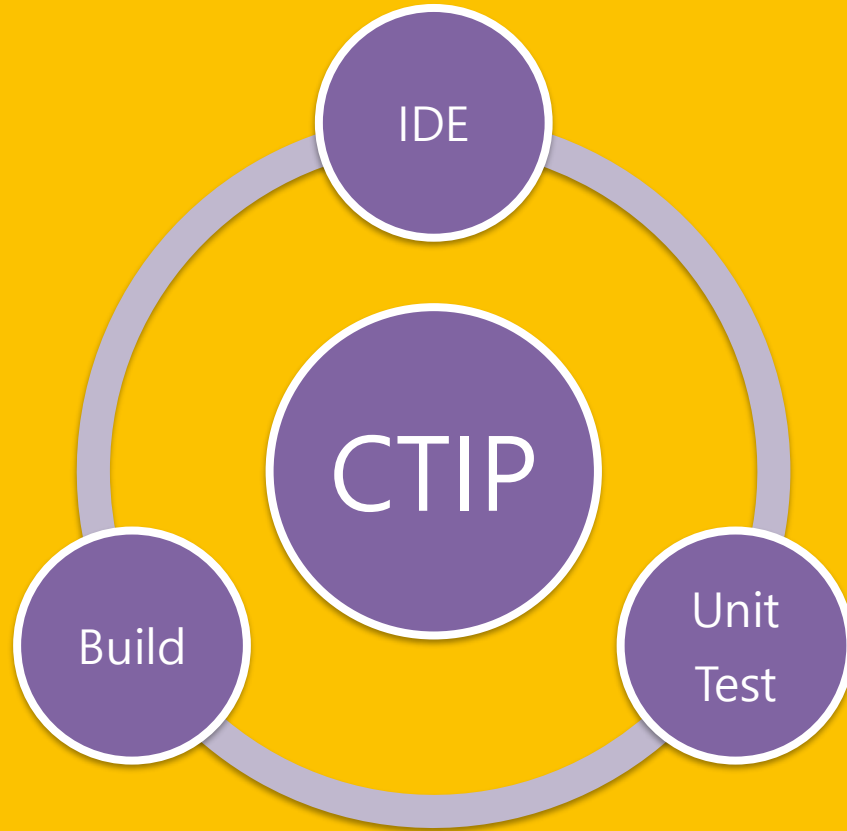




Introduction to CTIP

고예은 201410373, 김수현 201411266, 김아름 201411268

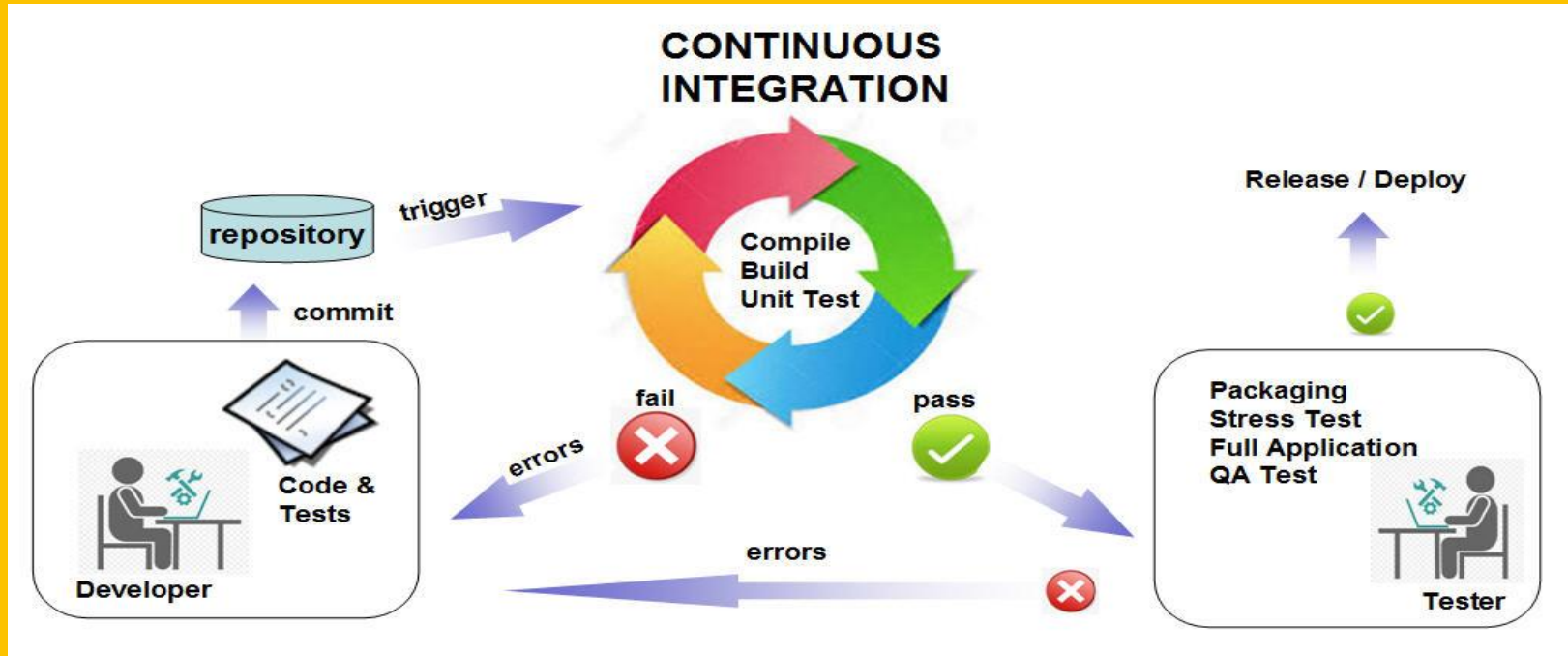
Table of Contents



What is CTIP?



Continuous Test & Integration Platform



IDE (Integrated development environment)



Comparison



- Widest used IDE
- Designed to fit the needs of large development projects



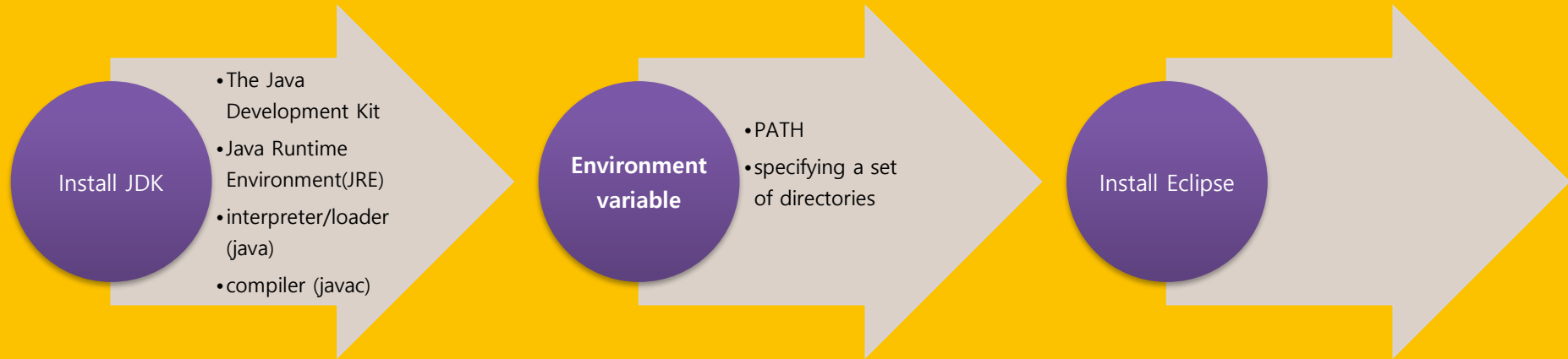
- Database support (Java DB, MySQL, PostgreSQL, and Oracle)



- Support for a variety of languages
- enterprise edition of IntelliJ



Install Eclipse in Windows 10



IDE



ORACLE®

Install JDK(Java Development Kit)

<http://www.oracle.com/technetwork/java/javase/downloads/index.html>

Download



Install

Oracle Technology Network / Java / Java SE / Downloads

Overview Downloads Documentation Community Technologies Training

Java SE Downloads

DOWNLOAD **DOWNLOAD**

Java Platform (JDK) 9 **DOWNLOAD**

NetBeans with JDK 8 **DOWNLOAD**

Standard Edition

JDK **DOWNLOAD**

Server JRE **DOWNLOAD**

JRE **DOWNLOAD**

Which Java package do I need?

- Software Developers: JDK (Java SE Development Kit). For Java Developers. Includes a complete JRE plus tools for developing, debugging, and monitoring Java applications.
- Administrators running applications on a server: Server JRE (Server Java Runtime Environment). For running Java applications on servers. Includes tools for JVM monitoring and tool commonly required for server applications, but does not include browser.

Oracle Technology Network / Java / Java SE / Downloads

Overview Downloads Documentation Community Technologies Training

Java SE Development Kit 9 Downloads

This JDK includes tools useful for developing and testing programs written in the Java programming language and running on the Java platform.

See also:

- Java Developer Newsletter: From your Oracle account, select Subscriptions, expand Technology, and subscribe to Java.
- Java Developer Day: hands-on workshops (free) and other events.
- Java Magazine

JDK 9.0.4 checklist

Product	File Description	File Size	Download
Linux	jdk-9.0.4-linux-i586_bin.tar.gz	335.21 MB	DOWNLOAD
Linux	jdk-9.0.4-linux-x64_bin.tar.gz	338.21 MB	DOWNLOAD
macOS	jdk-9.0.4-macos-x64_bin.tar.gz	382.11 MB	DOWNLOAD
Windows	jdk-9.0.4-windows-i586_bin.exe	375.94 MB	DOWNLOAD
Windows	jdk-9.0.4-windows-x64_bin.exe	375.94 MB	DOWNLOAD
Solaris SPARC	jdk-9.0.4-solaris-sparc64_bin.tar.gz	296.67 MB	DOWNLOAD

Java(TM) SE Development Kit 9.0.4 (64-bit) - Setup

Welcome to the Installation Wizard for Java SE Development Kit 9.0.4

This wizard will guide you through the installation process for the Java SE Development Kit 9.0.4.

The Java Mission Control profiling and diagnostics tools suite is now available as part of the JDK.

Next > **Cancel**

Java Setup - Progress

Status: Installing Java

ATMs, Smartcards, POS Terminals, Blu-ray Players, PCs, Set Top Boxes, Servers, Switches, Routers, Systems, Programmable Logic Devices, Control Units

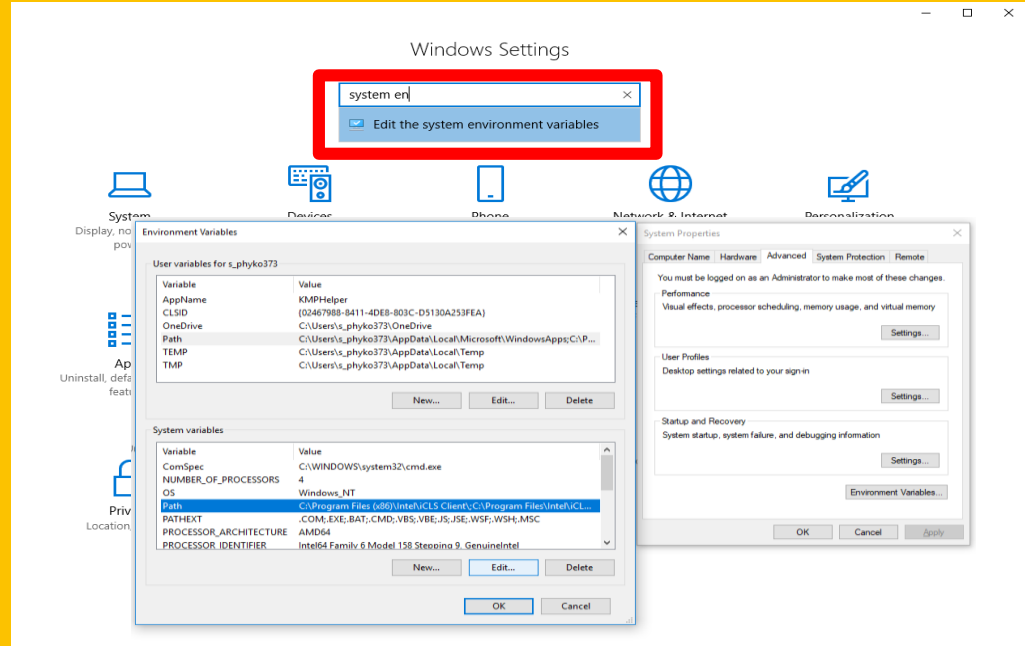
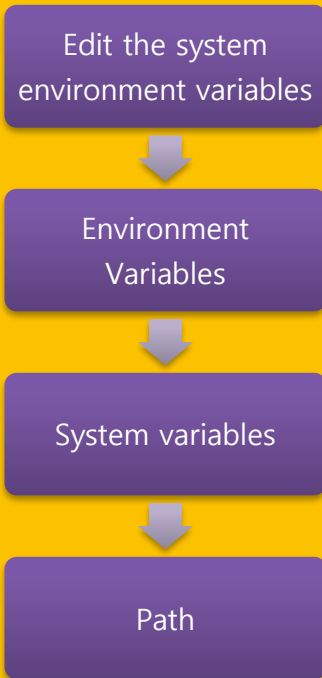
3 Billion Devices Run Java

Java #1 Development Platform ORACLE

Menu > Java > Java EE > Download



System Environment



Setting > Search (system en~, 환경~) > Edit the system environment variables



System Environment

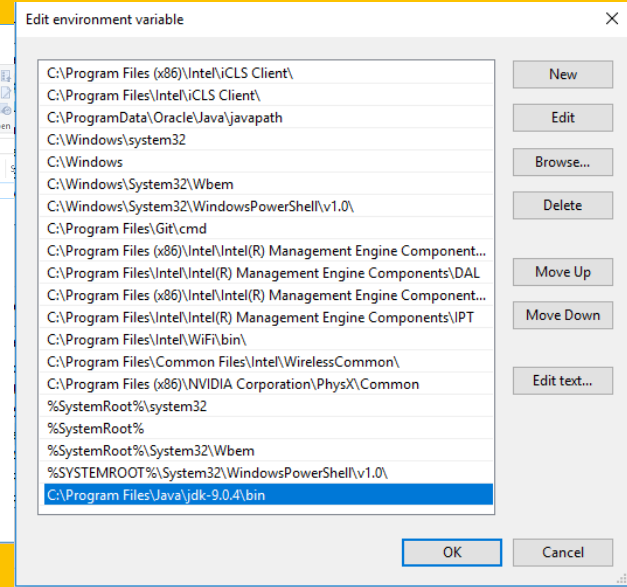
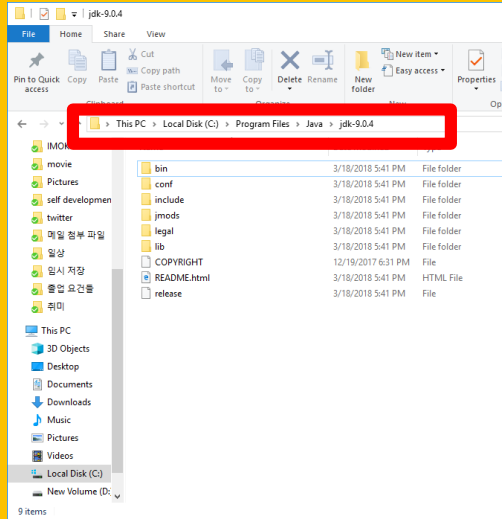
Edit environment variables



Add path
"C:\W...WJavaWjdk...Wbin"



cmd "javac -version"



```
C:\Users\s_phyko373>javac -version  
javac 9.0.4
```


IDE



Install Eclipse



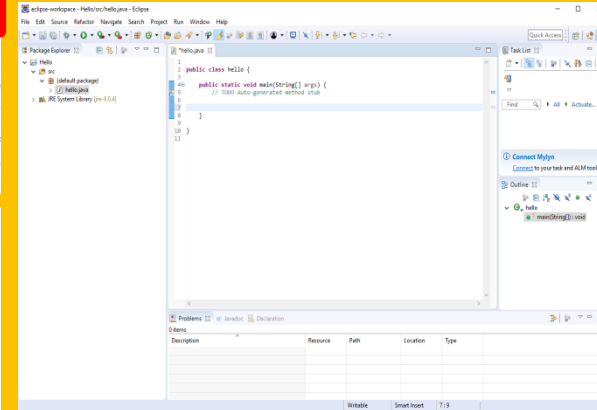
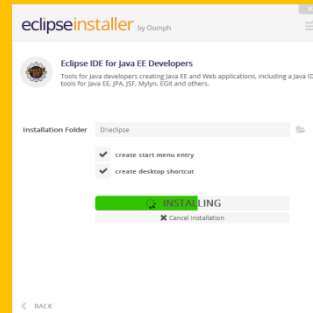
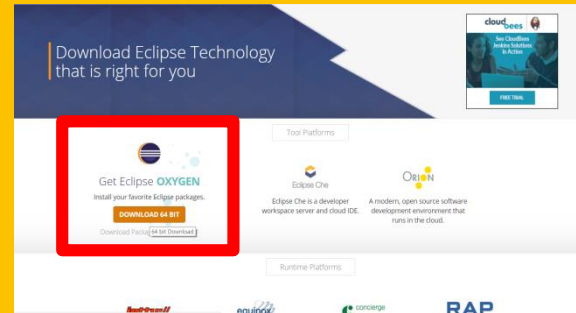
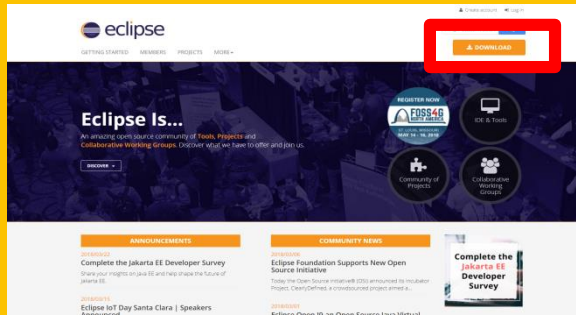
Download



Install



Check!





- a unit testing framework for the Java programming language

Unit Test - A method by which **individual units** are tested if they are fit for use

linked as a [JAR](#) at compile-time

- under package junit.framework for JUnit 3.8 and earlier
- under package org.junit for JUnit 4 and later



- Your test program should import org.junit.*

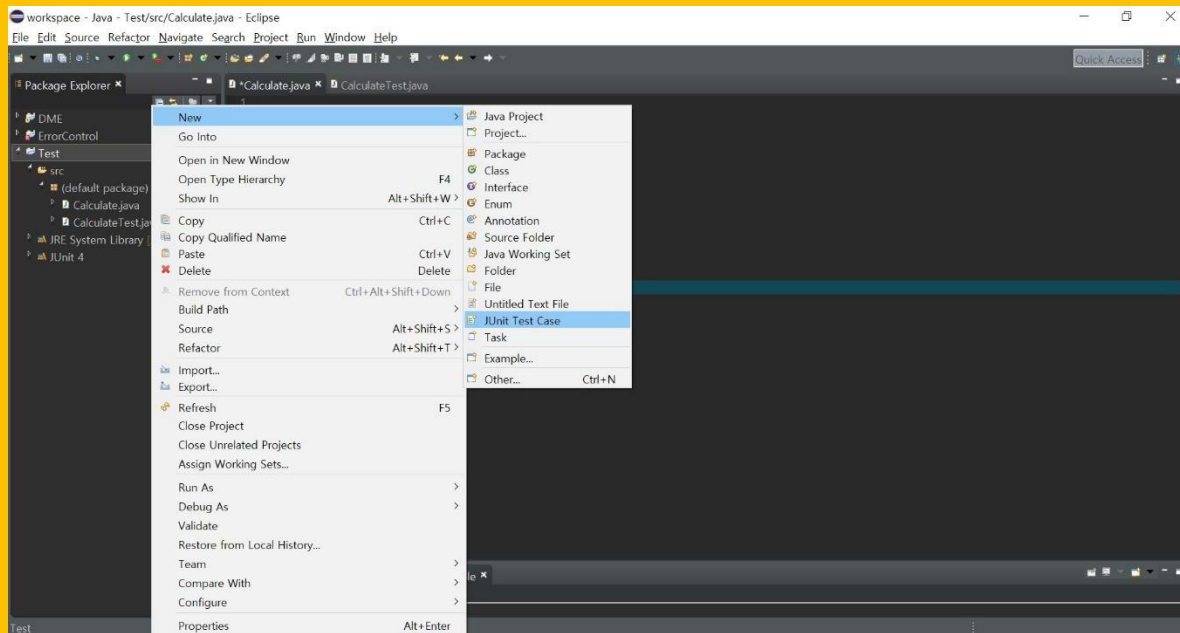
```
^TestCase.java x
1 import org.junit.*;
2
3 public class FoobarTest {
4     @BeforeClass
5     public static void setUpClass() throws Exception {
6         // Code executed before the first test method
7     }
8
9     @Before
10    public void setUp() throws Exception {
11        // Code executed before each test
12    }
13
14    @Test
15    public void testOneThing() {
16        // Code that tests one thing
17    }
18
19    @Test
20    public void testAnotherThing() {
21        // Code that tests another thing
22    }
23
24    @After
25    public void tearDown() throws Exception {
26        // Code executed after each test
27    }
28
29    @AfterClass
30    public static void tearDownClass() throws Exception {
31        // Code executed after the last test method
32    }
33 }
```



- org.junit.Assert
 - Provides a set of **assertion methods** useful for writing tests
 - assertEquals(): asserts that two items are equals
 - assertFalse(): asserts that a condition is false
 - assertTrue(): asserts that a condition is true
 - assertNotNull(): asserts that an object isn't null
 - assertNull(): asserts that an object is null



[프로젝트 이름] 우클릭 → New → Junit Test Case





New JUnit Test Case

JUnit Test Case

The use of the default package is discouraged.

New JUnit 3 test New JUnit 4 test

Source folder:

Package:

Name:

Superclass:

Which method stubs would you like to create?

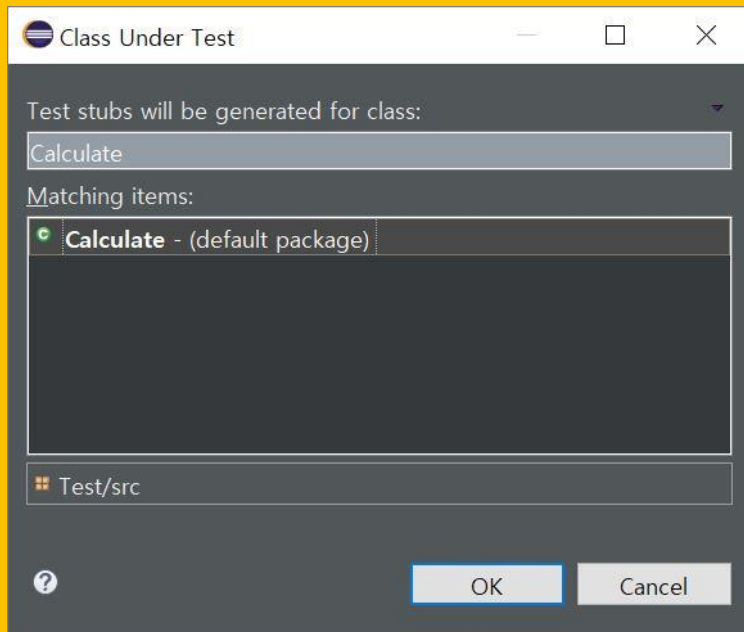
setUpBeforeClass() tearDownAfterClass()
 setUp() tearDown()
 constructor

Do you want to add comments? (Configure templates and default value [here](#))
 Generate comments

Class under test:

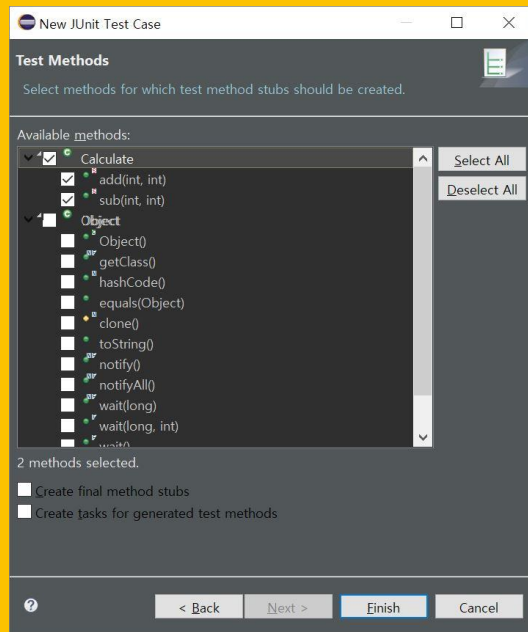


Class Under Test → browse → [클래스 이름] 검색 → OK





테스트할 메소드 선택 → Finish



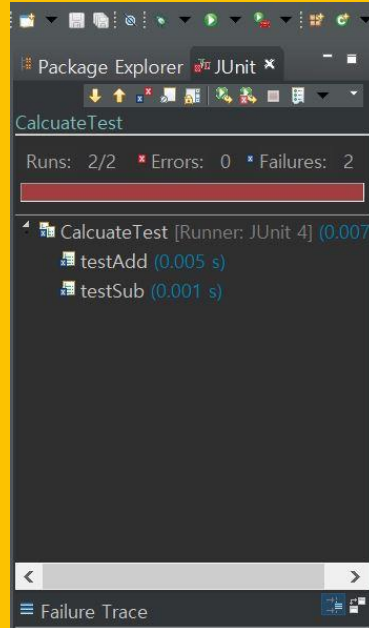


자동으로 생성된 코드

```
1 import static org.junit.Assert.*;
4
5 public class CalculateTest {
6
7     @Test
8     public void testAdd() {
9         fail("Not yet implemented");
10    }
11
12
13    @Test
14    public void testSub() {
15        fail("Not yet implemented");
16    }
17 }
18
```



Runs / Errors / Failures



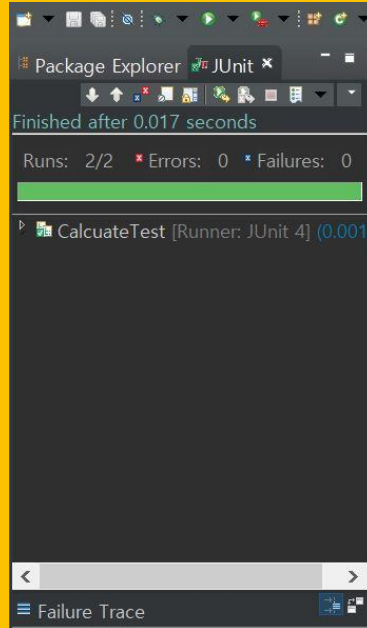


테스트 코드 구현

```
Calculate.java  CalculateTest.java x
1 import static org.junit.Assert.*;
4
5 public class CalculateTest {
6
7     @Test
8     public void testAdd() {
9         Calculate test = new Calculate();
10        int num1 = 5;
11        int num2 = 3;
12        int actual = 0;
13        int expected = 8;
14        actual = test.add(num1, num2);
15        assertEquals(actual, expected, 0);
16    }
17
18    @Test
19    public void testSub() {
20        Calculate test = new Calculate();
21        int num1 = 5;
22        int num2 = 3;
23        int actual = 0;
24        int expected = 2;
25        actual = test.sub(num1, num2);
26        assertEquals(actual, expected, 0);
27    }
28
29 }
30
```



Run 결과



Build Environment



소스코드 파일을 실행할 수 있는 소프트웨어 형태로 변환하는 과정

컴파일도 빌드의 단계 중 하나

소프트웨어 생성, 테스트, 배포, 품질분석 등 일련의 과정 집합

자동화된 절차에 따라 수행



빌드 자동화 툴

Ant와 Maven의 장점 통합

DSL을 기반으로 하여 XML 기반 툴보다 코드가 간결함

안드로이드 빌드 시스템에 사용됨



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Gradle Build Tool

Docs Explore Training News Services Try Gradle Enterprise

Accelerate developer productivity

From mobile apps to microservices, from small startups to big enterprises, Gradle helps teams build, automate and deliver better software, faster.

1. Install Gradle → 2. Get Started Guides → 3. Free Training

Gradle



Install

Getting Started Resources

The Gradle team offers free [introductory training](#) and [advanced](#)

There are many [Gradle tutorials](#) available to help you get started, and we also include many [working samples](#) for which guides are not yet

v4.6

Feb 28, 2018

- [Download: binary-only \(sha256\) or complete \(sha256\)](#)
- [User Manual](#)
- [API Javadoc](#)
- [DSL Reference](#)
- [Release Notes](#)

samsung에 대한 사용자 변수(U)

변수	값
classpath	
GRADLE_HOME	C:\Users\samsung\Documents\gradle-4.6
PATH	C:\Program Files\Java\jdk1.8.0\bin;C:\User...
TEMP	%USERPROFILE%\AppData\Local\Temp
TMP	%USERPROFILE%\AppData\Local\Temp

새로 만들기(N)...

편집(E)...

삭제(D)

에 대한 사용자 변수(U)

시스템 변수 편집

변수 이름(N):

Path

변수 값(V):

ion\PhysX\Common;%GRADLE_HOME%\bin

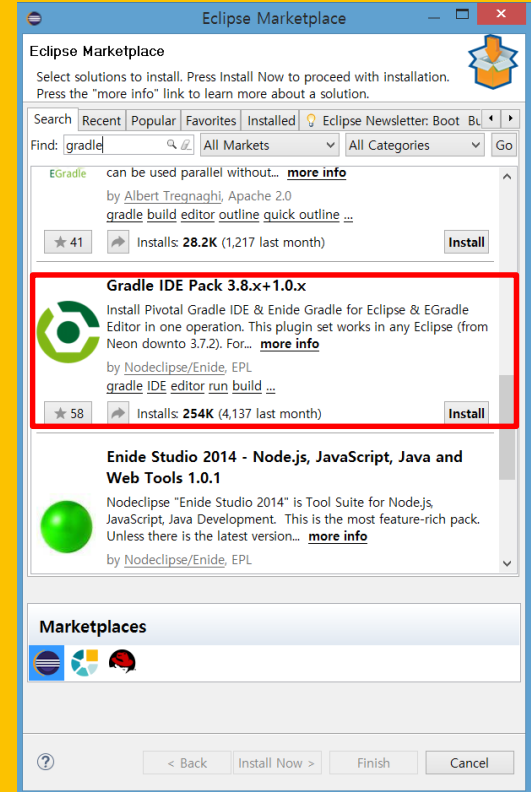
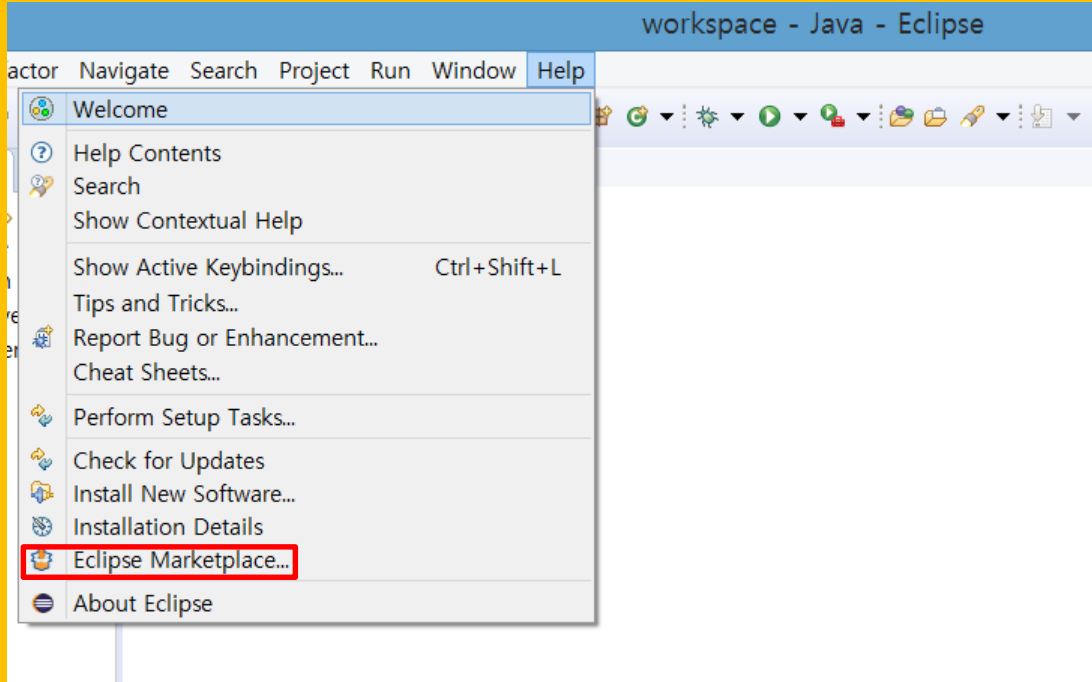
확인

취소

Gradle



Install





오픈 소스 분산 버전 관리 시스템

소스코드를 여러 PC와 저장소에 분산해서 저장

>> 중앙 서버에 문제가 생겨도 로컬 저장소에 commit 가능



Git 호스팅 서비스 !

Workflow

각 개발자가 메인저장소를 Clone,

Clone한 저장소에서 Commit,

메인저장소에 Push

저장소를 만들어 다른 사람들과
협업 가능



Features Business Explore Marketplace Pricing

Search GitHub Sign in or Sign up

Built for developers

GitHub is a development platform inspired by the way you work. From **open source** to **business**, you can host and review code, manage projects, and build software alongside millions of other developers.

Username

Email

Password

Use at least one letter, one numeral, and seven characters.

[Sign up for GitHub](#)

By clicking "Sign up for GitHub", you agree to our [terms of service](#) and [privacy policy](#). We'll occasionally send you account related emails.



Repository

Your repositories **3** **New repository**

Find a repository...

All Public Private Sources Forks

- 1317Stephen/software-verification
- 201411268
- tutorialRemote

Create a new repository

A repository contains all the files for your project, including the revision history.

Owner: /

Great repository names are short and memorable. Need inspiration? How about **stunning-winner**.

Description (optional)

- Public**
Anyone can see this repository. You choose who can commit.
- Private**
You choose who can see and commit to this repository.

- Initialize this repository with a README**
This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

Add .gitignore: | Add a license: ⓘ

Create repository



GUI Git Client

직관적


다양한 기능을 보유

IDE에 독립적



Sourcetree

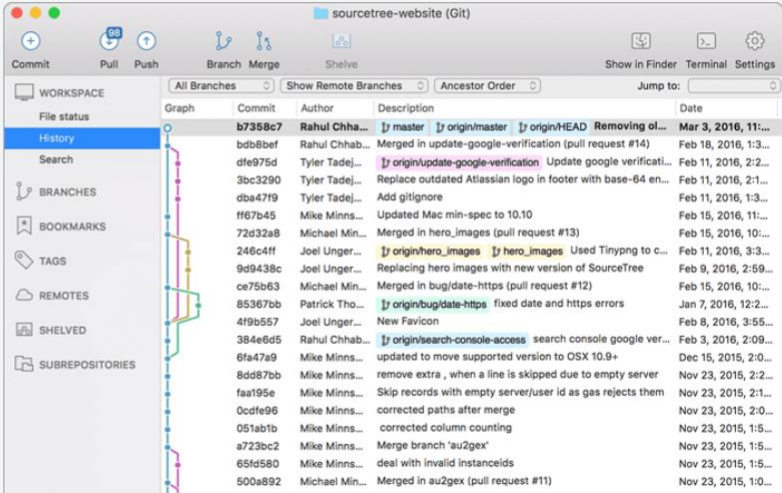
Install

 Sourcetree [Download for Windows](#)

Simplicity and power in a beautiful Git GUI

[Download for Windows](#)


Also available for Mac OS X






Commit	Author	Description	Date
b7358c7	Rahul Chhab...	Removing o...	Mar 3, 2016, 11:...
bdb8bef	Rahul Chhab...	Merged in update-google-verification (pull request #14)	Feb 18, 2016, 1:3...
dfe975d	Tyler Tadej...	Update google verificati...	Feb 11, 2016, 2:2...
3bc3290	Tyler Tadej...	Replace outdated Atlassian logo in footer with base-64 en...	Feb 11, 2016, 2:1...
dba47f9	Tyler Tadej...	Add gitignore	Feb 11, 2016, 1:3...
ff67b45	Mike Minns...	Updated Mac min-spec to 10.10	Feb 15, 2016, 11:...
72d32a8	Michael Min...	Merged in hero_images (pull request #13)	Feb 15, 2016, 10:...
246c4ff	Joel Unger...	Used Tinymp to c...	Feb 11, 2016, 3:3...
9d9438c	Joel Unger...	Replacing hero images with new version of SourceTree	Feb 9, 2016, 2:59...
ce75b63	Michael Min...	Merged in bug/date-https (pull request #12)	Feb 15, 2016, 10:...
85367bb	Patrick Tho...	fixed date and https errors	Jan 7, 2016, 12:2...
4f9b557	Joel Unger...	New Favicon	Feb 8, 2016, 3:55...
384e6d5	Rahul Chhab...	search console google ver...	Feb 3, 2016, 2:09...
6fa47a9	Mike Minns...	updated to move supported version to OSX 10.9+	Dec 15, 2015, 2:0...
8dd87bb	Mike Minns...	remove extra , when a line is skipped due to empty server	Nov 23, 2015, 2:2...
faa195e	Mike Minns...	Skip records with empty server/user id as gas rejects them	Nov 23, 2015, 2:1...
0cdfe96	Mike Minns...	corrected paths after merge	Nov 23, 2015, 2:0...
051ab1b	Mike Minns...	corrected column counting	Nov 23, 2015, 1:5...
a723bc2	Mike Minns...	Merge branch 'au2gex'	Nov 23, 2015, 1:5...
65fd580	Mike Minns...	deal with invalid instanceids	Nov 23, 2015, 1:5...
500a892	Michael Min...	Merged in au2gex (pull request #11)	Nov 23, 2015, 1:0...



Install

 Sourcetree

- 설치
- 라이선스 계약
- Atlassian 계정
- 원격
- 도구 설치
- 시작 저장소
- 저장소 복제

SourceTree는 다음 제공자가 완전히 무료로 제공하는 깃 클라이언트입니다


동의합니다 [라이선스 동의](#)

Help improve SourceTree by sending [사용 데이터](#)

[계속](#)




Install

 Sourcetree

- 설치
- 라이선스 계약
- Atlassian 계정**
- 원격
- 도구 설치
- 시작 저장소
- 저장소 복제


Atlassian 계정으로 로그인하세요.

You will be prompted for your Atlassian account details. You only have to log in once to complete your registration.






Install

 Sourcetree

- 설치
- 라이선스 계약
- Atlassian 계정
- 원격
- 도구 설치
- 시작 저장소
- 저장소 복제

등록 완료!



You are logged in as [redacted]@gmail.com

계속



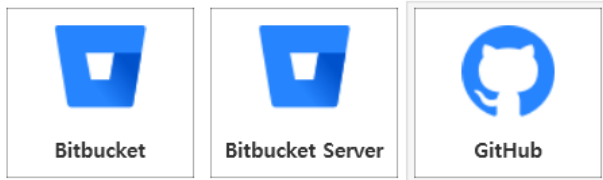
Install



- 설치
- 라이선스 계약
- Atlassian 계정
- 원격
- 도구 설치
- 시작 저장소
- 저장소 복제

계정 연결

기존 저장소를 복제하려면 원격 서버에 연결하세요. 비트버킷 계정이 없을 경우 다음 과정을 수행할 수 있습니다. [무료 가입](#)



호스트 URL:

인증:

설정 건너뛰기



계속



파일(F) 편집(E) 보기(V) 저장소(R) 액션(A) 도구 도움말(H)

New tab X +

Local Remote Clone Add Create

로컬 저장소

모든 저장소

폴더 추가

시작하려면 새 책갈피를 추가하거나 이 영역으로 저장소 폴더를 끌어다 놓으세요.



파일(F) 편집(E) 보기(V) 저장소(R) 액션(A) 도구 도움말(H)

New tab X +

Local Remote Clone Add Create

Clone

Cloning is even easier if you set up a remote account

소스 경로 / URL:

저장소 종류: 링크 / URL 나기

목적지 경로:

이름:

Local Folder:

고급 옵션

파일(F) 편집(E) 보기(V) 저장소(R) 액션(A) 도구 도움말(H)

New tab X +

Local Remote Clone Add Create

Clone

Cloning is even easier if you set up a remote account

저장소 종류: 저장소입니다

Local Folder:

고급 옵션

Sourcetree



The screenshot shows the Sourcetree application window with the following components:

- Toolbar:** Contains icons for Commit (highlighted with a red box), Push, Pull, Revert, Branch, Merge, Stash, Drop, Tag, and other actions like Follow, Terminal, Explorer, and Settings.
- Left Panel:** Shows project status, working area, branches (with 'master' selected), tags, history, and stashes.
- Graph View:** Displays a commit history graph with a table of commit details.
- Commit Details:** Shows information for the selected commit, including hash, author, date, and message.
- File Content:** Shows the content of the selected file (test.txt) with a diff view.

그래프	설명	날짜	작성자	커밋
● master 1 test !!!		18 3 2018 22:37	kar <egalfuomac@naver.com>	b57019b
↳ origin/master ↳ origin/HEAD	no message	11 6 2017 22:31	ka <egalfuomac@naver.com>	b8cf7cc
ppt		11 6 2017 22:27	ka <egalfuomac@naver.com>	eb833f3
..		11 6 2017 19:37	ka <egalfuomac@naver.com>	69c0b15
...		2 4 2017 22:59	ka <egalfuomac@naver.com>	159ce7c
수정 추가		9 3 2017 11:09	kar <egalfuomac@naver.com>	d82e101
170309실습		9 3 2017 11:04	kar <egalfuomac@naver.com>	09a93cc

커밋: b57019b022d3c2b4610a7c32fb00899ac55f6686 [b57019b]
상위 항목: b8cf7ccb3d
작성자: kar <egalfuomac@naver.com>
날짜: 2018년 3월 18일 일요일 오후 10:37:04
커밋한 사람: kar

```
test !!!
```

test.txt

```
0 + test  
1 \ No newline at end of file
```

Sourcetree



The image displays two side-by-side screenshots of the Sourcetree application interface, showing the commit dialog box. Both screenshots are for a repository named '201411268' and show the user 'kar <egalfuomac@naver.com>'.

Left Screenshot: The commit dialog box is open, showing the commit message field with a red box around it. The message field contains the text 'test.txt'. The 'Commit' button is visible at the bottom right.

Right Screenshot: The commit dialog box is open, showing the commit message field with the text 'test.txt'. The 'Commit' button is highlighted with a red box.

Sourcetree



The screenshot shows the Sourcetree application window. The 'Push' button in the top toolbar is highlighted with a red box and has a '1' notification badge. The commit history table is as follows:

그래프	설명	날짜	작성자	커밋
● master 1 test !!!		18 3 2018 22:37	kar <egalfuomac@...>	b57019b
● origin/master	no message	11 6 2017 22:31	ka <egalfuomac@...>	b8cf7cc
● ppt		11 6 2017 22:27	ka <egalfuomac@...>	eb833f3
● .		11 6 2017 19:37	ka <egalfuomac@...>	69c0b15
● ...		2 4 2017 22:59	ka <egalfuomac@...>	159ce7c
● 수정 추가		9 3 2017 11:09	kar <egalfuomac@...>	d82e101
● 170309실습		9 3 2017 11:04	kar <egalfuomac@...>	09a93cc

The file diff view for test.txt shows the following content:

```
0 + test
0 1 \ No newline at end of file
```


Sourcetree



201411268

모든 브랜치 | 원격 브랜치 | 날짜순으로 정렬

다음 저장소에 푸시: origin | https://github.com/sg0415/201411268

푸시할 브랜치	로컬 브랜치	리모트 브랜치	추적?
<input checked="" type="checkbox"/>	master	master	<input checked="" type="checkbox"/>

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- 201411268문서.pptx no message 9 months ago
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7 commits 1 branch 0 releases 1 contributor

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sg0415 test !!! Latest commit b57019b 2 minutes ago

- project . 9 months ago
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- homework2.css ... a year ago
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- test.txt test !!! 2 minutes ago

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