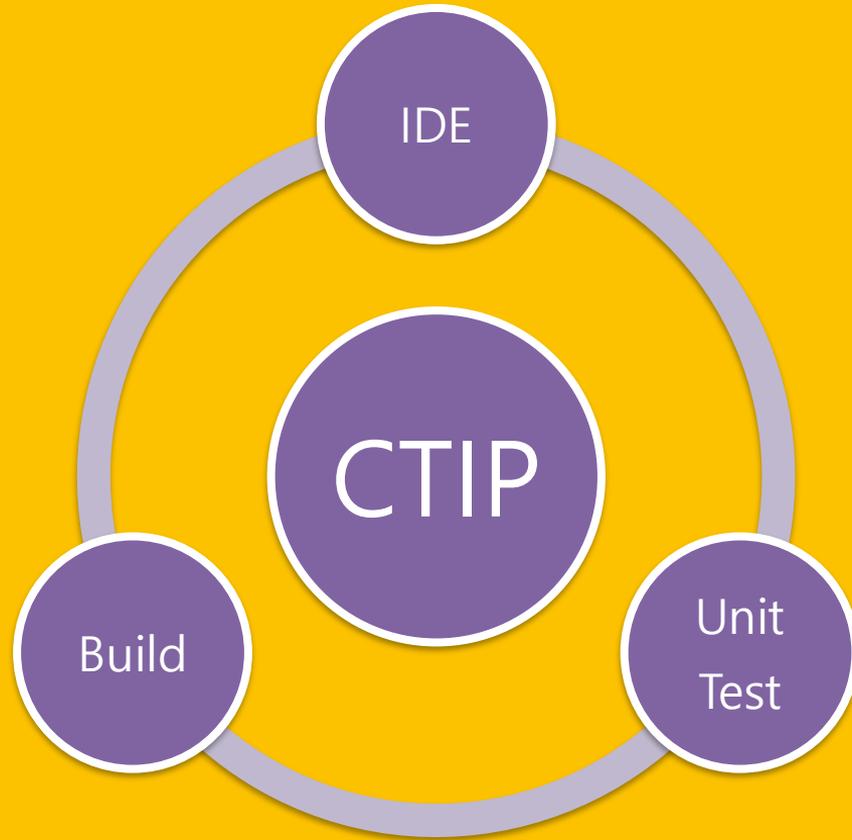




Introduction to CTIP

고예은 201410373, 김수현 201411266, 김아름 201411268

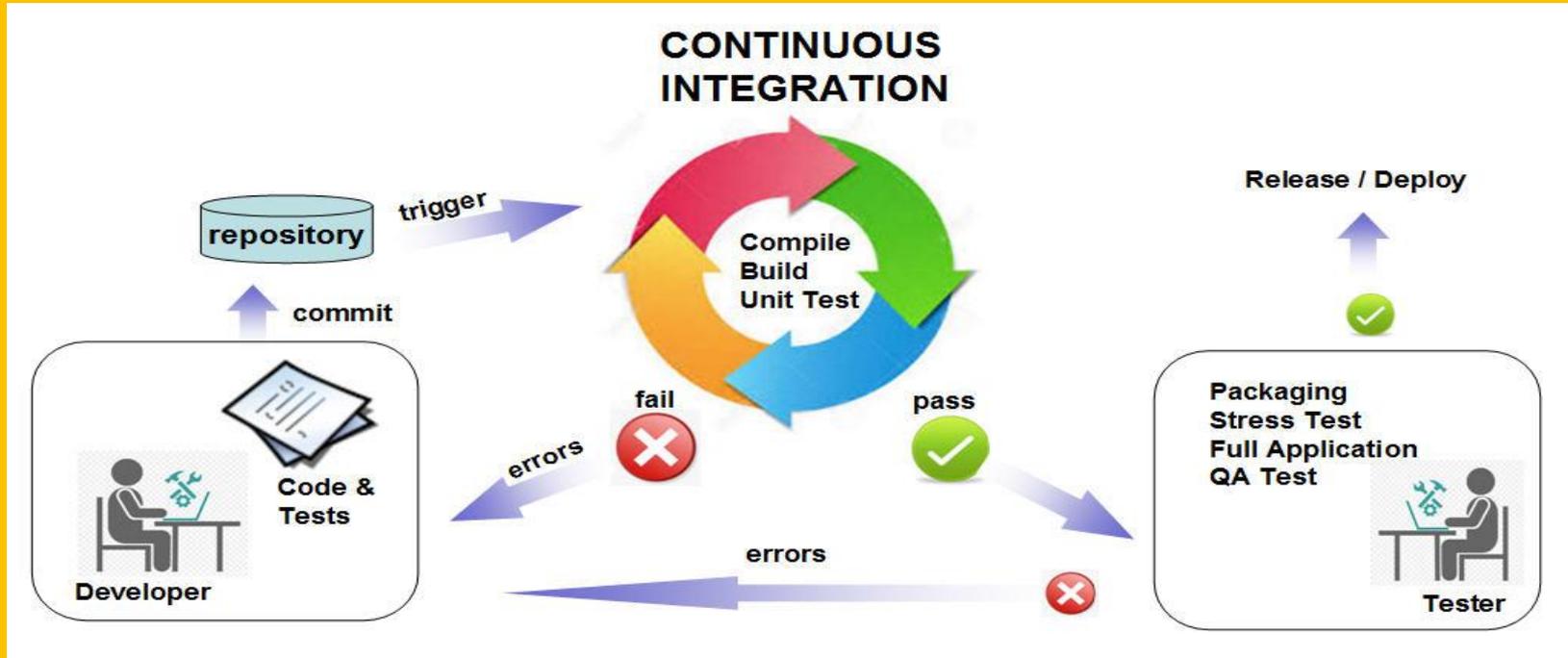
Table of Contents



What is CTIP?



Continuous Test & Integration Platform



IDE (Integrated development environment)



Comparison



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



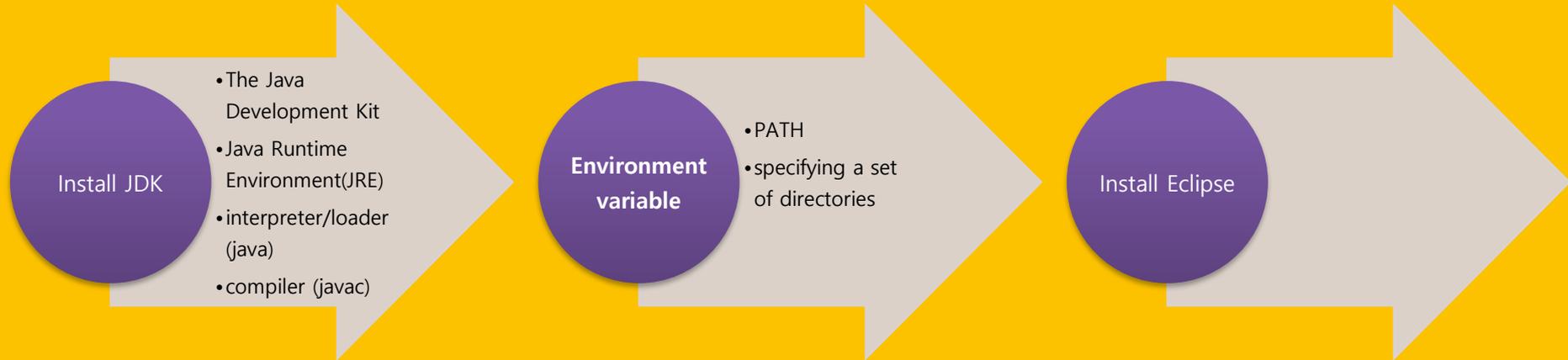
- Database support (Java DB, MySQL, PostgreSQL, and Oracle)



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

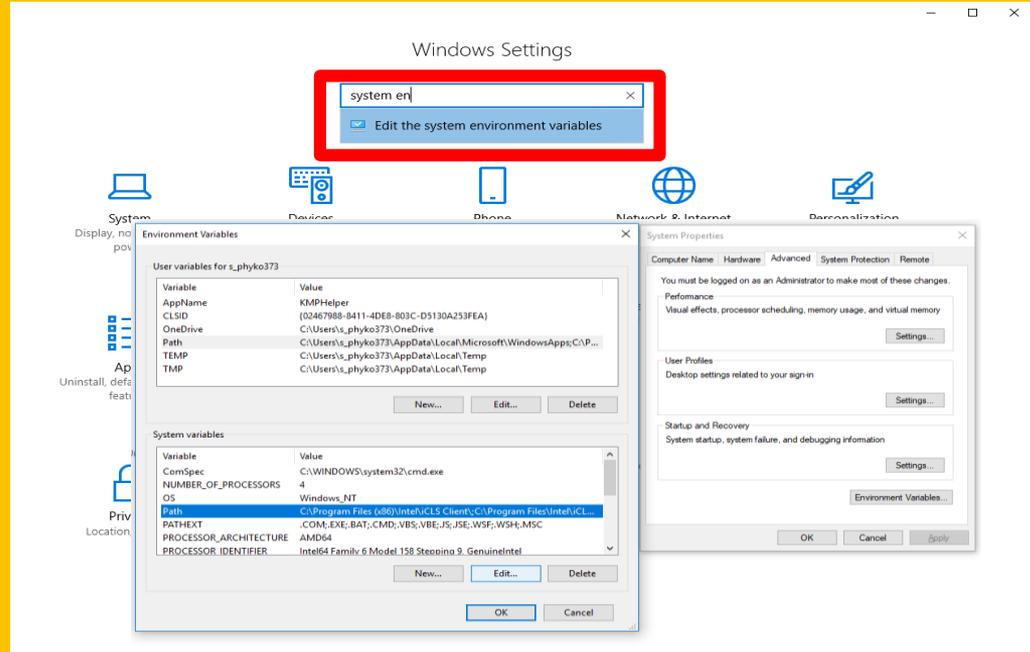
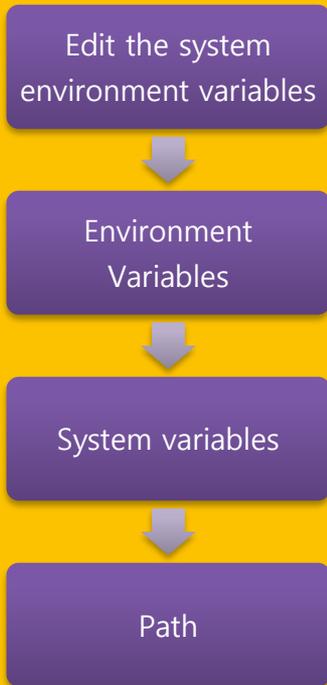


Install Eclipse in Windows 10





System Environment



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



System Environment

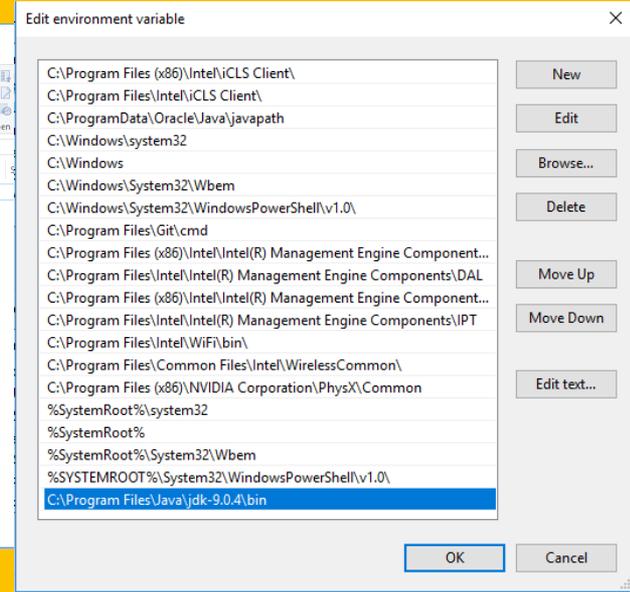
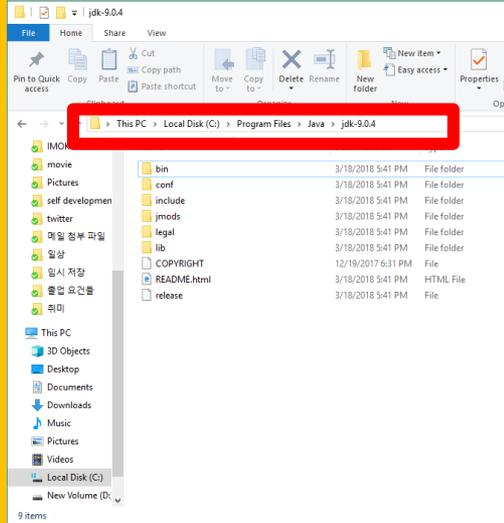
Edit environment variables



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



cmd "javac -version"



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

IDE



Install Eclipse



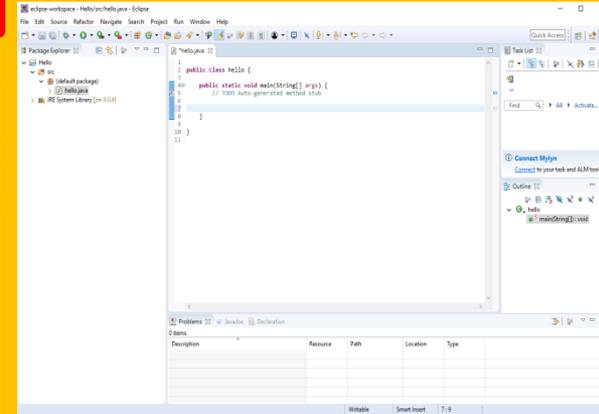
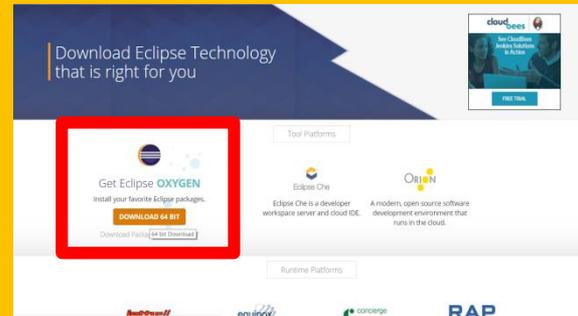
Download



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.*

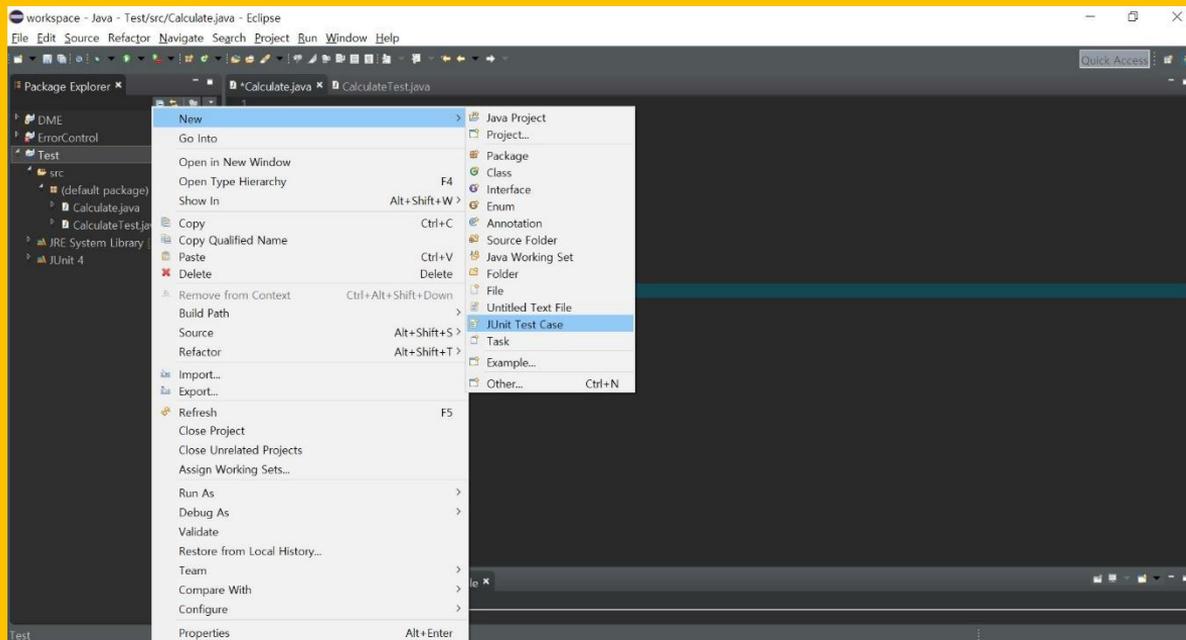
```
^TestCase.java x
1 import org.junit.*;
2
3 public class FoobarTest {
4     @BeforeClass
5     public static void setUpClass() throws Exception {
6         // Code executed before the first test method
7     }
8
9     @Before
10    public void setUp() throws Exception {
11        // Code executed 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

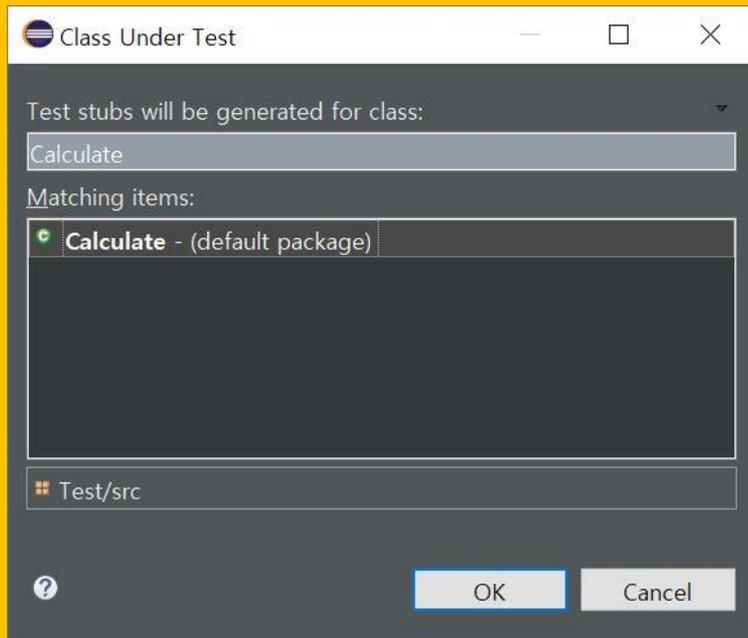
Do you want to add comments? (Configure templates and default value [here](#))

Generate comments

Class under test:

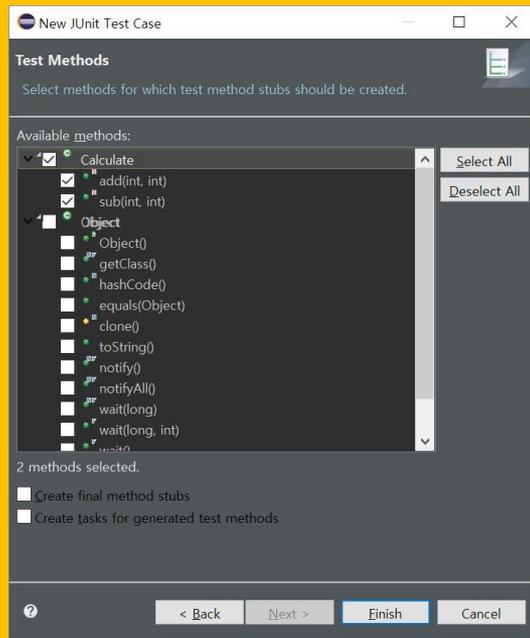


Class Under Test → browse → [클래스 이름] 검색 → OK





테스트할 메소드 선택 → Finish





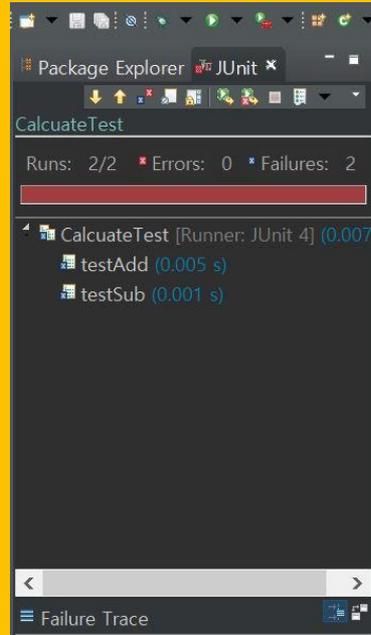
자동으로 생성된 코드

```
workspace - Java - Test/src/CalculateTest.java - Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
  DME
  ErrorControl
  Test
    src
      (default package)
        CalculateTest.java
        CalculateTest.java
  JRE System Library [javaSE-1.8]
  JUnit 4

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
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13:     @Test
14:     public void testSub() {
15:         fail("Not yet implemented");
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Runs / Errors / Failures



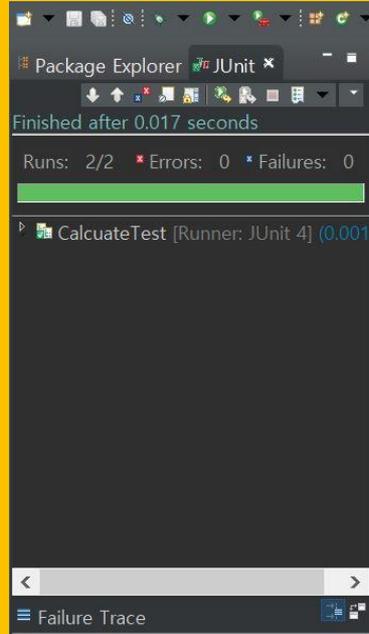


테스트 코드 구현

```
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



Install

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Accelerate developer productivity

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

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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. 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

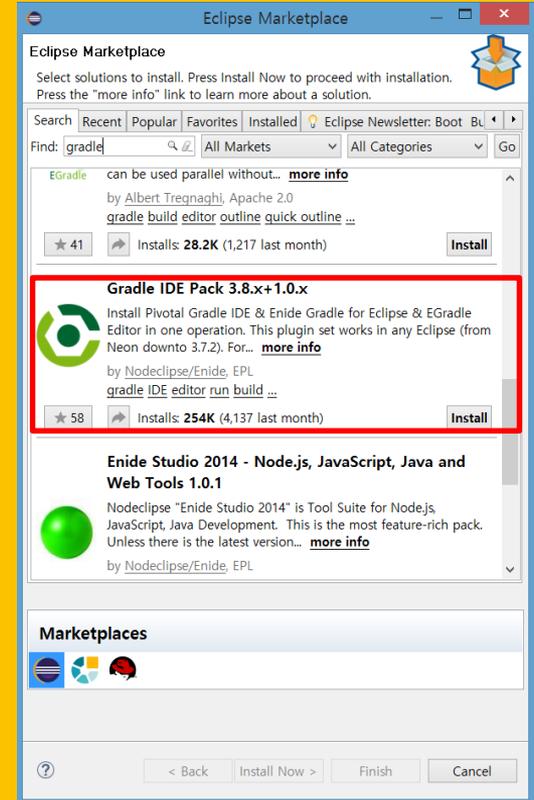
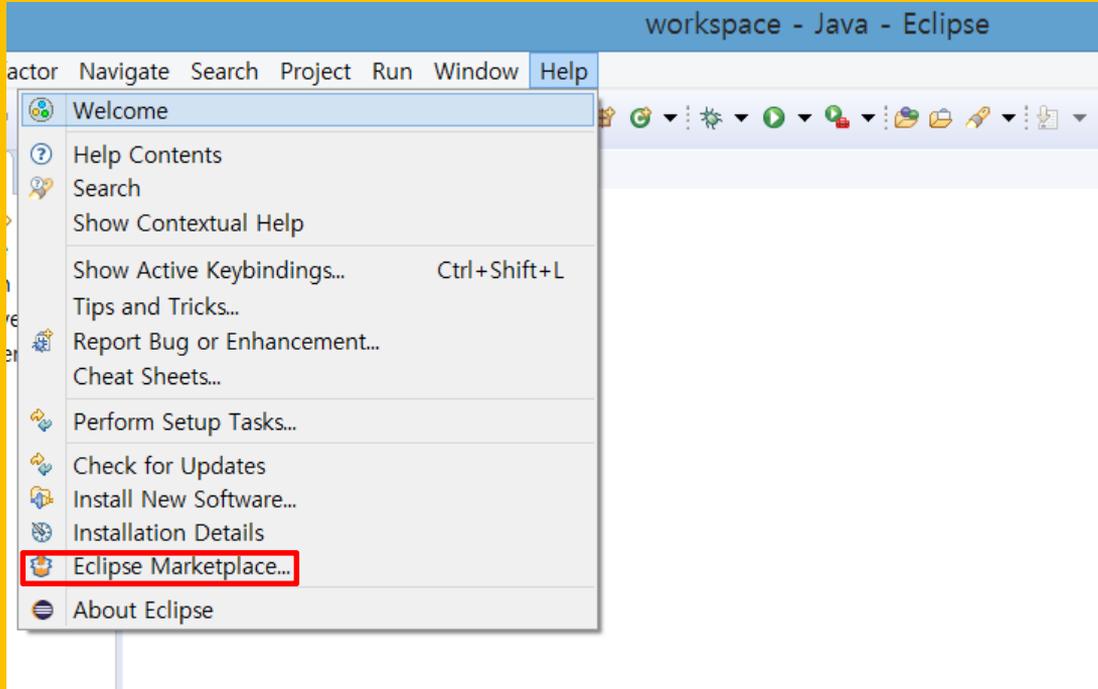
확인

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

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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.

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you@example.com

Password
Create a 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 Repository name

 sg0415 /

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: **None** ▾ | Add a license: **None** ▾ ⓘ

Create repository



GUI Git Client

직관적

다양한 기능을 보유

IDE에 독립적



Sourcetree

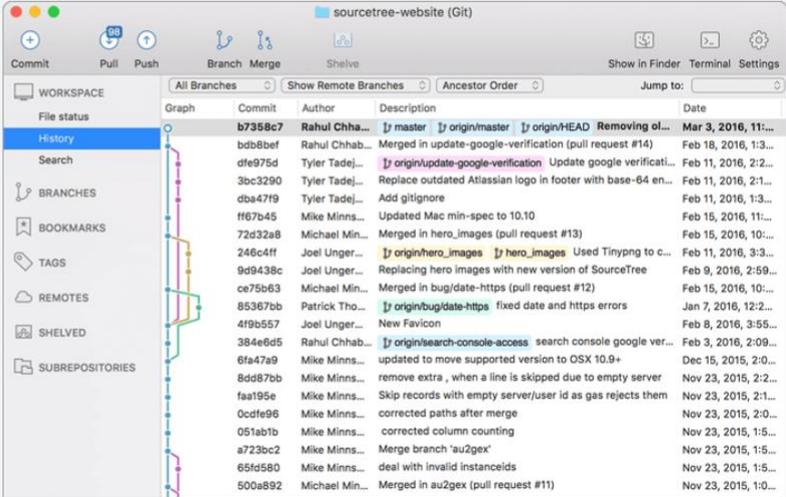
Install

 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



The screenshot shows the Sourcetree application window. The title bar contains the menu items: 파일(F), 편집(E), 보기(V), 저장소(R), 액션(A), 도구, 도움말(H). The main window has a blue header with a search icon and a 'New tab' button. Below the header is a toolbar with icons for 'Local', 'Remote', 'Clone', 'Add', and 'Create'. The 'Clone' button is highlighted with a red box. The main content area has the title '로컬 저장소' (Local Storage) and a sub-section '모든 저장소' (All Storage) with a folder icon. Below this is a text instruction: '시작하려면 새 책갈피를 추가하거나 이 영역으로 저장소 폴더를 끌어다 놓으세요.' (To get started, add a new bookmark or drag a storage folder into this area.) and a link '폴더 추가' (Add Folder).



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:

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, Patch, Branch, Merge, Stash, Drop, Tag, and other actions like Follow, Terminal, Explorer, and Settings.
- Left Panel:** Shows project structure including '파일 상태' (File Status), '작업 공간' (Working Space), '브랜치' (Branches) with 'master' selected, '태그' (Tags), '원격' (Remote), and '스태시' (Stash).
- Graph View:** Displays a commit history graph with a table of commits. The selected commit is 'master 1 test !!!'.
- Commit Details:** Shows metadata for the selected commit, including commit hash, author, date, and message.
- File Content:** Shows the content of the selected file 'test.txt', which contains the text 'test !!!'.

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 process. Both screenshots are for a repository named '201411268' and show the '커밋' (Commit) dialog box.

Left Screenshot: The '커밋' dialog is open, and the commit message field is highlighted with a red box. The message is empty. The '커밋' button is visible at the bottom right.

Right Screenshot: The '커밋' dialog is open, and the commit message field contains the text 'test !!!'. The '커밋' 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 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 type="checkbox"/>

모두선택 모든 태그 푸시 강제 푸시

Push 취소

GitHub Login

GitHub Login

Username or email

Password

Login Cancel

Don't have an account? Sign up
Forgot your password?

Sourcetree



6 commits 1 branch 0 releases 1 contributor

Branch: master New pull request Create new file Upload files Find file Clone or download

sg0415 no message Latest commit b8cf7cc on 11 Jun 2017

project	.	9 months ago
201411268문서.pptx	no message	9 months ago
homework2.css	...	a year ago
homework2.htm	...	a year ago

Help people interested in this repository understand your project by adding a README.

7 commits 1 branch 0 releases 1 contributor

Branch: master New pull request Create new file Upload files Find file Clone or download

sg0415 test !!! Latest commit b57019b 2 minutes ago

project	.	9 months ago
201411268문서.pptx	no message	9 months ago
homework2.css	...	a year ago
homework2.htm	...	a year ago
test.txt	test !!!	2 minutes ago

Help people interested in this repository understand your project by adding a README. Add a README