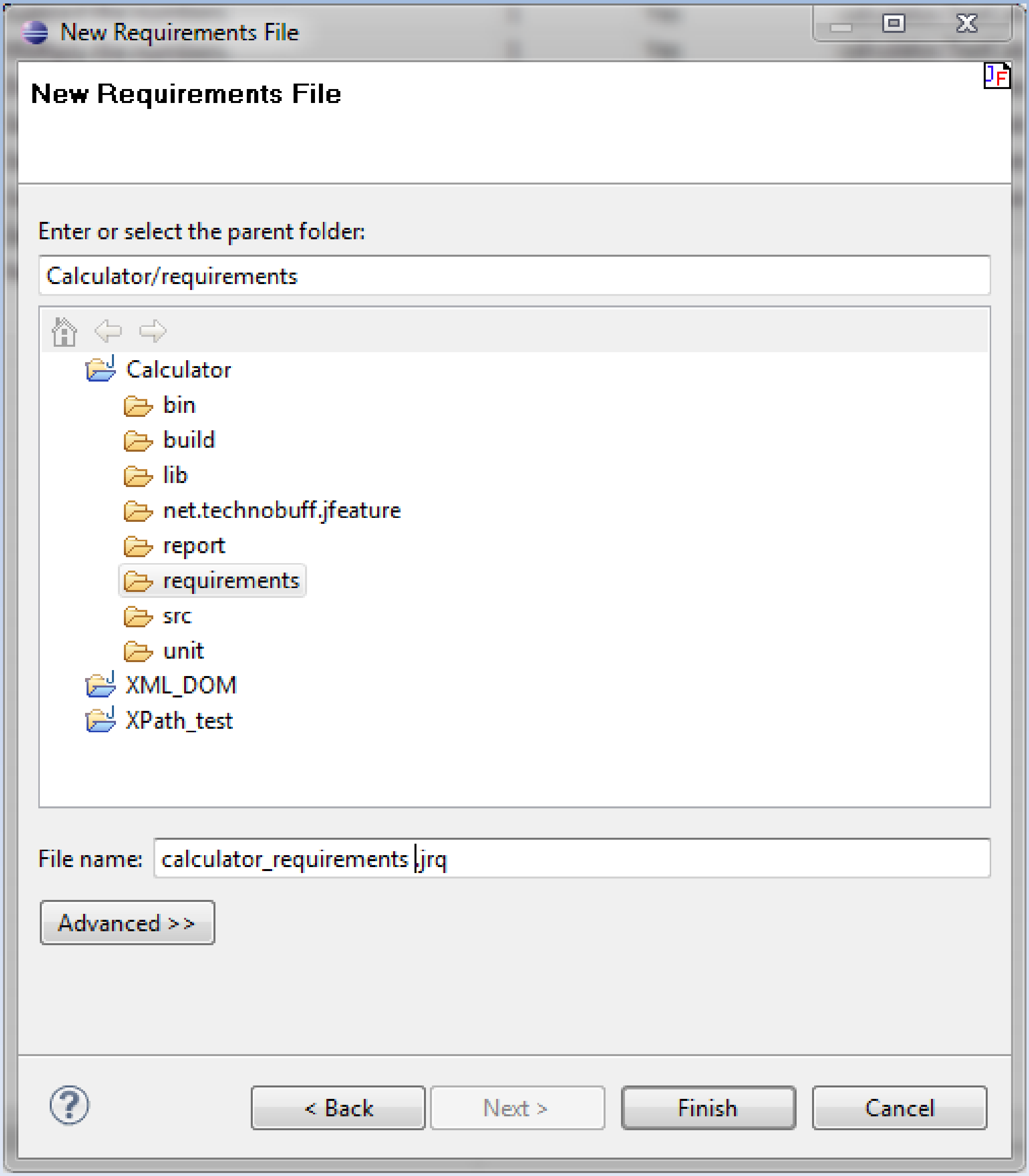
JFeature Usage

- 신규 Requirements 작성
- File Menu – New - Others



New Requirements File

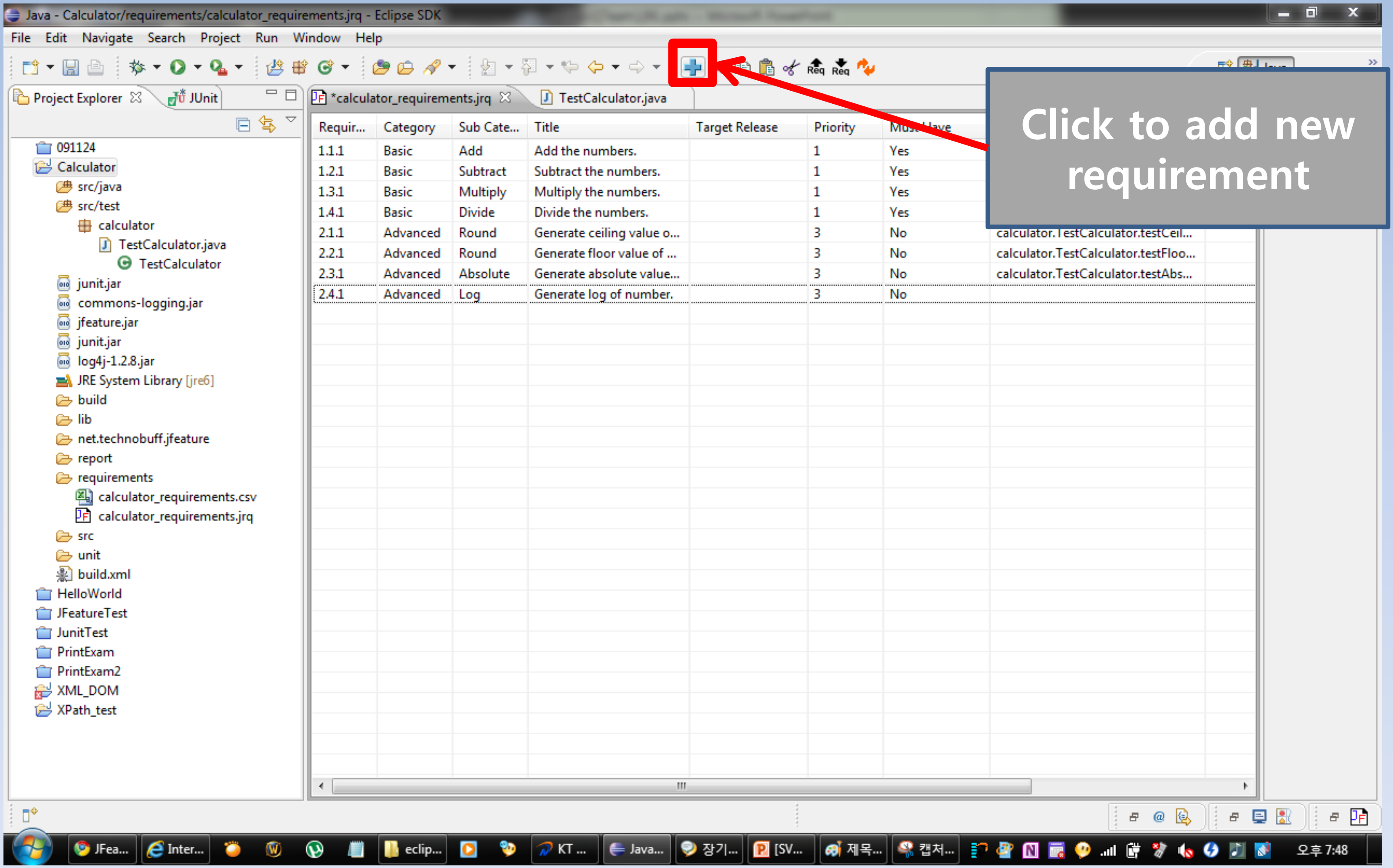
New Requirements File

Enter or select the parent folder:

Calculator/requirements

File name: calculator_requirements.jrq

JFeature Usage



Java - Calculator/requirements/calculator_requirements.jrq - Eclipse SDK

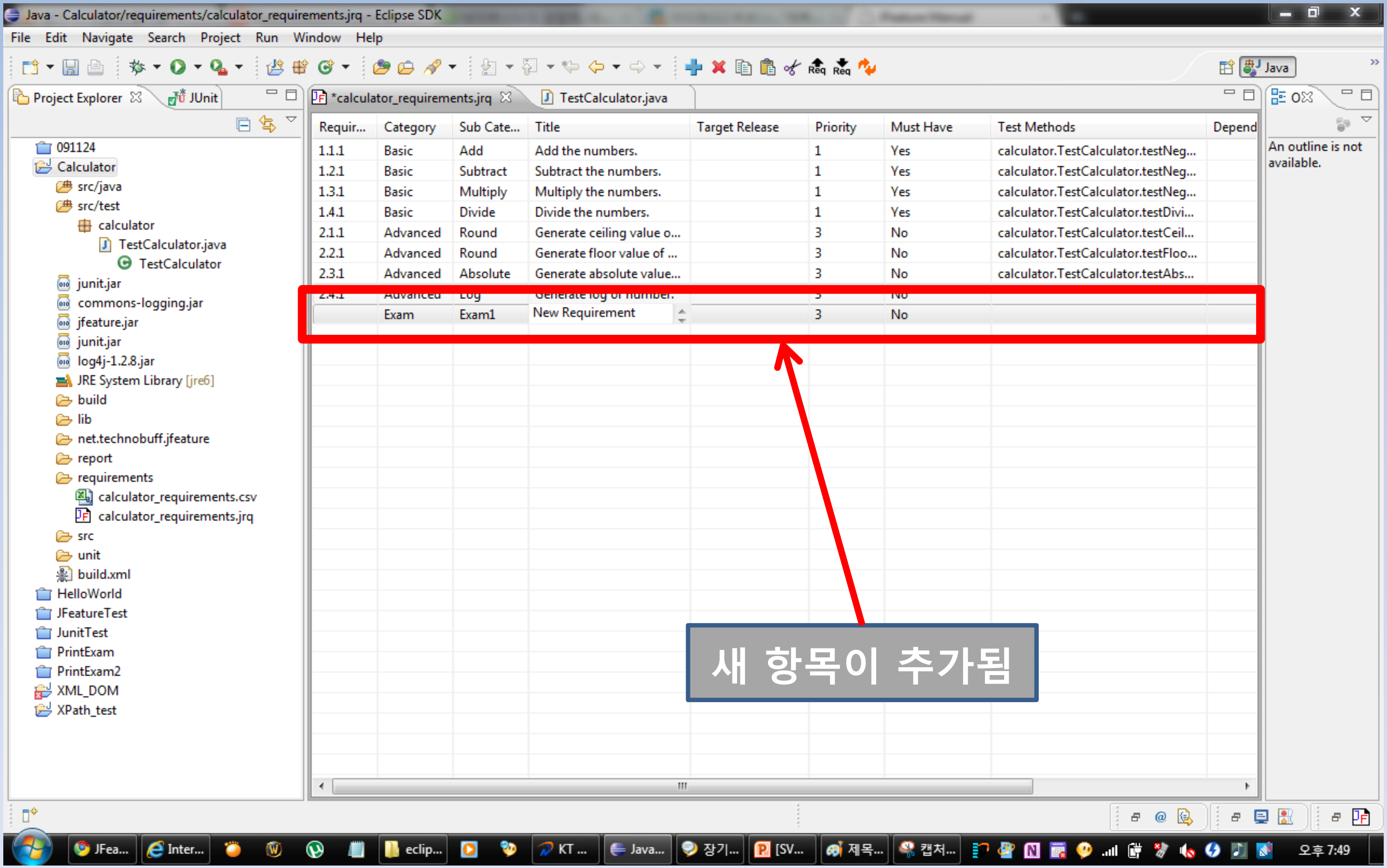
File Edit Navigate Search Project Run Window Help
Project Explorer
JUnit
*calculator_requirements.jrq
TestCalculator.java

- 091124
- Calculator
  - src/java
  - src/test
    - calculator
      - TestCalculator.java
        - TestCalculator
  - junit.jar
  - commons-logging.jar
  - jfeature.jar
  - junit.jar
  - log4j-1.2.8.jar
  - JRE System Library [jre6]
  - build
  - lib
  - net.technobuff.jfeature
  - report
  - requirements
    - calculator_requirements.csv
    - calculator_requirements.jrq
  - src
  - unit
  - build.xml
- HelloWorld
- JFeatureTest
- JunitTest
- PrintExam
- PrintExam2
- XML_DOM
- XPath_test

Requir...	Category	Sub Cate...	Title	Target Release	Priority	Must Have	
1.1.1	Basic	Add	Add the numbers.		1	Yes	
1.2.1	Basic	Subtract	Subtract the numbers.		1	Yes	
1.3.1	Basic	Multiply	Multiply the numbers.		1	Yes	
1.4.1	Basic	Divide	Divide the numbers.		1	Yes	
2.1.1	Advanced	Round	Generate ceiling value o...		3	No	calculator.TestCalculator.testCeil...
2.2.1	Advanced	Round	Generate floor value of ...		3	No	calculator.TestCalculator.testFloo...
2.3.1	Advanced	Absolute	Generate absolute value...		3	No	calculator.TestCalculator.testAbs...
2.4.1	Advanced	Log	Generate log of number.		3	No	

Click to add new requirement

JFeature Usage



Java - Calculator/requirements/calculator_requirements.jrq - Eclipse SDK
File Edit Navigate Search Project Run Window Help
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JUnit
*calculator_requirements.jrq
TestCalculator.java
An outline is not available.
Java

- 091124
- Calculator
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- PrintExam2
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- XPath_test

Requir...	Category	Sub Cate...	Title	Target Release	Priority	Must Have	Test Methods	Depend
1.1.1	Basic	Add	Add the numbers.		1	Yes	calculator.TestCalculator.testNeg...	
1.2.1	Basic	Subtract	Subtract the numbers.		1	Yes	calculator.TestCalculator.testNeg...	
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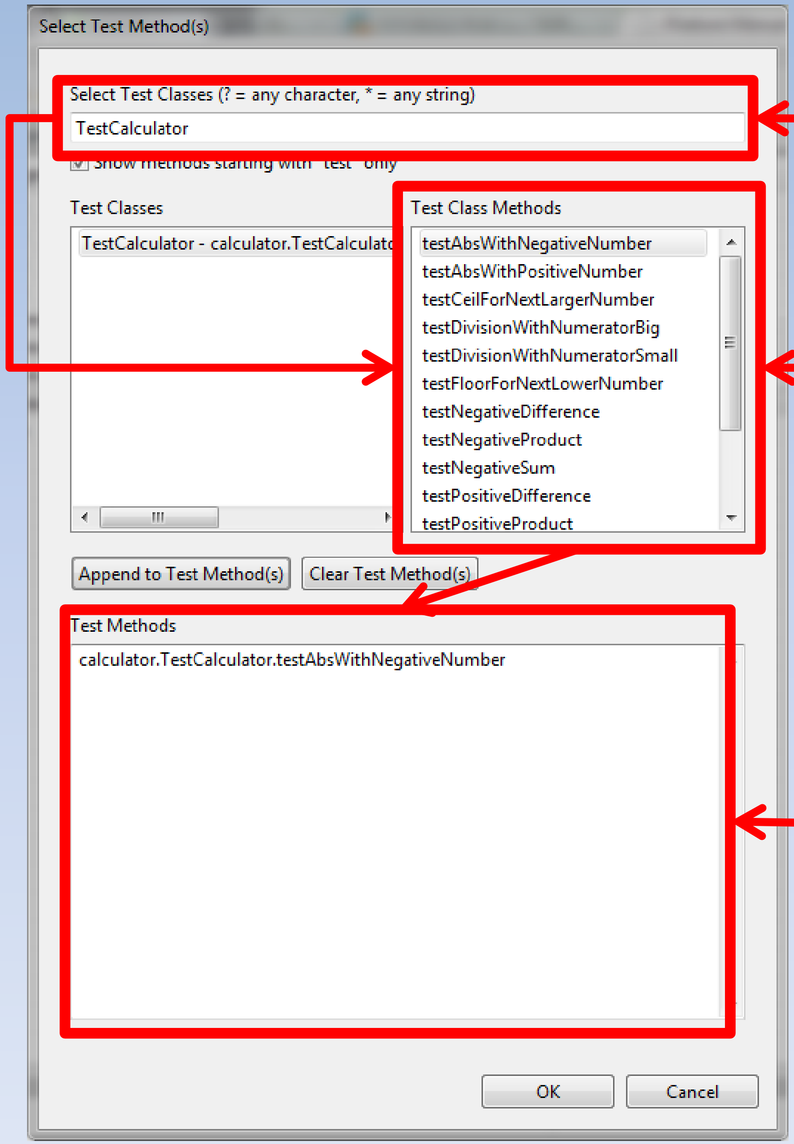
2.2.1	Advanced	Round	Generate floor value of ...		3	No	calculator.TestCalculator.testFloo...	
2.3.1	Advanced	Absolute	Generate absolute value...		3	No	calculator.TestCalculator.testAbs...	
2.4.1	Advanced	Log	Generate log of number.		3	No		
	Exam	Exam1	New Requirement		3	No		

새 항목이 추가됨

JFeature Usage



Select Test Method(s)

Select Test Classes (? = any character, * = any string)

TestCalculator

☑ Show methods starting with "test" only

Test Classes

TestCalculator - calculator.TestCalculato

Test Class Methods

testAbsWithNegativeNumber
testAbsWithPositiveNumber
testCeilForNextLargerNumber
testDivisionWithNumeratorBig
testDivisionWithNumeratorSmall
testFloorForNextLowerNumber
testNegativeDifference
testNegativeProduct
testNegativeSum
testPositiveDifference
testPositiveProduct

Test Methods

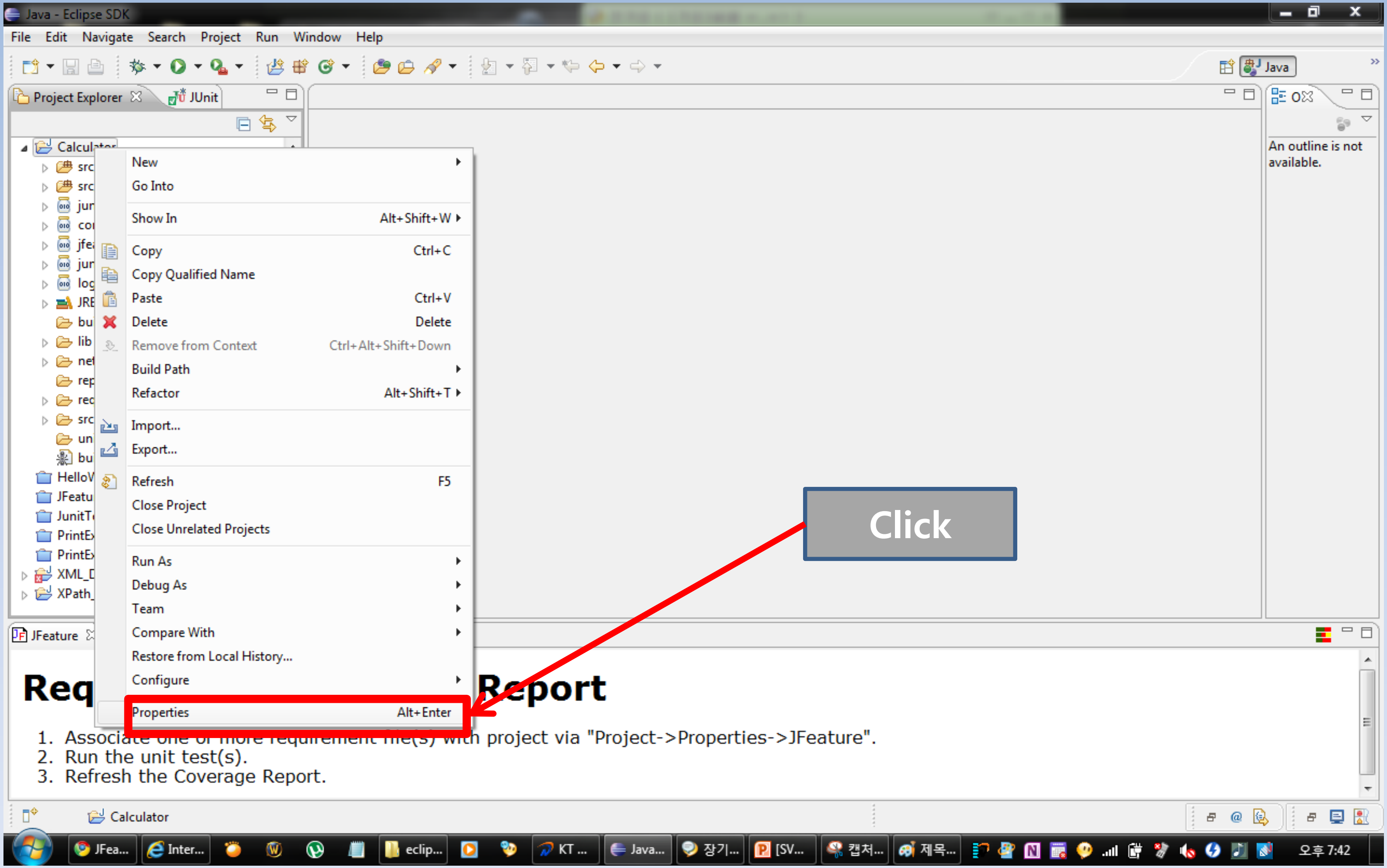
calculator.TestCalculator.testAbsWithNegativeNumber

Input test class name

Automatically show test class Methods

Add Test Methods to the list

JFeature Usage



Req… Report

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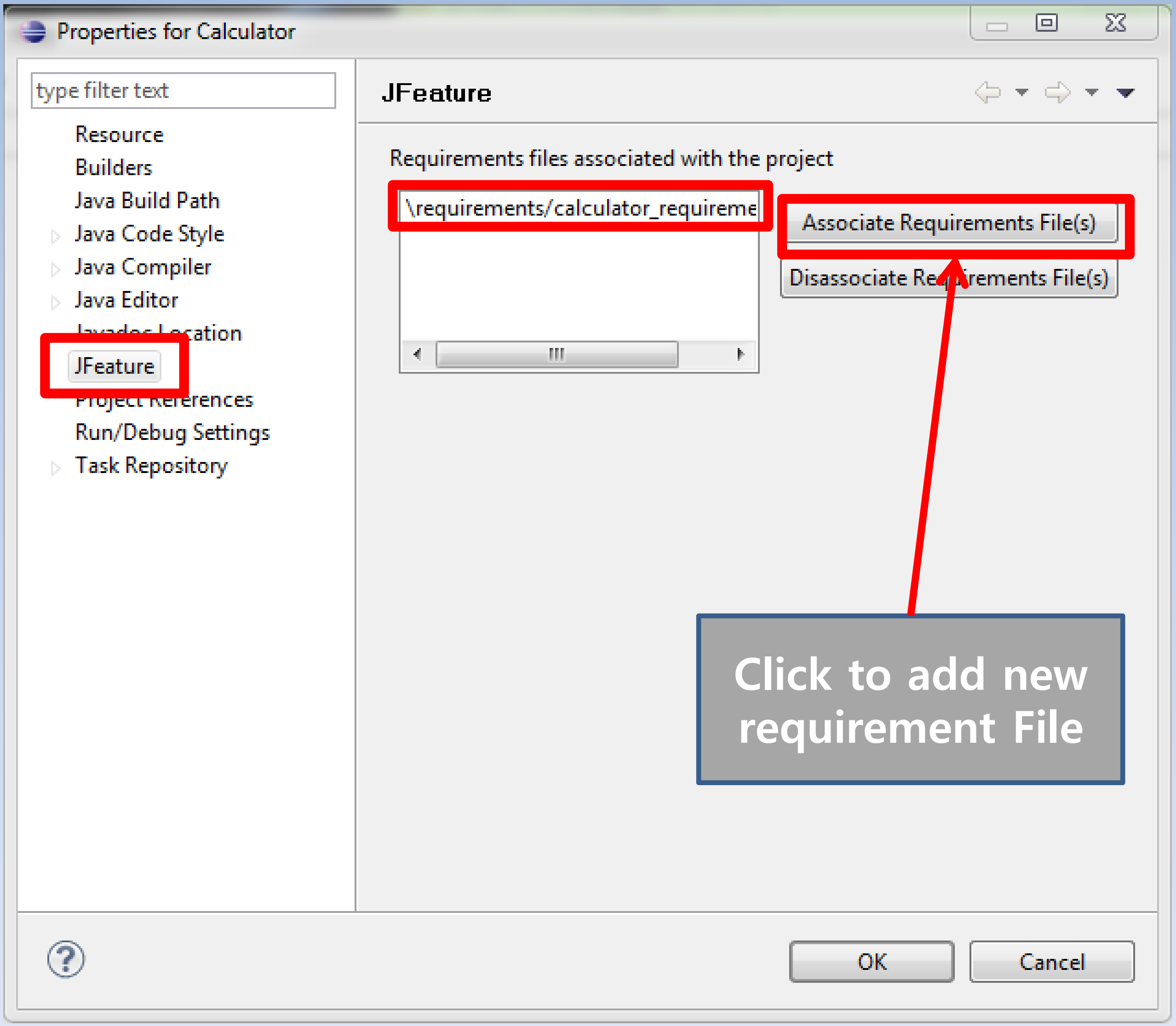
3. Refresh the Coverage Report.

Click

JFeature Usage



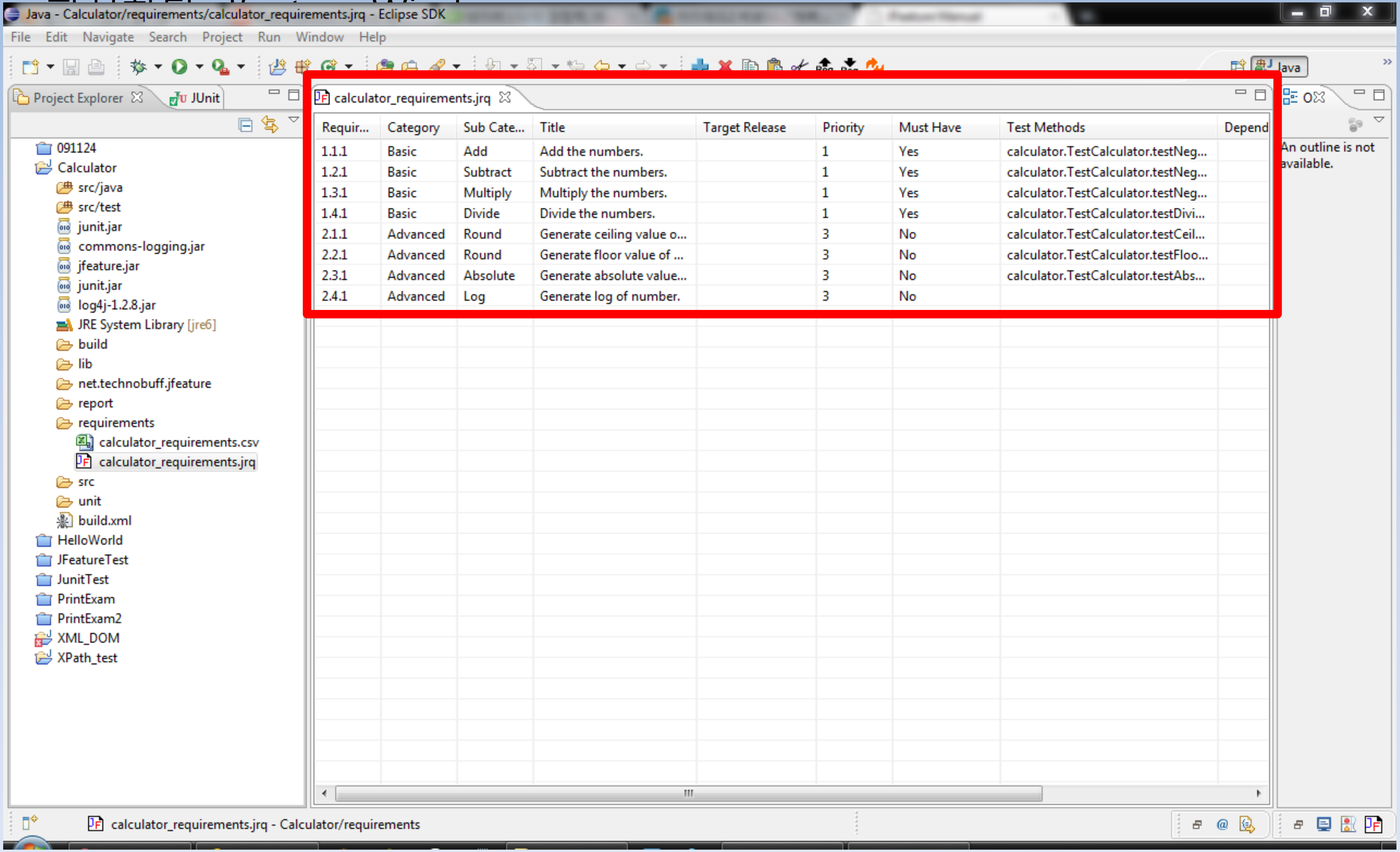
Requirements files associated with the project

\requirements/calculator_requireme

Click to add new requirement File

JFeature Usage

- [illegible] Jfeature Window



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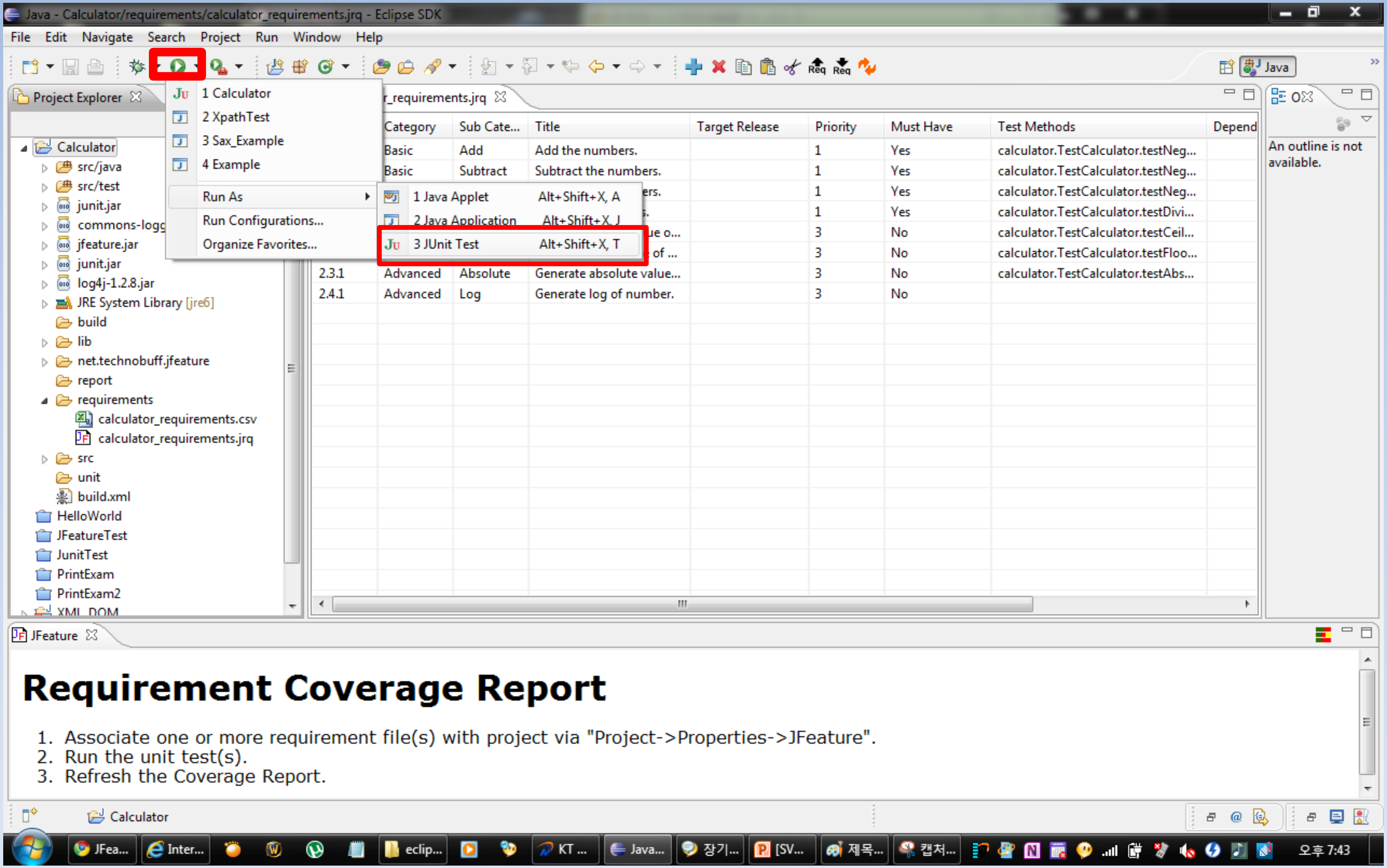
- PrintExam2
- XML_DOM
- XPath_test

Requir...	Category	Sub Cate...	Title	Target Release	Priority	Must Have	Test Methods	Depend
1.1.1	Basic	Add	Add the numbers.		1	Yes	calculator.TestCalculator.testNeg...	
1.2.1	Basic	Subtract	Subtract the numbers.		1	Yes	calculator.TestCalculator.testNeg...	
1.3.1	Basic	Multiply	Multiply the numbers.		1	Yes	calculator.TestCalculator.testNeg...	
1.4.1	Basic	Divide	Divide the numbers.		1	Yes	calculator.TestCalculator.testDivi...	
2.1.1	Advanced	Round	Generate ceiling value o...		3	No	calculator.TestCalculator.testCeil...	
2.2.1	Advanced	Round	Generate floor value of ...		3	No	calculator.TestCalculator.testFloo...	
2.3.1	Advanced	Absolute	Generate absolute value...		3	No	calculator.TestCalculator.testAbs...	
2.4.1	Advanced	Log	Generate log of number.		3	No		

calculator_requirements.jrq - Calculator/requirements

JFeature Usage



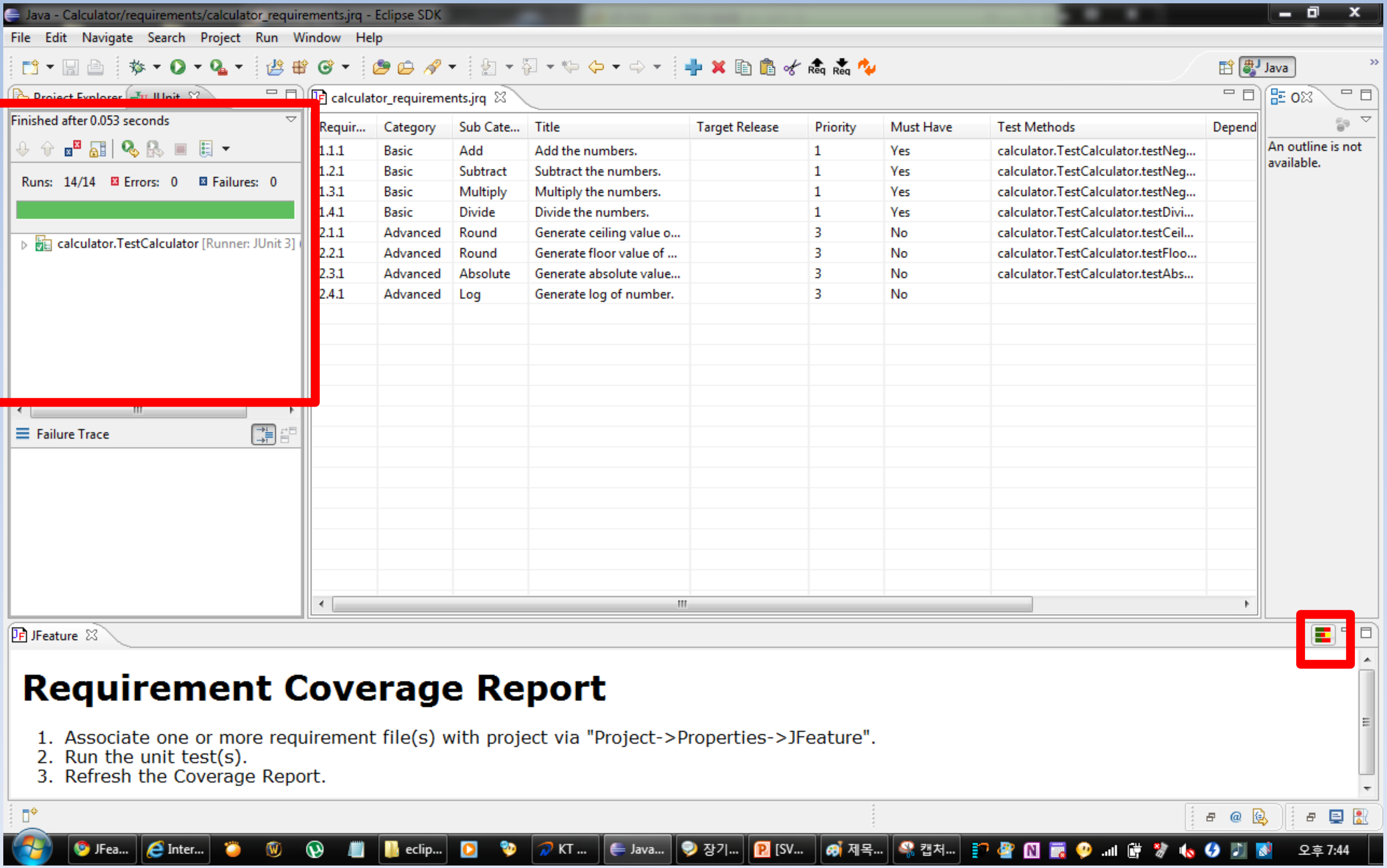
	Category	Sub Cate...	Title	Target Release	Priority	Must Have	Test Methods	Depend
	Basic	Add	Add the numbers.		1	Yes	calculator.TestCalculator.testNeg...	
	Basic	Subtract	Subtract the numbers.		1	Yes	calculator.TestCalculator.testNeg...	
			ers.		1	Yes	calculator.TestCalculator.testNeg...	
			s.		1	Yes	calculator.TestCalculator.testDivi...	
			ue o...		3	No	calculator.TestCalculator.testCeil...	
			of ...		3	No	calculator.TestCalculator.testFloo...	
2.3.1	Advanced	Absolute	Generate absolute value...		3	No	calculator.TestCalculator.testAbs...	
2.4.1	Advanced	Log	Generate log of number.		3	No		

Requirement Coverage Report

1. Associate one or more requirement file(s) with project via "Project->Properties->JFeature".
2. Run the unit test(s).
3. Refresh the Coverage Report.

JFeature Usage

- Unit Testing 결과 및 Requirement Coverage Report 생성



Java - Calculator/requirements/calculator_requirements.jrq - Eclipse SDK
File Edit Navigate Search Project Run Window Help
Java
Project Explorer
JUnit
calculator_requirements.jrq
JFeature

Finished after 0.053 seconds

Runs: 14/14 Errors: 0 Failures: 0

calculator.TestCalculator [Runner: JUnit 3]

Failure Trace

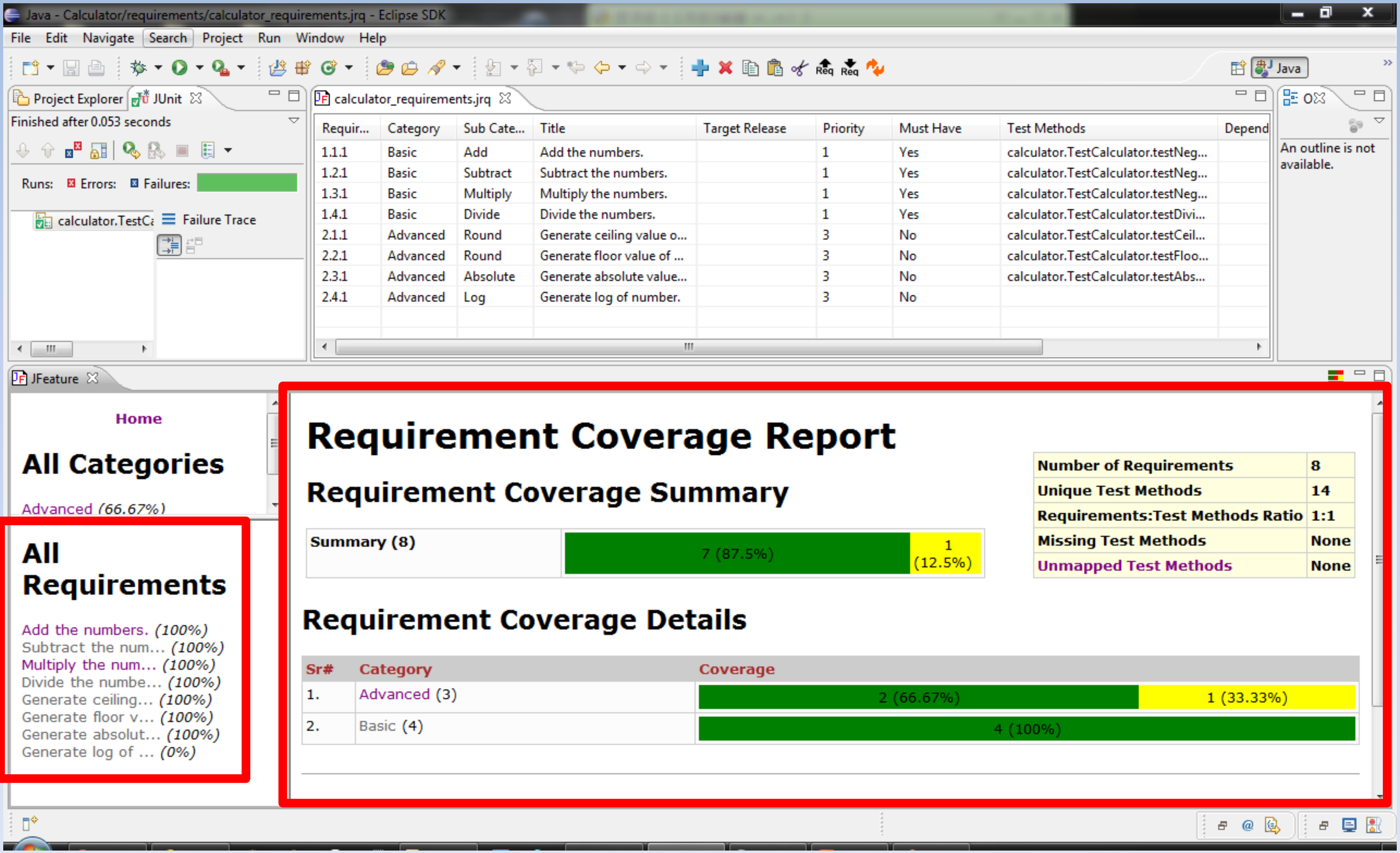
Requir...	Category	Sub Cate...	Title	Target Release	Priority	Must Have	Test Methods	Depend
1.1.1	Basic	Add	Add the numbers.		1	Yes	calculator.TestCalculator.testNeg...	
1.2.1	Basic	Subtract	Subtract the numbers.		1	Yes	calculator.TestCalculator.testNeg...	
1.3.1	Basic	Multiply	Multiply the numbers.		1	Yes	calculator.TestCalculator.testNeg...	
1.4.1	Basic	Divide	Divide the numbers.		1	Yes	calculator.TestCalculator.testDivi...	
2.1.1	Advanced	Round	Generate ceiling value o...		3	No	calculator.TestCalculator.testCeil...	
2.2.1	Advanced	Round	Generate floor value of ...		3	No	calculator.TestCalculator.testFloo...	
2.3.1	Advanced	Absolute	Generate absolute value...		3	No	calculator.TestCalculator.testAbs...	
2.4.1	Advanced	Log	Generate log of number.		3	No		

An outline is not available.

Requirement Coverage Report

1. Associate one or more requirement file(s) with project via "Project->Properties->JFeature".
2. Run the unit test(s).
3. Refresh the Coverage Report.

JFeature Usage


Java - Calculator/requirements/calculator_requirements.jrq - Eclipse SDK
File Edit Navigate Search Project Run Window Help
Java
Project Explorer
JUnit
calculator_requirements.jrq
JFeature
Failure Trace
Runs: Errors: Failures:
calculator.TestCa

Finished after 0.053 seconds

An outline is not available.

Requir...	Category	Sub Cate...	Title	Target Release	Priority	Must Have	Test Methods	Depend
1.1.1	Basic	Add	Add the numbers.		1	Yes	calculator.TestCalculator.testNeg...	
1.2.1	Basic	Subtract	Subtract the numbers.		1	Yes	calculator.TestCalculator.testNeg...	
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2.2.1	Advanced	Round	Generate floor value of ...		3	No	calculator.TestCalculator.testFloo...	
2.3.1	Advanced	Absolute	Generate absolute value...		3	No	calculator.TestCalculator.testAbs...	
2.4.1	Advanced	Log	Generate log of number.		3	No		

Home

All Categories

Advanced *(66.67%)*

All Requirements

Add the numbers. *(100%)*
Subtract the num... *(100%)*
Multiply the num... *(100%)*
Divide the numbe... *(100%)*
Generate ceiling... *(100%)*
Generate floor v... *(100%)*
Generate absolut... *(100%)*
Generate log of ... *(0%)*

Requirement Coverage Report

Number of Requirements	**8**
Unique Test Methods	**14**
Requirements:Test Methods Ratio	**1:1**
Missing Test Methods	**None**
Unmapped Test Methods	**None**

Requirement Coverage Summary

Summary (8)	7 (87.5%)	1 (12.5%)

Requirement Coverage Details

Sr#	Category	Coverage	
1.	Advanced (3)	2 (66.67%)	1 (33.33%)
2.	Basic (4)	4 (100%)	

OSRMT

1. Introduce
2. Installation
3. Usage

OSRMT

- When Developer need to use OSRMT?
  - Requirements을 추출하였지만 정해진 문서 형식이 없어 제대로 정리 되어있지 않다
  - All requirements 을 정확히 파악하기 힘들다.
  - 수정 된 Requirements와 수정 전 Requirements의 구분이 힘들다.
  - 변경되는 Requirements에 대하여 추적성이 표현되어 있지 않아 요구사항의 흐름을 파악하기 힘들다.
  - Requirements의 내용을 일관되게 수정하게 어렵다.
  - 고객의 Requirements의 변형 요청이 잦다
  - 다른 개발자와 협력하여 개발 해야한다.

OSRMT

OSRMT
(Open Source Reqirements Management Tool)

- Designed for Requirements Management & Tracing
  - ✓ Requirements을 SDLC 별로 쉽게 구분하여 정리할 수 있습니다
  - ✓ 요구사항을 Feature/Requirement/Design/Implementation/TestCase로 구분하여 기술할 수 있습니다
  - ✓ 정의된 Requirements들 간의 의존성을 설정하여 추적 관리할 수 있다.
  - ✓ Requirements가 변경된 경우, 어떤 Requirements에 영향을 미치는지 여부를 그림으로 확인할 수 있습니다.
  - ✓ Requirements에 대한 내용을 HTML, PDF 파일로 출력하여 확인.

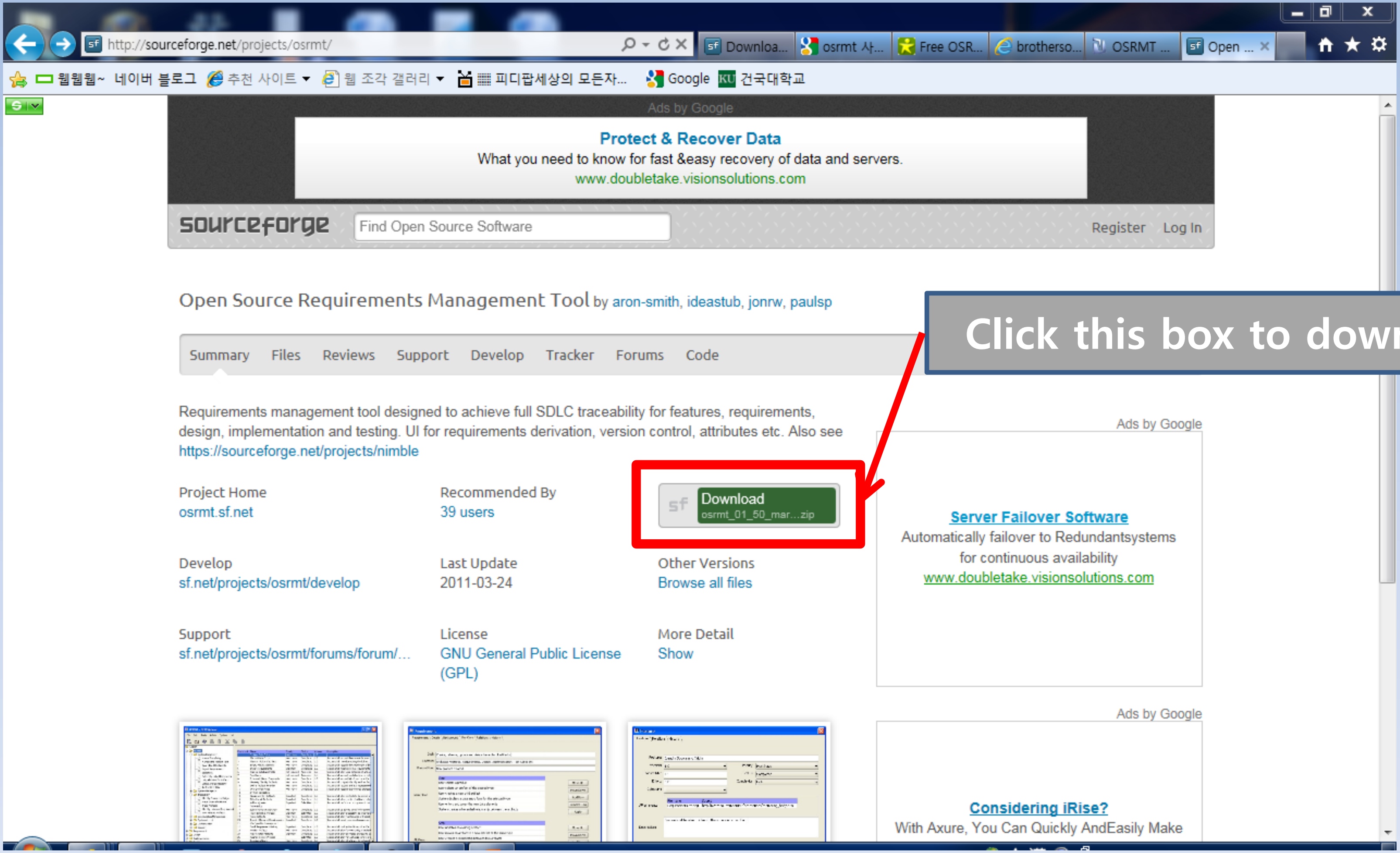
OSRMT

- Need to Pre-installed Programs.
  - ✓ JRE
  - ✓ JDK
  - ✓ Database Programs
    - ❖ MS Access / MS SQL Server / MySQL / Oracle Express / PostgreSQL

- Server/Client System
  - ✓ 다수의 개발자간, 혹은 개발자와 의뢰자의 의견교환을 빠르고 정확하게 할 수 있다
  - ✓ WEB을 통해 데이타베이스의 내용에 접근할 수 있다.

- 무료 라이선스 툴

OSRMT Installation



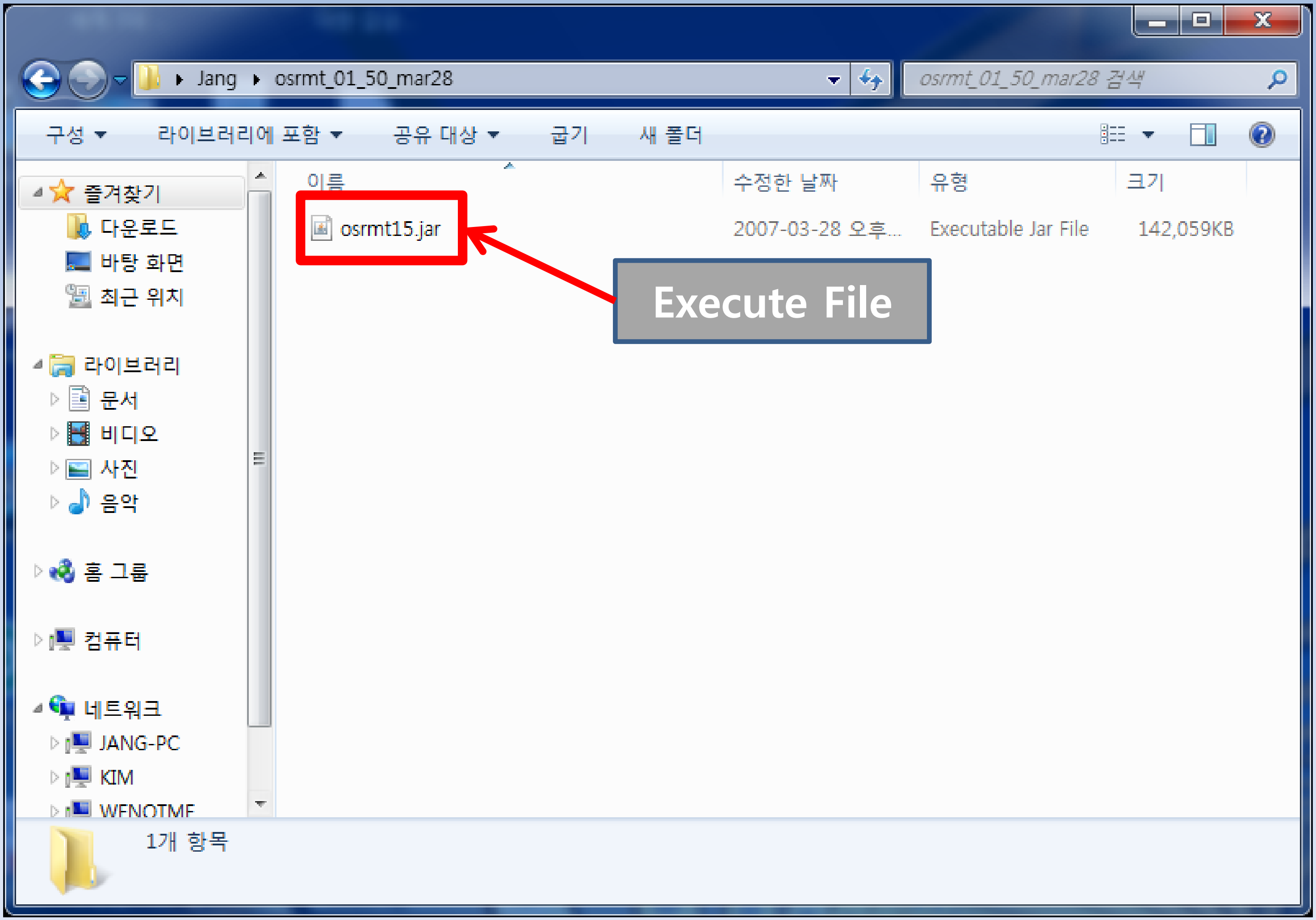
Open Source Requirements Management Tool by aron-smith, ideastub, jonrw, paulsp

Requirements management tool designed to achieve full SDLC traceability for features, requirements, design, implementation and testing. UI for requirements derivation, version control, attributes etc. Also see https://sourceforge.net/projects/nimble

Project Home osrmt.sf.net	Recommended By 39 users	
Develop sf.net/projects/osrmt/develop	Last Update 2011-03-24	Other Versions Browse all files
Support sf.net/projects/osrmt/forums/forum/...	License GNU General Public License (GPL)	More Detail Show

Click this box to download

OSRMT Installation

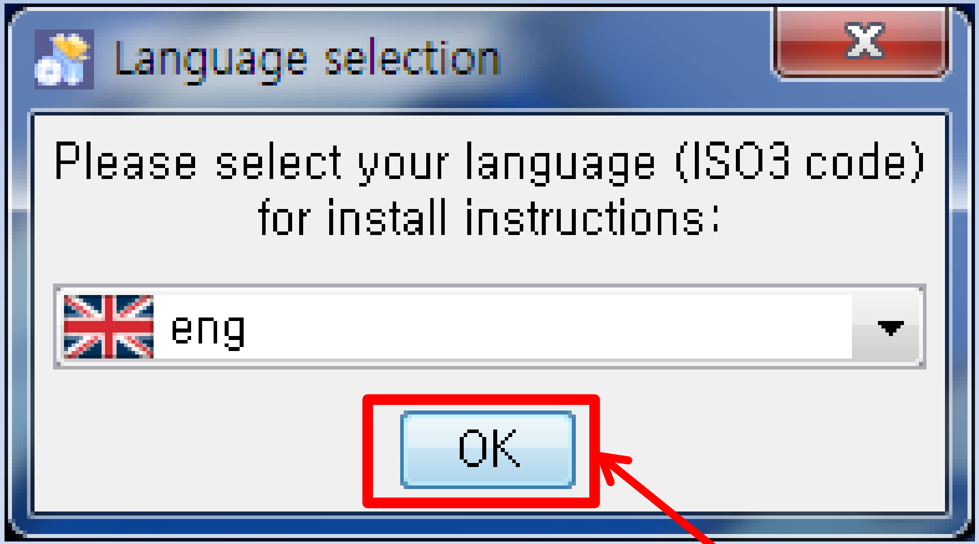


이름	수정한 날짜	유형	크기
osrmt15.jar	2007-03-28 오후...	Executable Jar File	142,059KB

1개 항목

Execute File

OSRMT Installation



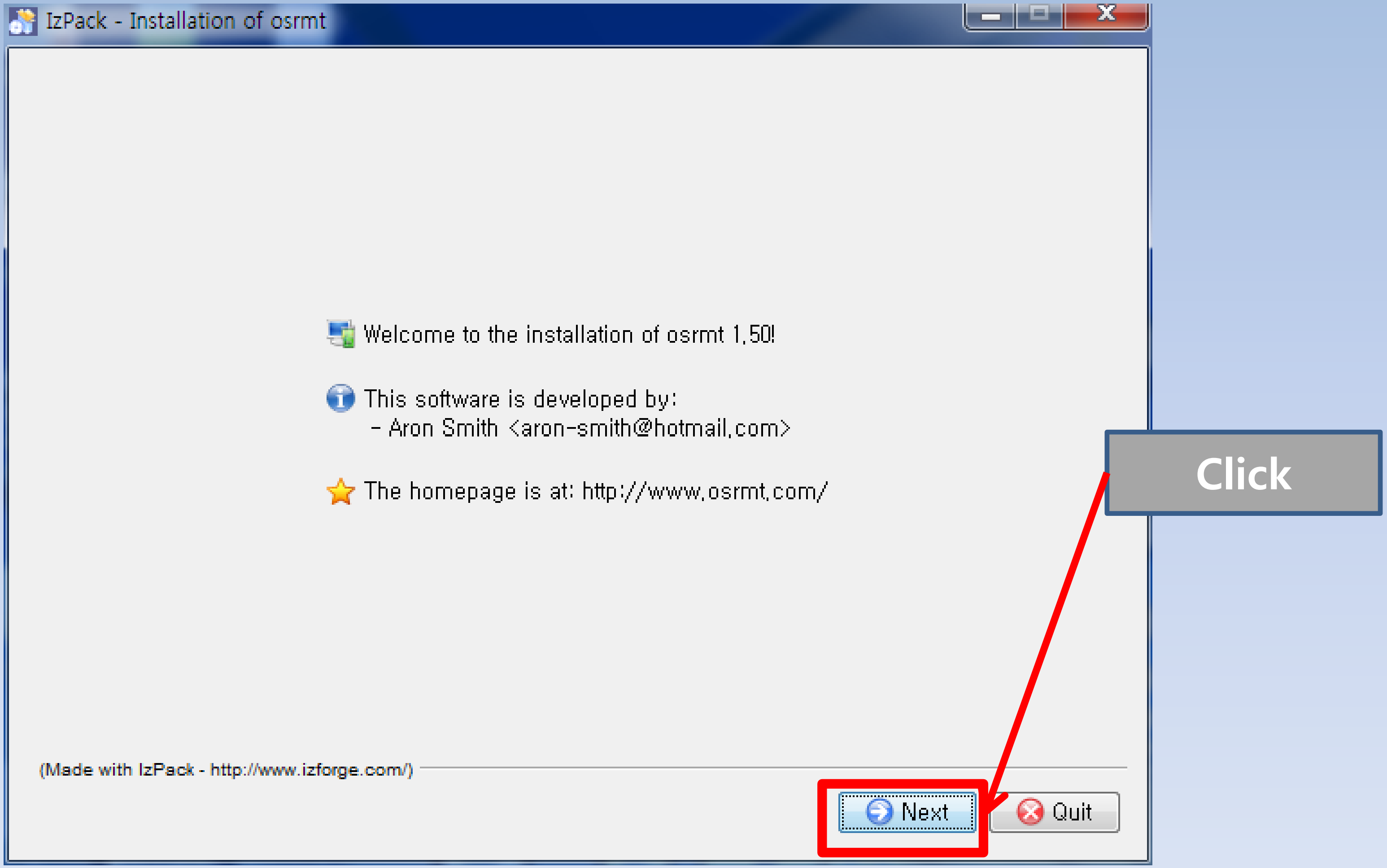
Language selection

Please select your language (ISO3 code) for install instructions:

eng

Click

OSRMT Installation



IzPack - Installation of osrmt

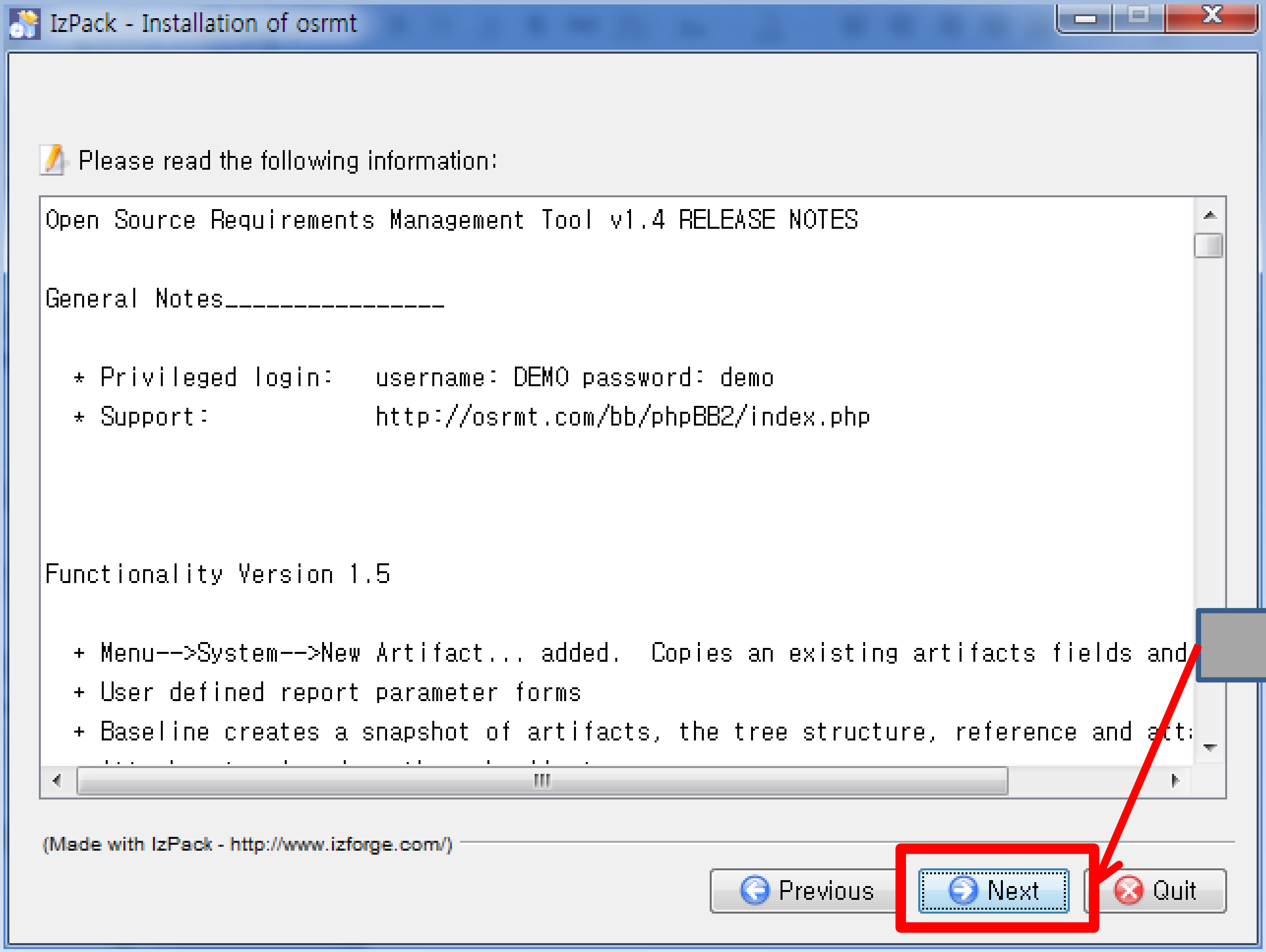
Welcome to the installation of osrmt 1.50!

This software is developed by:
- Aron Smith <aron-smith@hotmail.com>

The homepage is at: http://www.osrmt.com/

(Made with IzPack - http://www.izforge.com/)

OSRMT Installation



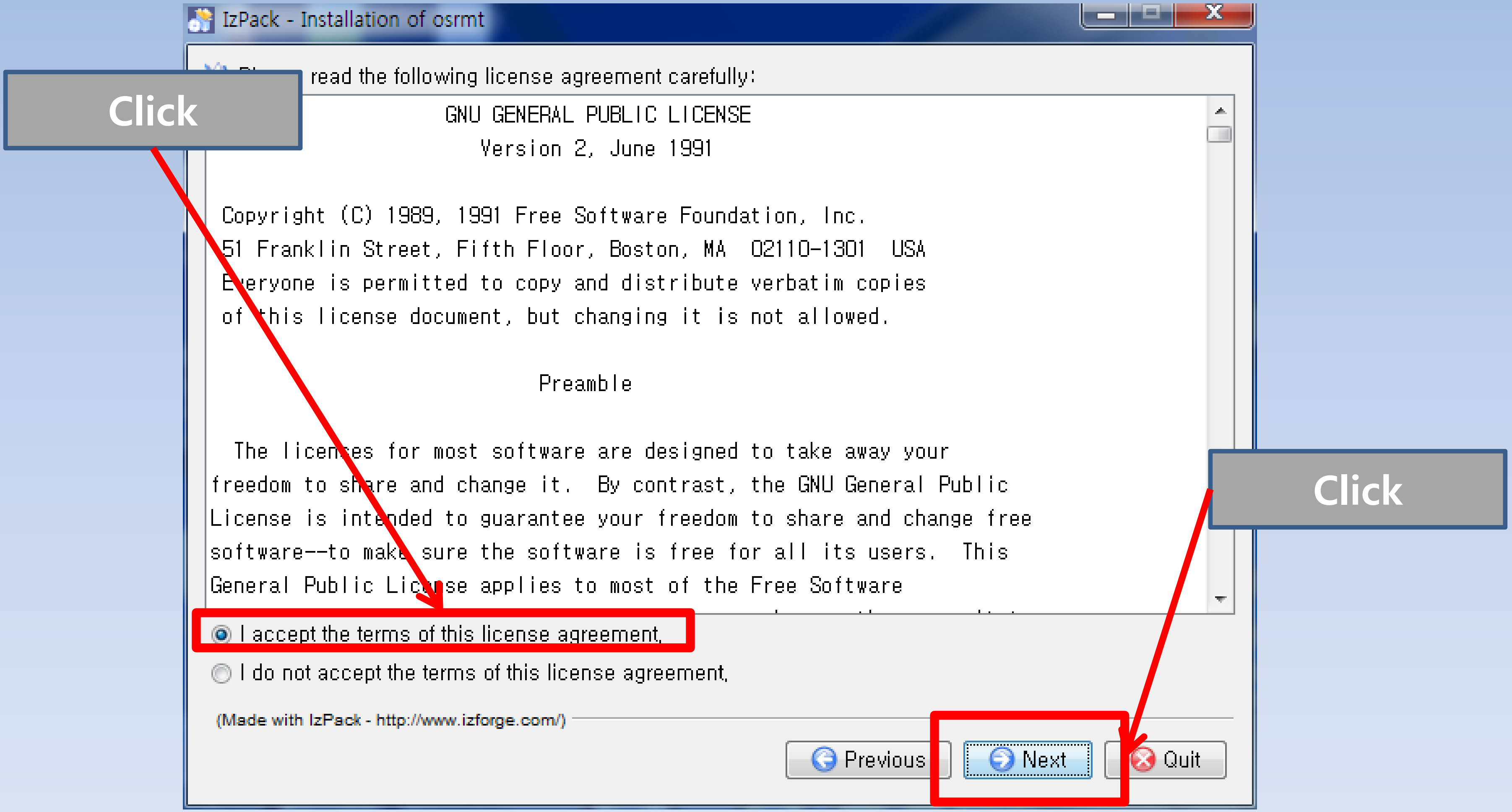
Please read the following information:

```
Open Source Requirements Management Tool v1.4 RELEASE NOTES


General Notes_________________


  + Privileged login:   username: DEMO password: demo
  + Support:            http://osrmt.com/bb/phpBB2/index.php




Functionality Version 1.5


  + Menu-->System-->New Artifact... added.  Copies an existing artifacts fields and
  + User defined report parameter forms
  + Baseline creates a snapshot of artifacts, the tree structure, reference and att
```

(Made with IzPack - http://www.izforge.com/)

Click

OSRMT Installation



IzPack - Installation of osrmt

Please read the following license agreement carefully:

```
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
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                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
```
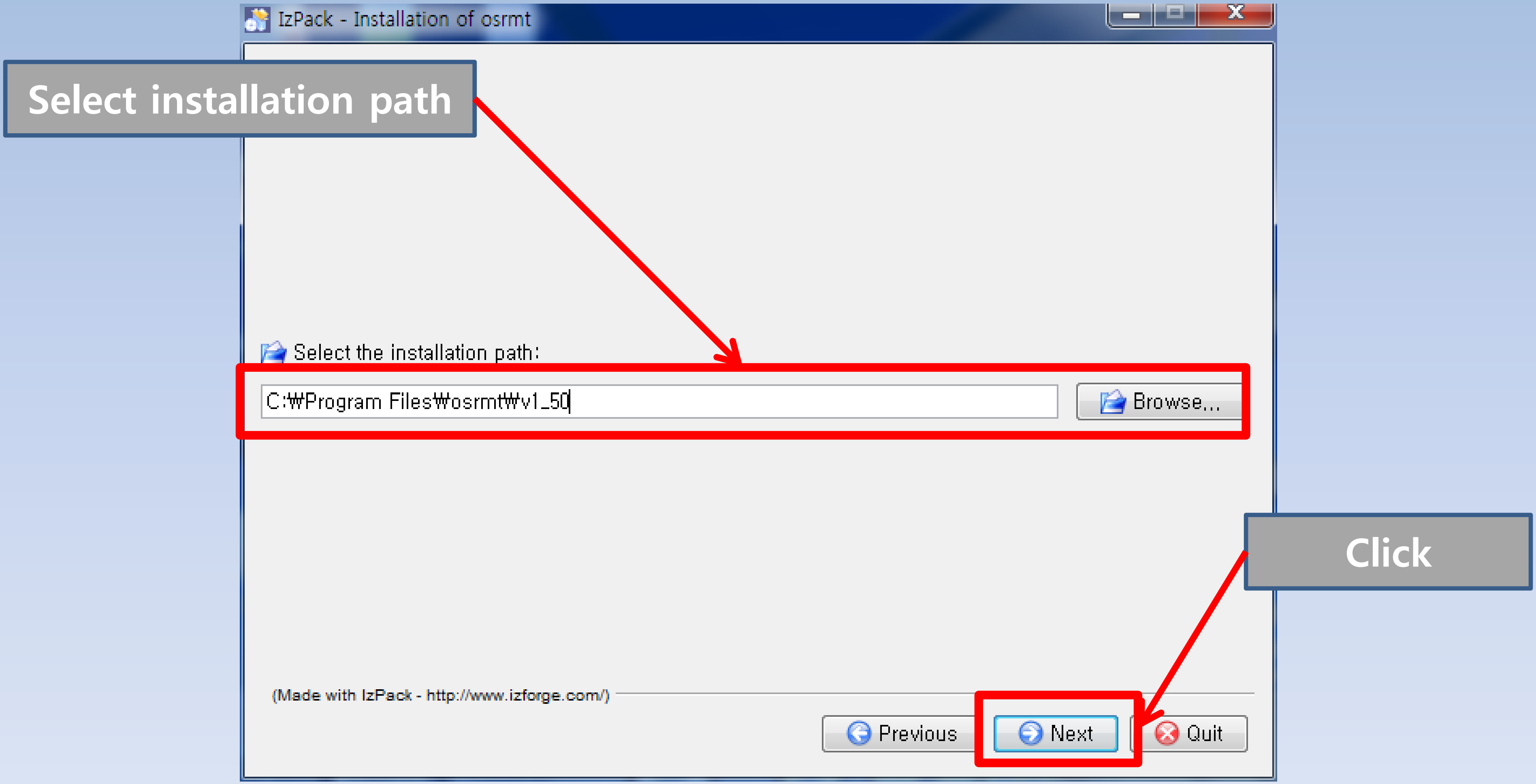

● I accept the terms of this license agreement.

○ I do not accept the terms of this license agreement.

(Made with IzPack - http://www.izforge.com/)

OSRMT Installation



Select installation path

Click

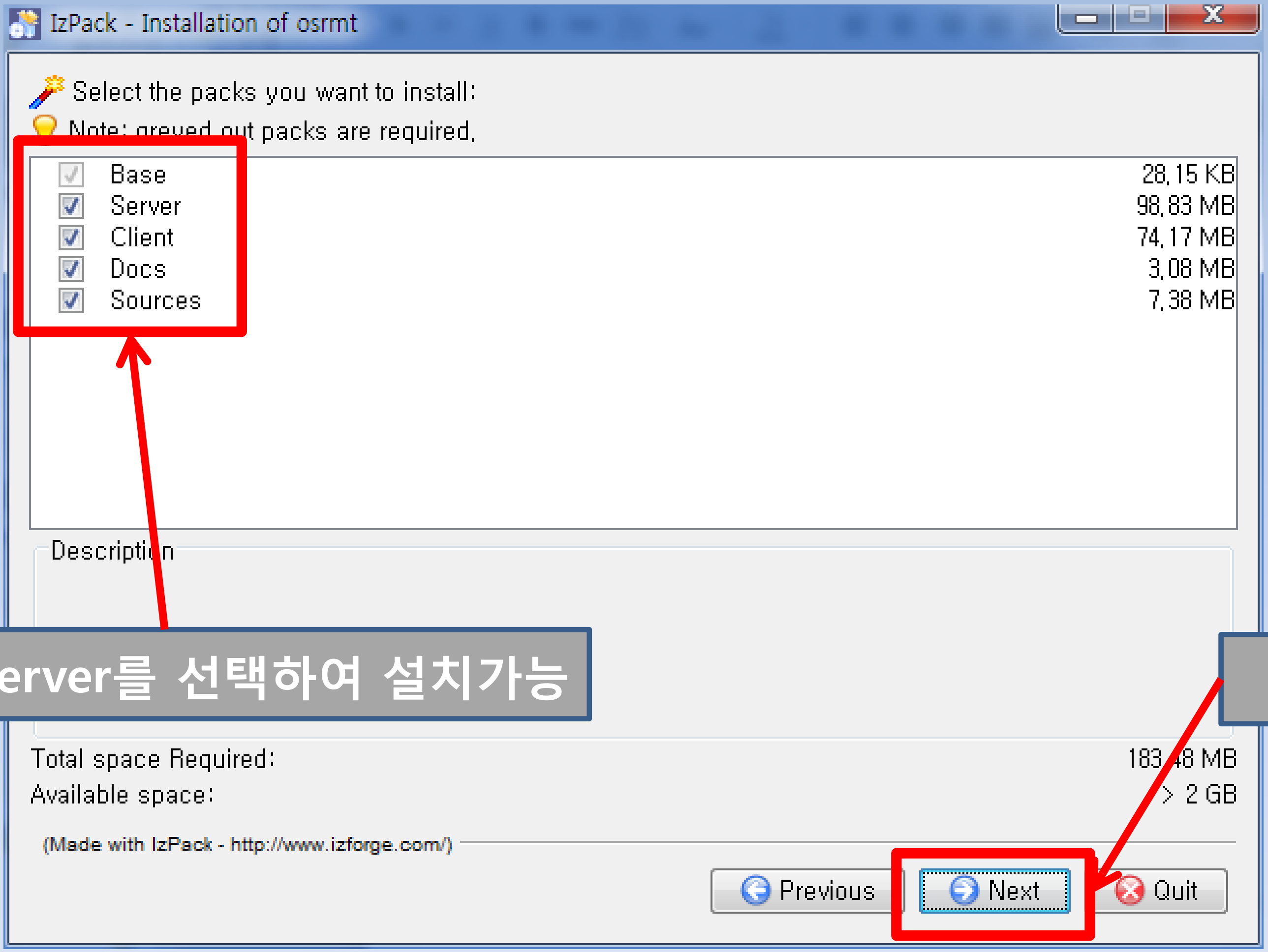
IzPack - Installation of osrmt

Select the installation path:

C:₩Program Files₩osrmt₩v1_50

Browse...
(Made with IzPack - http://www.izforge.com/)
Previous
Next
Quit

OSRMT Installation



IzPack - Installation of osrmt

Select the packs you want to install:

Note: greyed out packs are required.

☑	Base	28.15 KB
☑	Server	98.83 MB
☑	Client	74.17 MB
☑	Docs	3.08 MB
☑	Sources	7.38 MB

Description

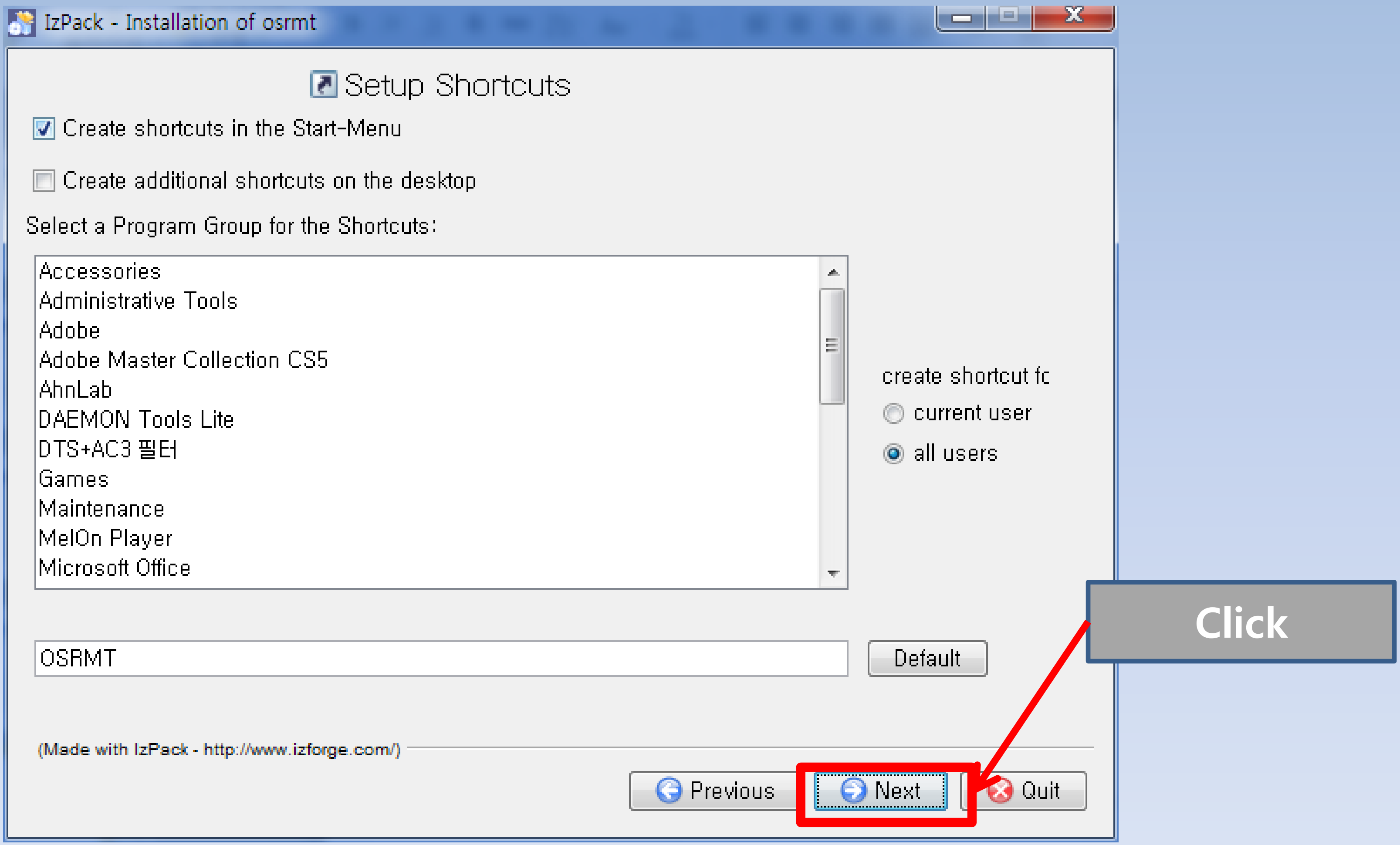
Total space Required:	183.48 MB
Available space:	> 2 GB

(Made with IzPack - http://www.izforge.com/)

Client 와 Server를 선택하여 설치가능

Click

OSRMT Installation



IzPack - Installation of osrmt

Setup Shortcuts

☑ Create shortcuts in the Start-Menu

□ Create additional shortcuts on the desktop

Select a Program Group for the Shortcuts:

Accessories
Administrative Tools
Adobe
Adobe Master Collection CS5
AhnLab
DAEMON Tools Lite
DTS+AC3 필터
Games
Maintenance
MelOn Player
Microsoft Office

create shortcut fc

○ current user

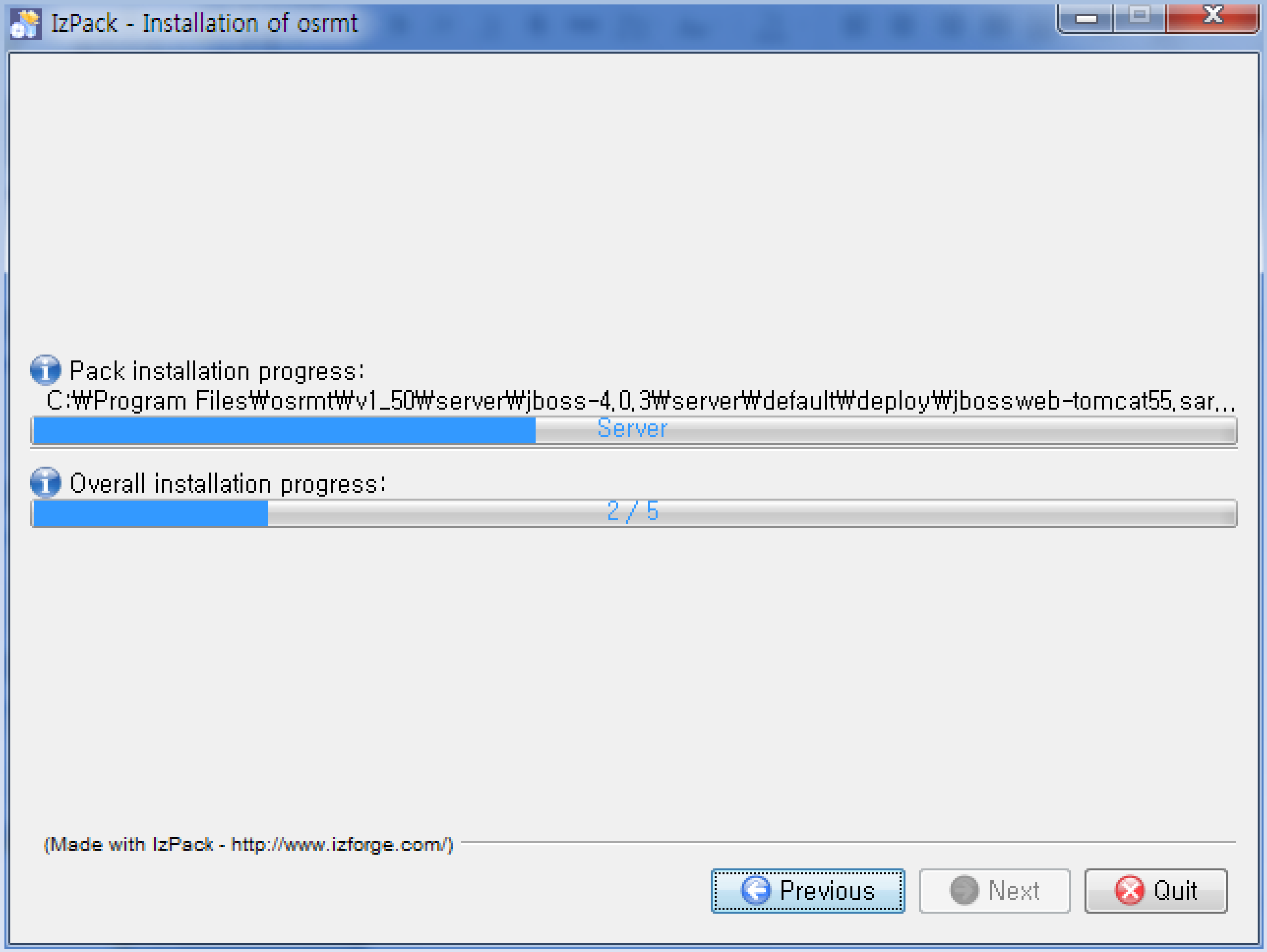
● all users

OSRMT

(Made with IzPack - http://www.izforge.com/)

Click

OSRMT Installation



IzPack - Installation of osrmt

Pack installation progress:

C:₩Program Files₩osrmt₩v1_50₩server₩jboss-4.0.3₩server₩default₩deploy₩jbossweb-tomcat55.sar...

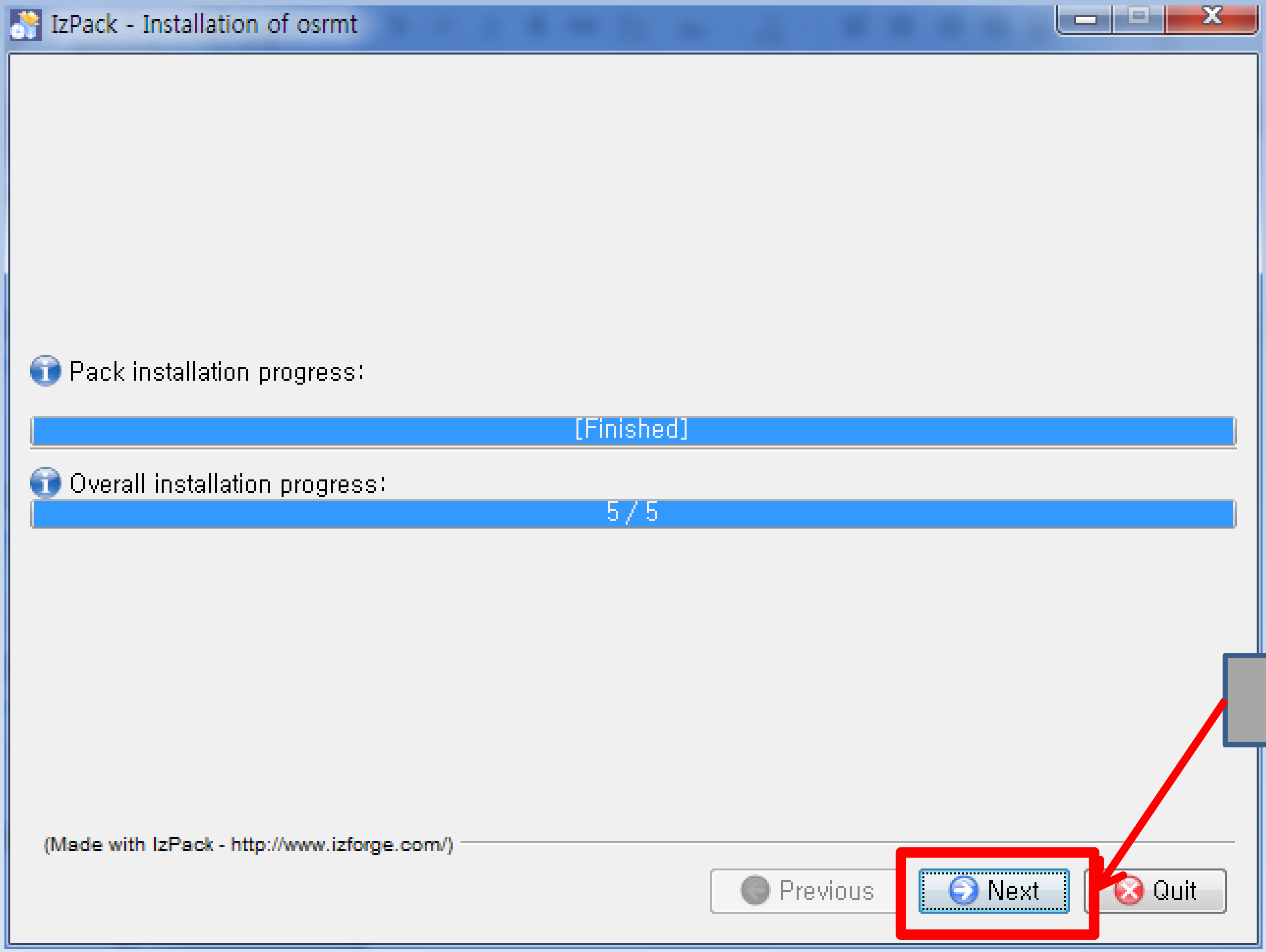
Server

Overall installation progress:

2 / 5

(Made with IzPack - http://www.izforge.com/)

OSRMT Installation



IzPack - Installation of osrmt

Pack installation progress:

[Finished]

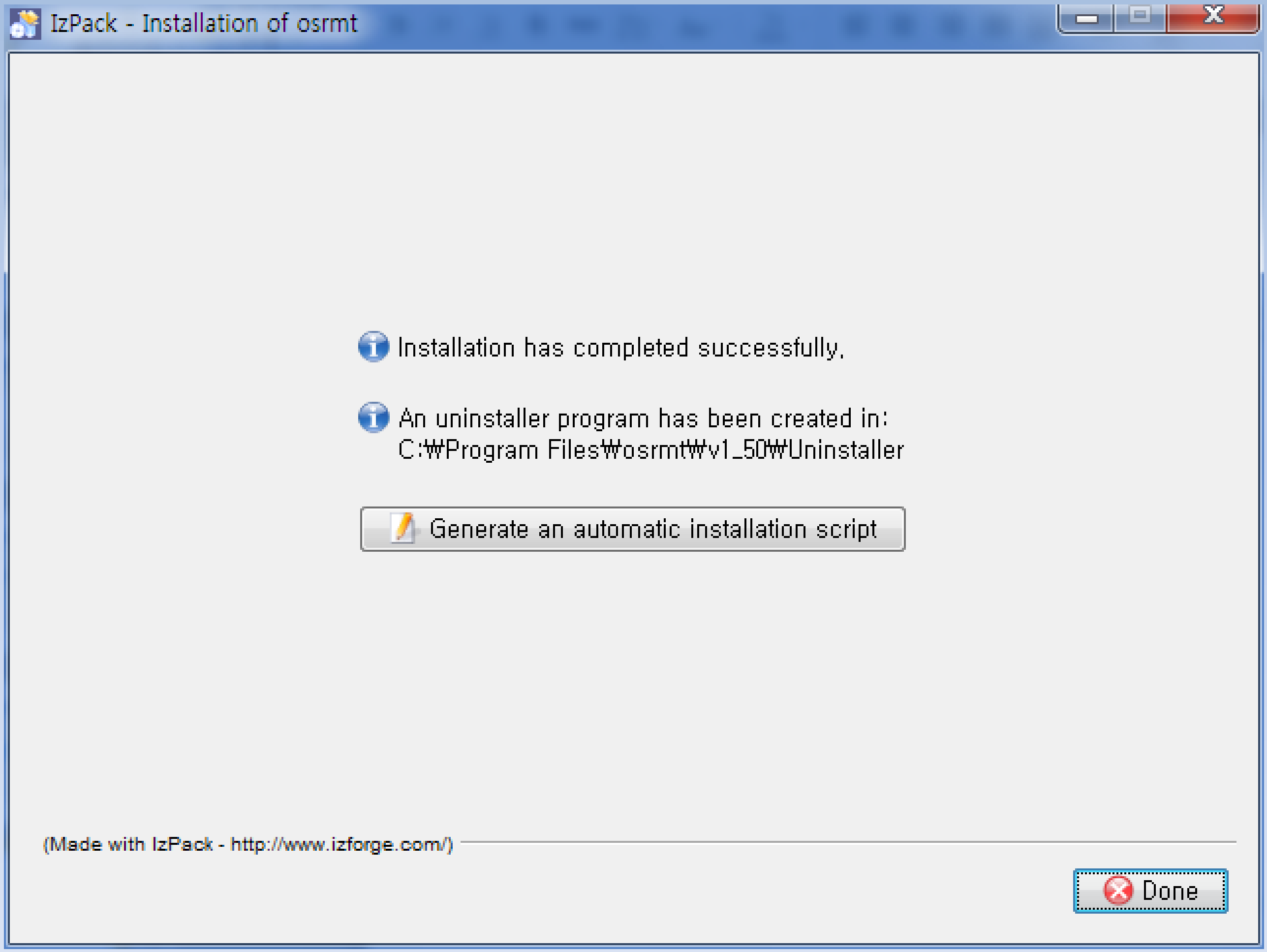
Overall installation progress:

5 / 5

(Made with IzPack - http://www.izforge.com/)

Click

OSRMT Installation



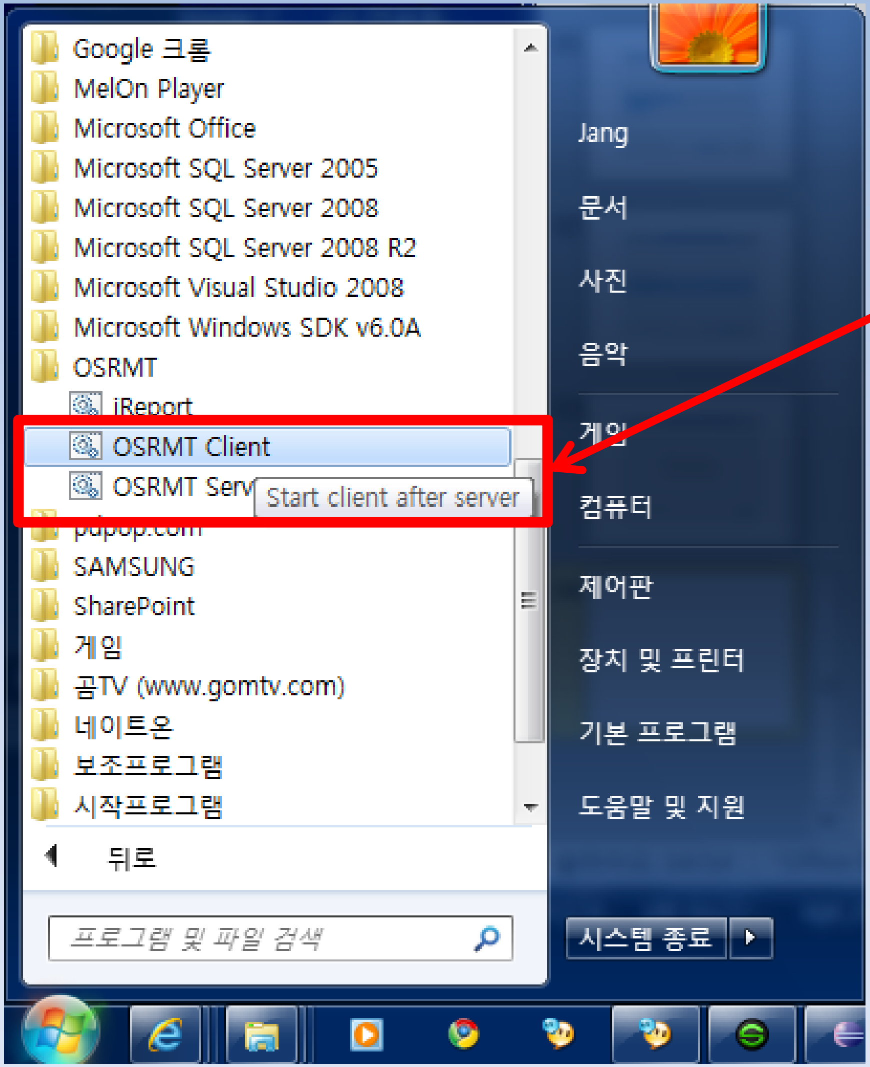
IzPack - Installation of osrmt

Installation has completed successfully.

An uninstaller program has been created in:
C:₩Program Files₩osrmt₩v1_50₩Uninstaller

Generate an automatic installation script
(Made with IzPack - http://www.izforge.com/)
Done

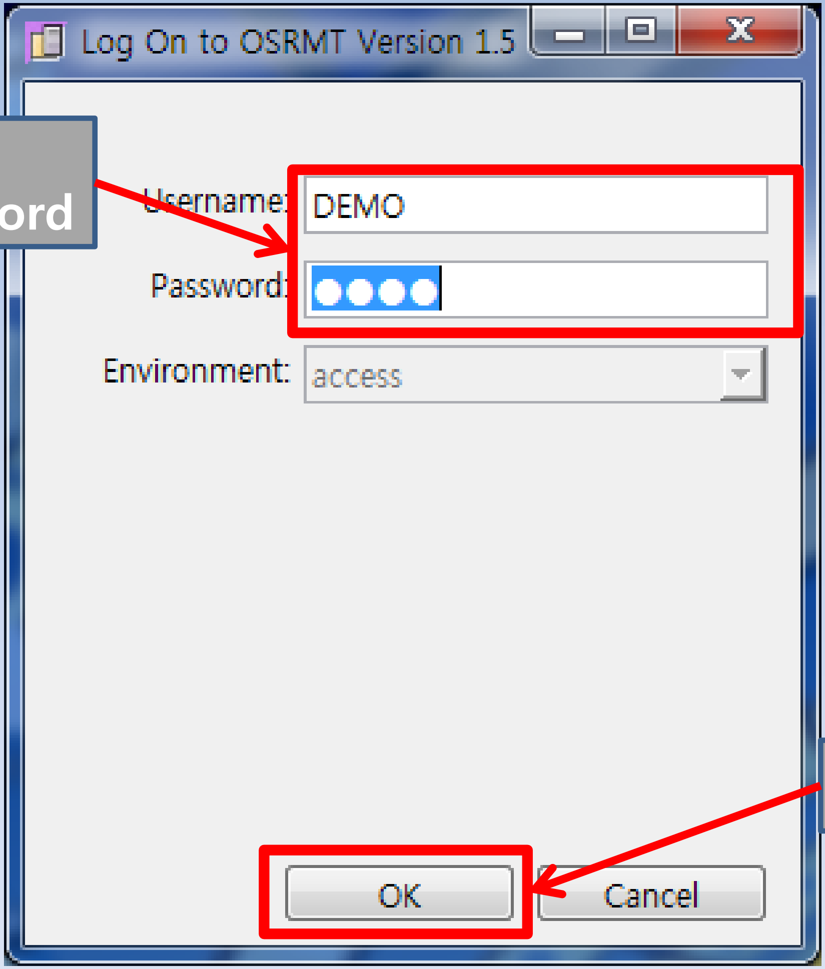
OSRMT Usage



Start client after server

Click

OSRMT Usage


Log On to OSRMT Version 1.5

Username: DEMO

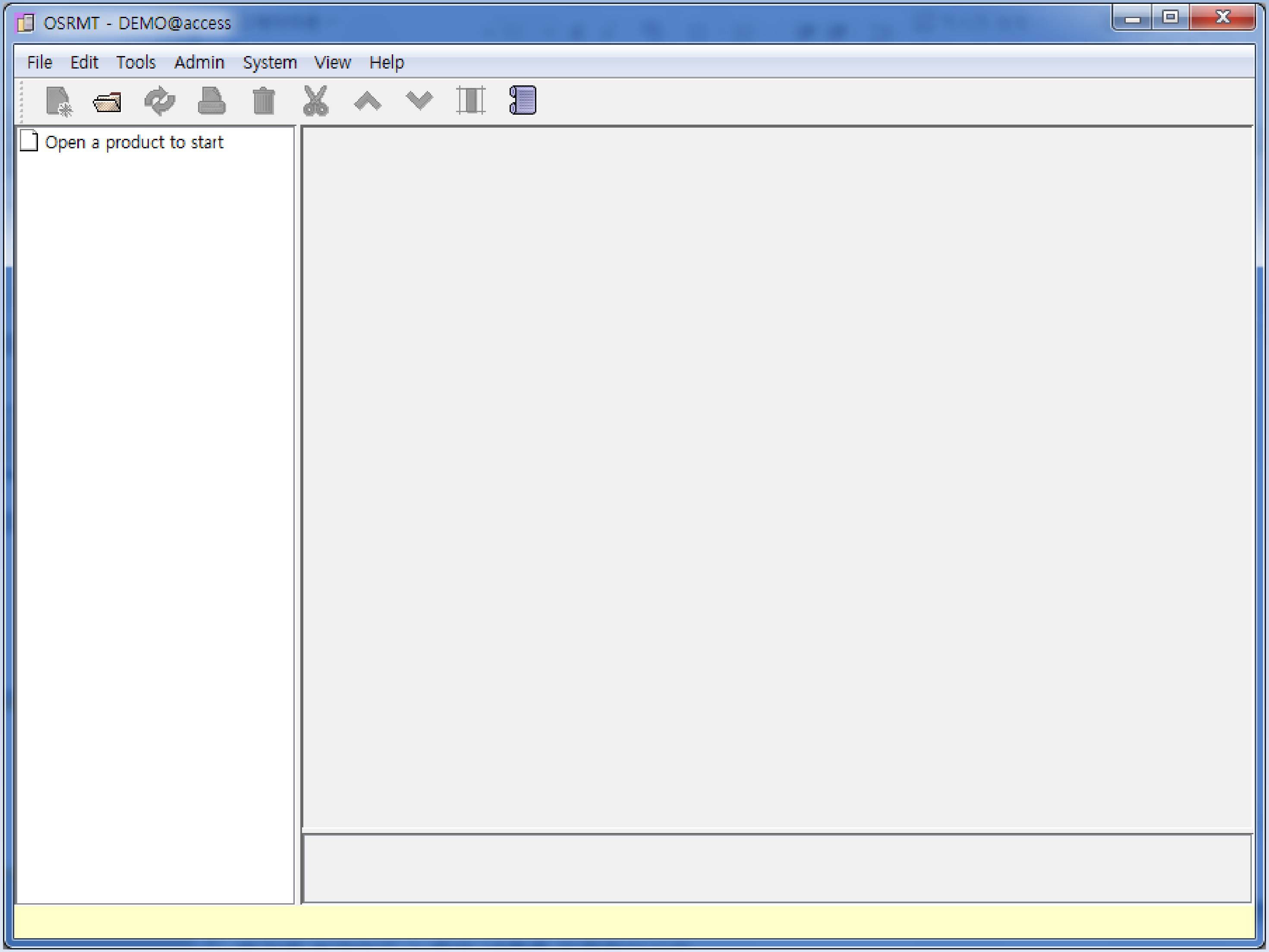
Password: ●●●●

Environment: access

Input
Username & password

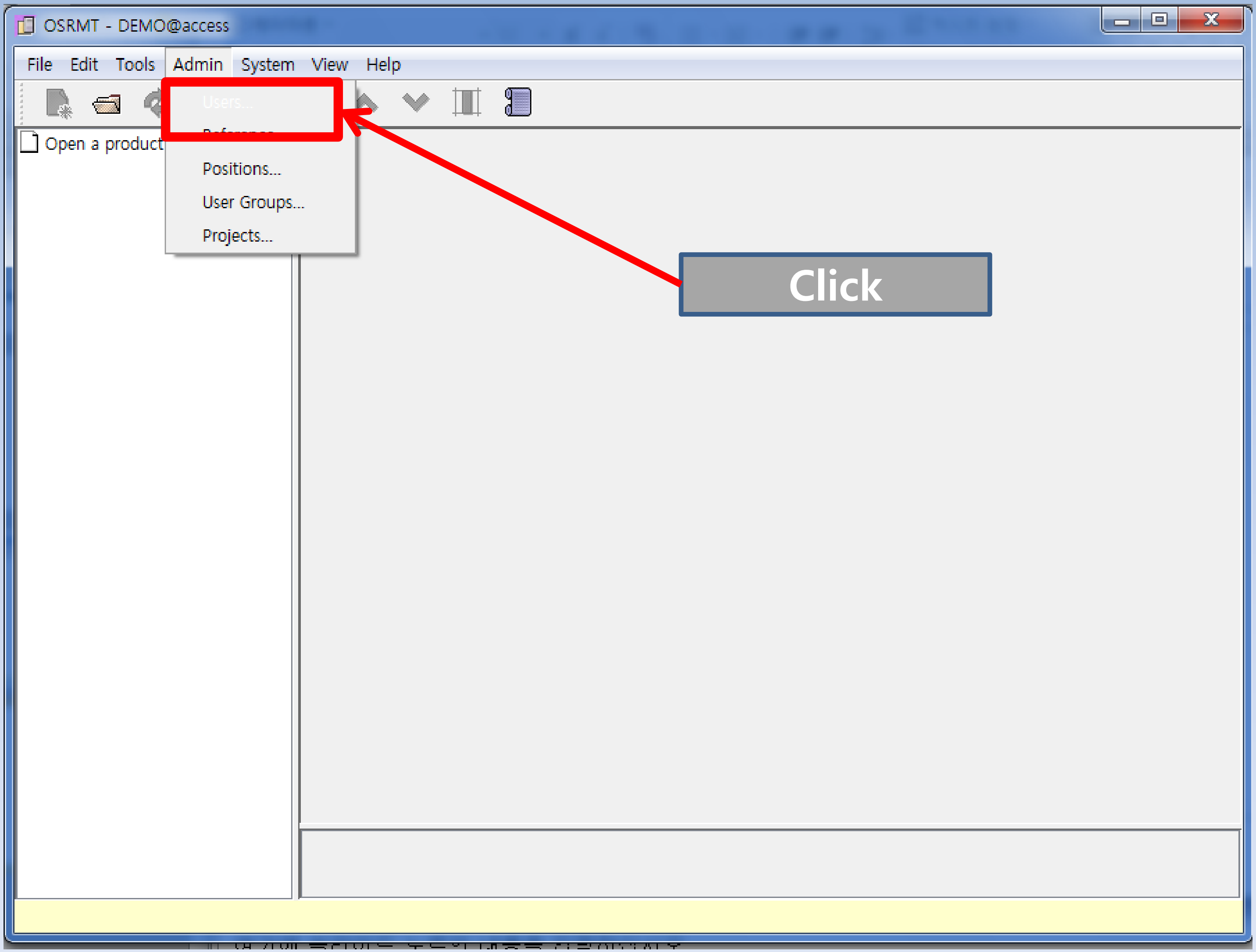
Click

OSRMT Usage



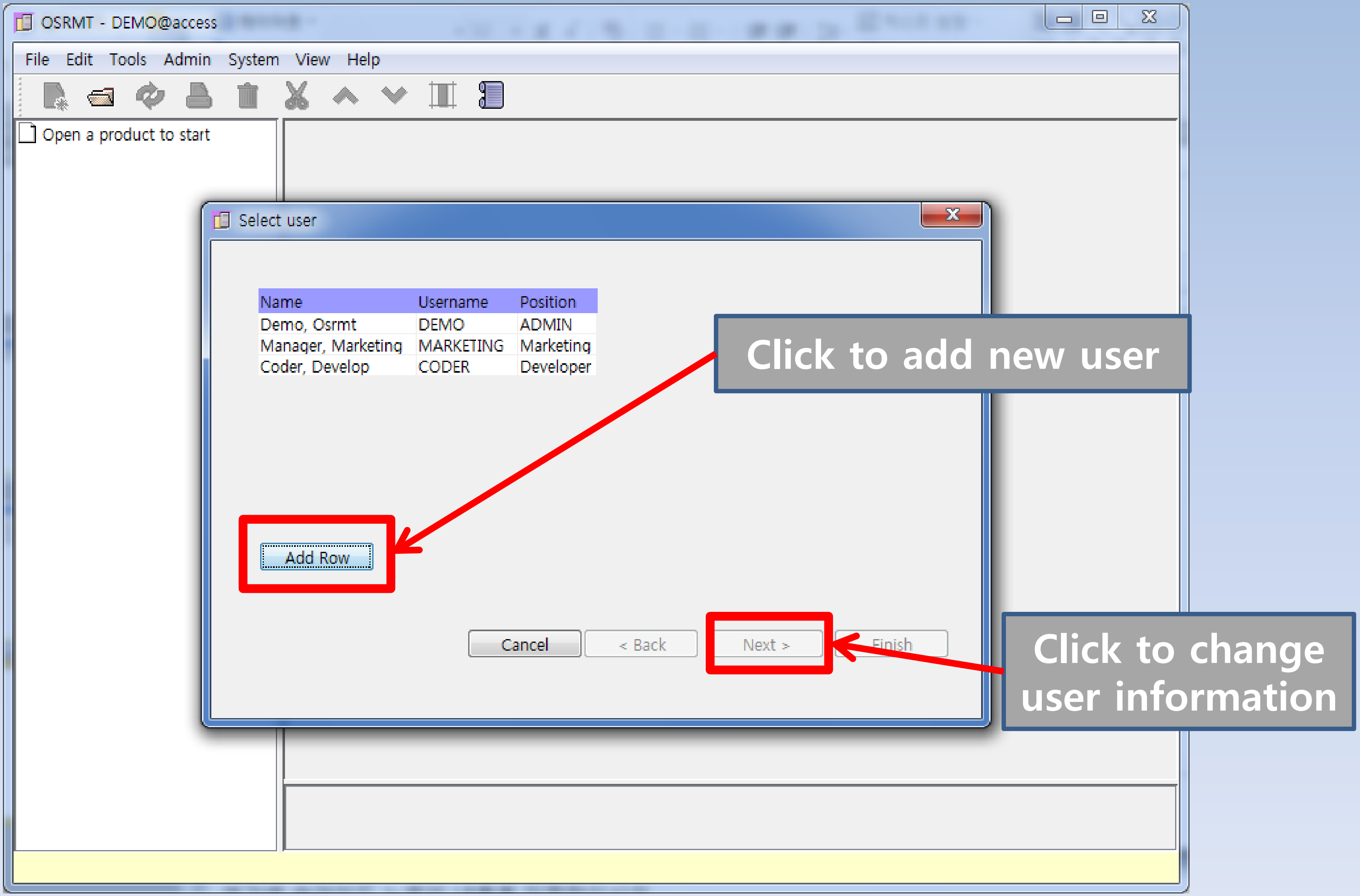
Open a product to start

OSRMT Usage



Click

OSRMT Usage

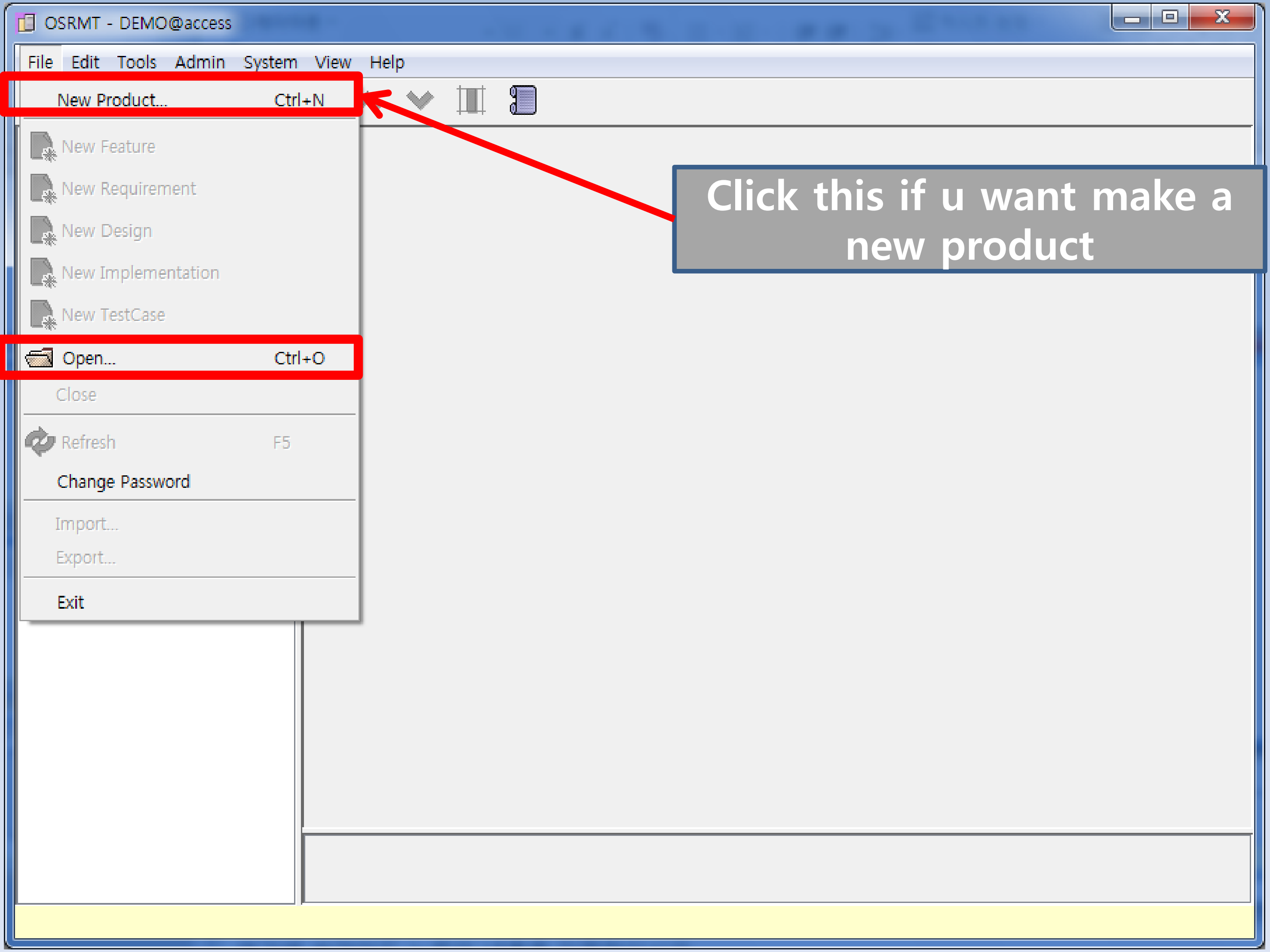


Name	Username	Position
Demo, Osrmt	DEMO	ADMIN
Manager, Marketing	MARKETING	Marketing
Coder, Develop	CODER	Developer

Click to add new user

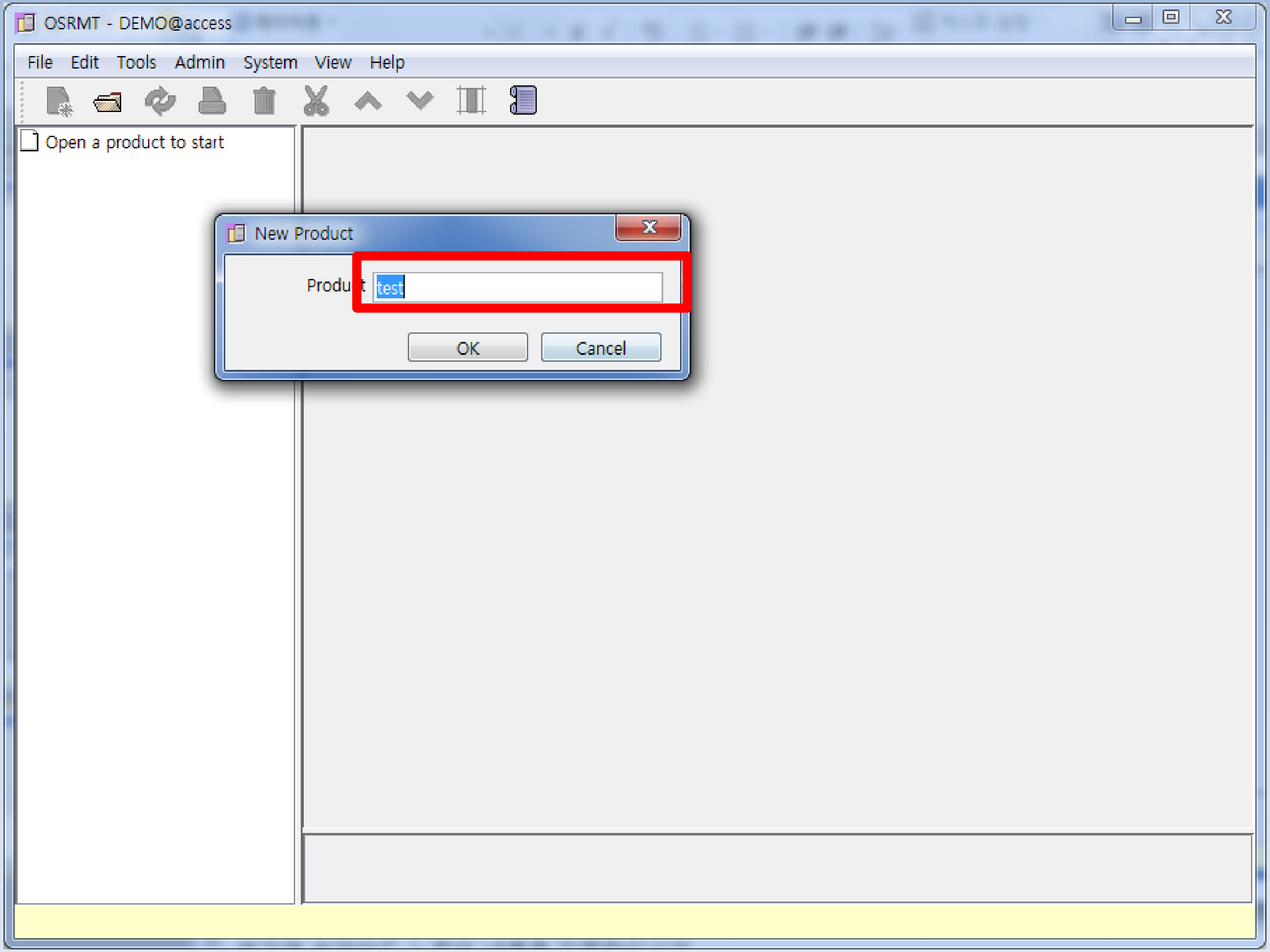
Click to change user information

OSRMT Usage



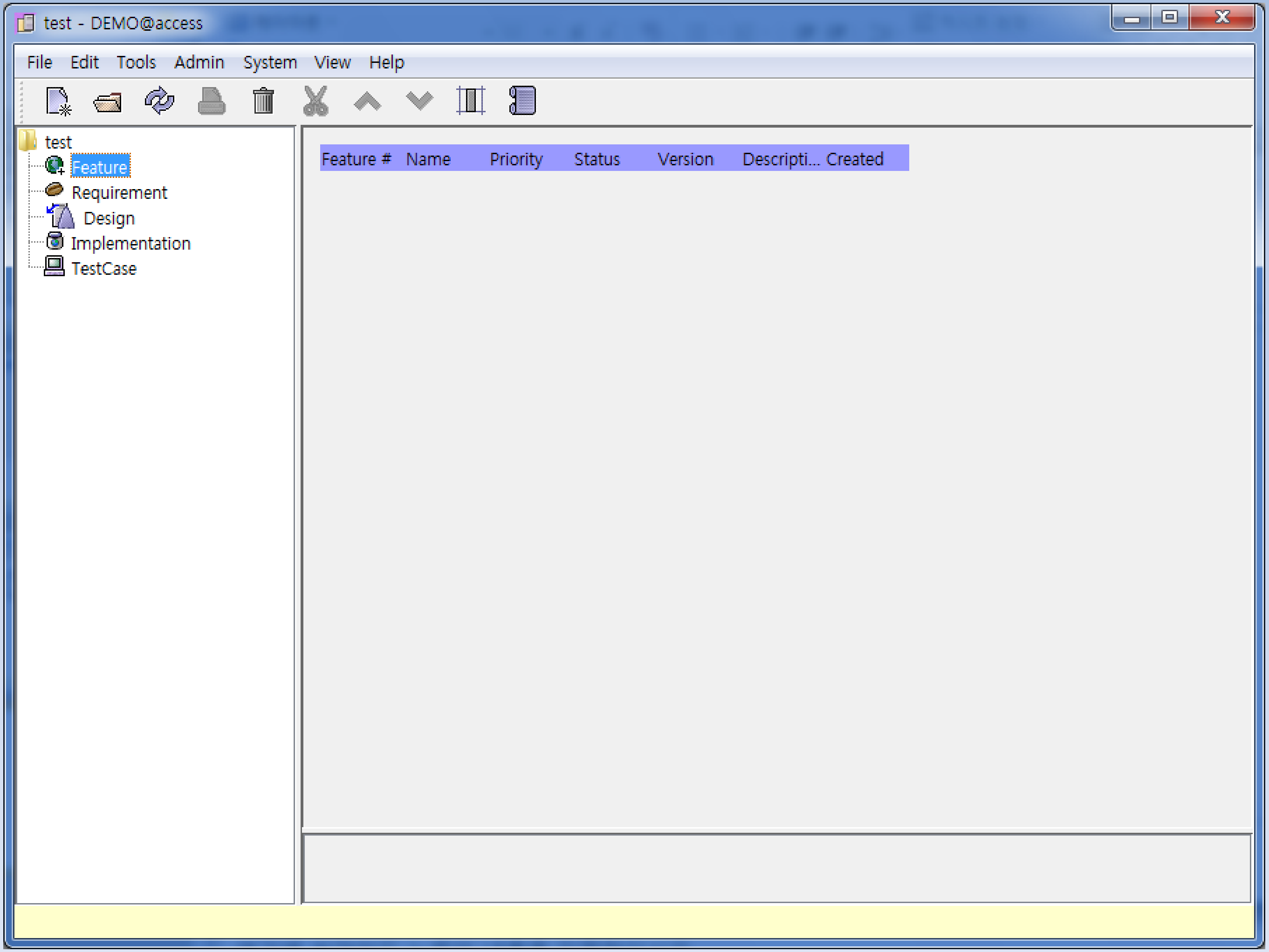
Click this if u want make a new product

OSRMT Usage



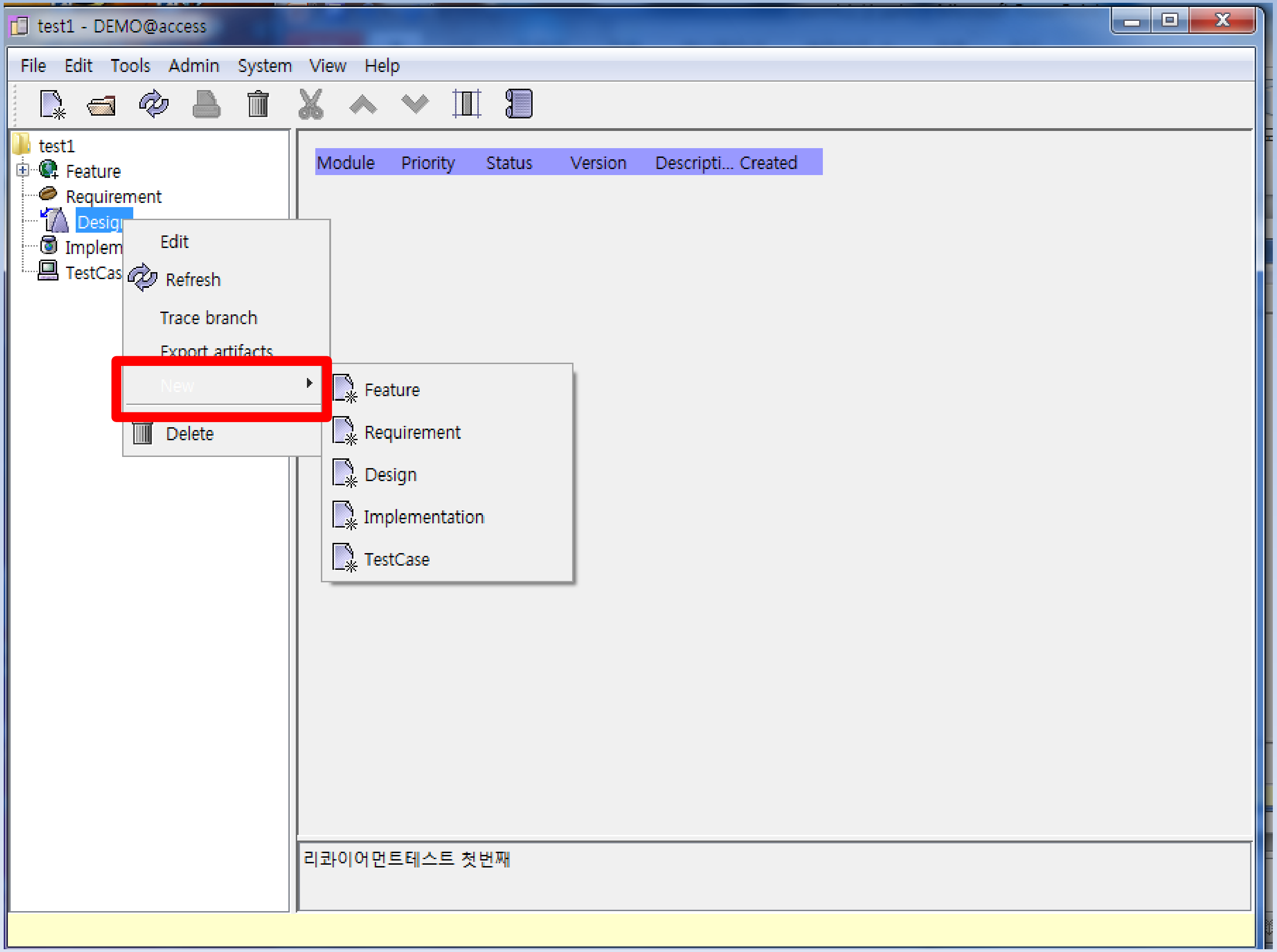
Product test

OSRMT Usage



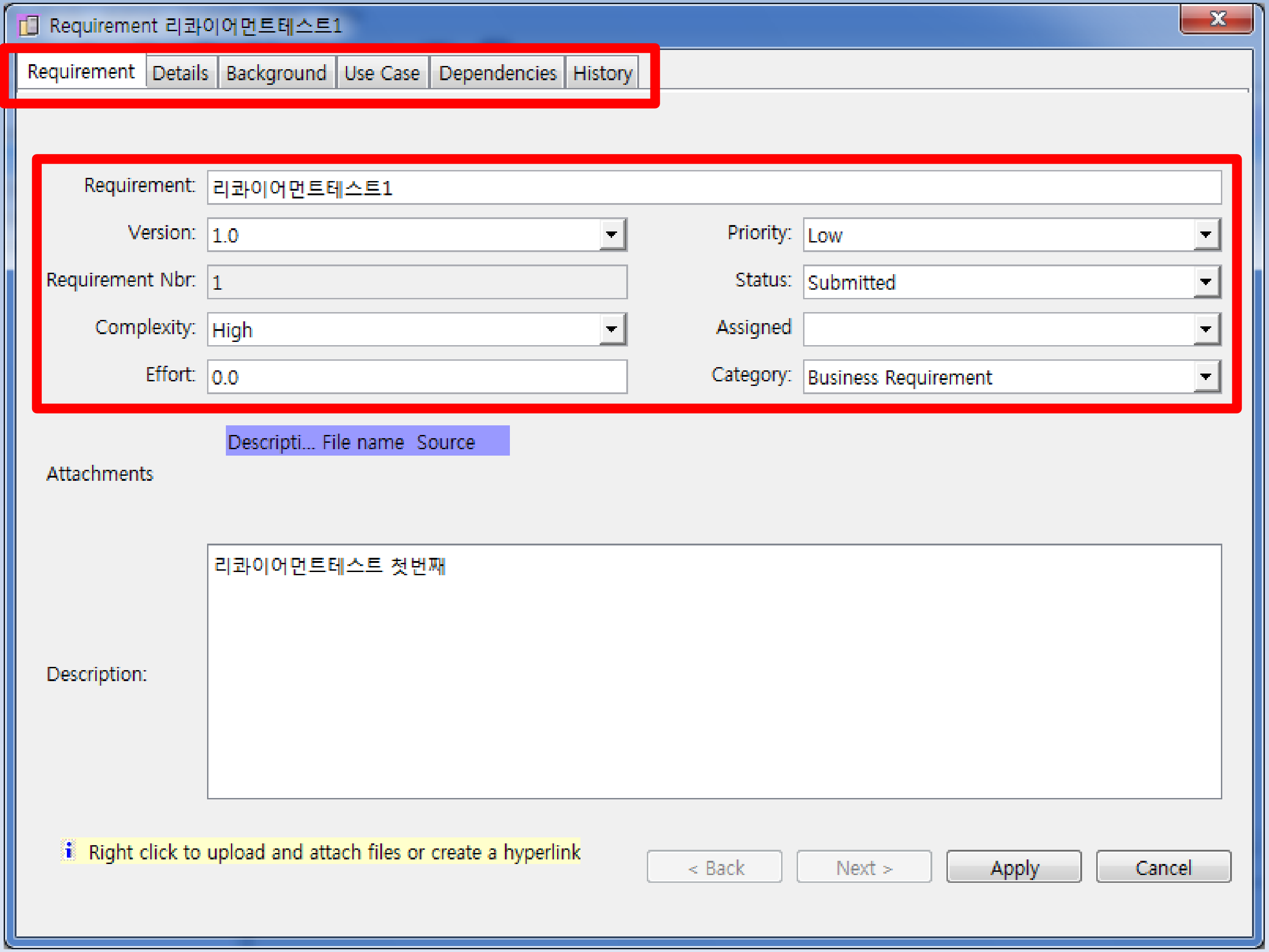
Feature #	Name	Priority	Status	Version	Descripti...	Created

OSRMT Usage



리콰이어먼트테스트 첫번째

OSRMT Usage



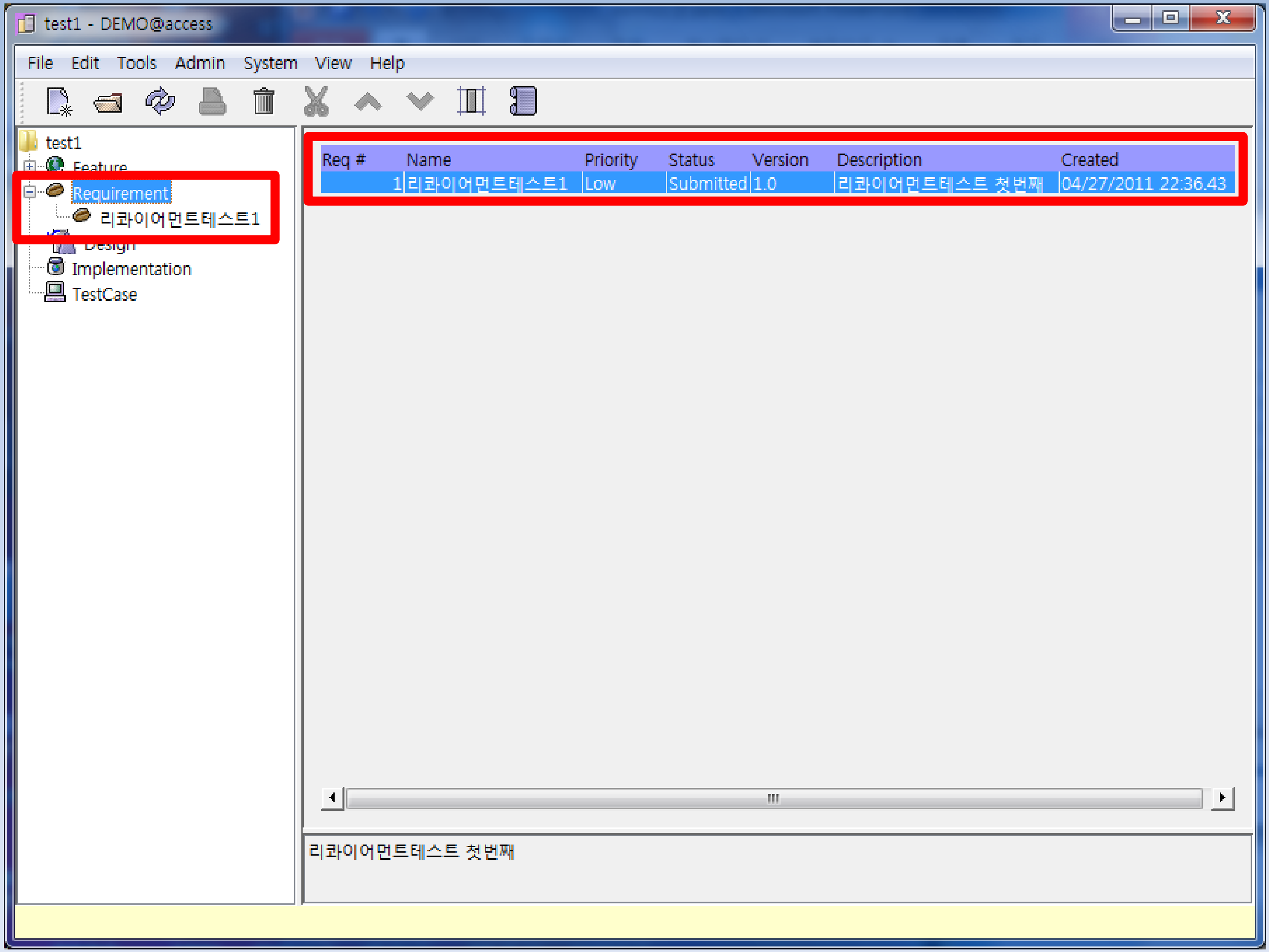
Requirement:	리콰이어먼트테스트1		
Version:	1.0	Priority:	Low
Requirement Nbr:	1	Status:	Submitted
Complexity:	High	Assigned	
Effort:	0.0	Category:	Business Requirement

Attachments

Description: 리콰이어먼트테스트 첫번째

Right click to upload and attach files or create a hyperlink

OSRMT Usage



Req #	Name	Priority	Status	Version	Description	Created
1	리콰이어먼트테스트1	Low	Submitted	1.0	리콰이어먼트테스트 첫번째	04/27/2011 22:36.43

리콰이어먼트테스트 첫번째

Conclusion

- JFeature
  - Java Eclipse 개발자에게 편리
  - 다수가 아닌 개인으로 개발할 때 좋음
  - Requirements의 충족을 Unit Test로 확인하고 싶을 때

- OSRMT
  - 다수의 개발자가 개발할 때 편리
  - 고객으로부터 Requirements가 자주 변할 때 좋음
  - 간편하면서 강력한 Requirements Management 가 필요할 때

감사합니다.