

Software Verification

# Team Presentatin#1

201311301 이재규

201411261 김건우

201411264 김민범

201511258 김소영

Advertising Management

# INDEX

- IntelliJ
- JUnit
- Gradle
- Github
- Jenkins

# IDE 선택

통합 개발환경 선택

01

02

03

04

05



VS



VS



01

## » Eclipse

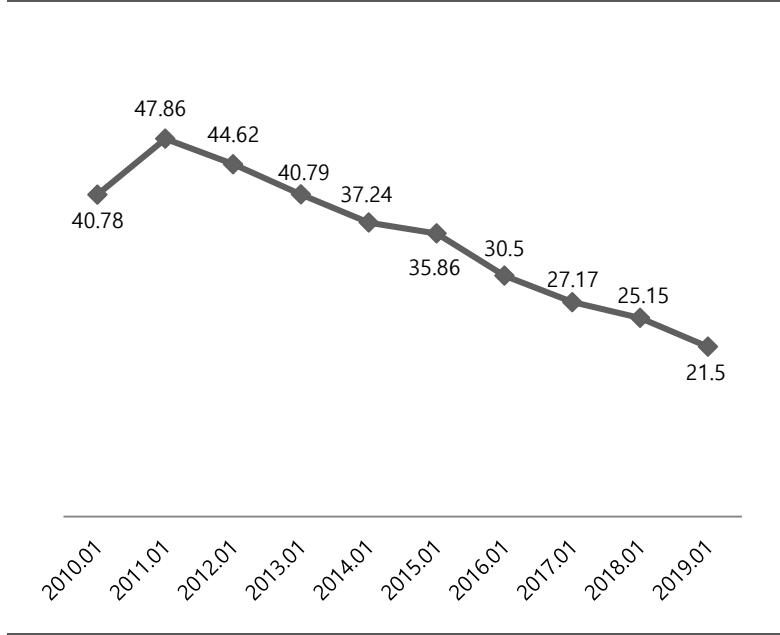
02

03

04

05

Eclipse 점유율 추세



통계 : Pierre Carboneille

### 장점

- 플러그인의 종류가 많고 확장이 쉬움
- 무료 IDE

### 단점

- 플러그인 호환 문제가 잦음
- 개발 언어 추가 시 플러그인을 설치 해야함

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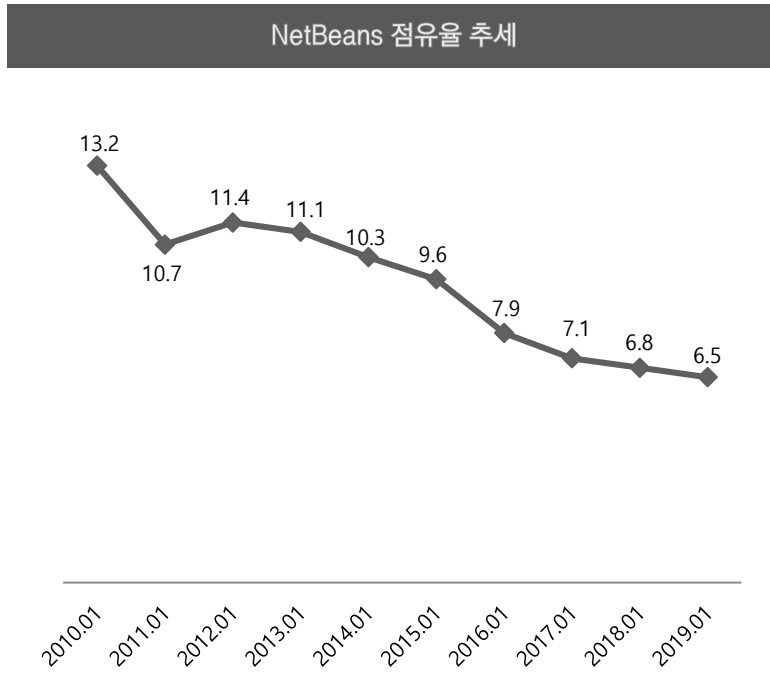
## NetBeans

02

03

04

05



통계 : Pierre Carboneille

### 장점

- Java FX, PHP, JSP 등 개발에 유리함
- 무료 IDE
- 다른 IDE에 비해서 리소스를 덜 차지함

### 단점

- 플러그인이 적어 확장이 어려움
- 개발보다는 교육용 IDE에 적합함

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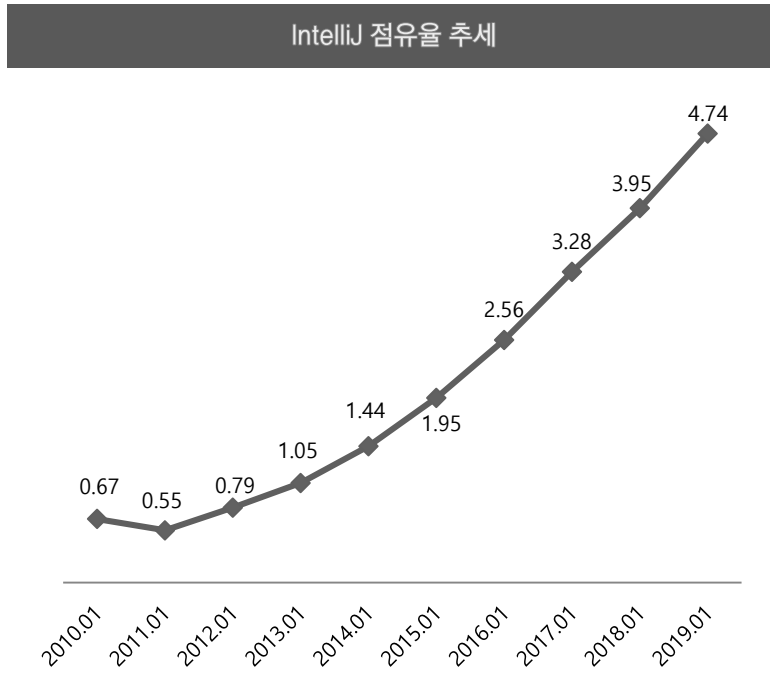
## IntelliJ

02

03

04

05



통계 : Pierre Carbone

### 장점

- IDE의 안정성이 높음
- 플러그인 호환 및 충돌 문제가 적음
- Java 외에도 다양한 언어 지원

### 단점

- 큰 규모의 프로젝트의 경우 구동 시 리소스를 많이 차지함
- ~~유료 IDE~~

IntelliJ 학생 라이선스로 무료로 이용 가능

01

02

03

04

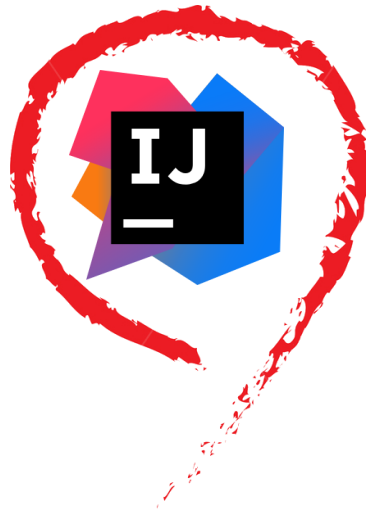
05



VS



VS





01

02

03

04

05

The screenshot shows the IntelliJ website's navigation menu. The 'Support' menu item is highlighted with a red box. Under the 'Support' menu, the 'Education' link is also highlighted with a red box. Below the navigation menu, there are four main categories: CUSTOMERS, COMMUNITY, and COMPANY. The 'Education' link is located under the 'COMMUNITY' section. At the bottom of the page, there are four product tiles: IntelliJ IDEA, ReSharper, Rider, and DataGrip.

**JET BRAINS**

Tools Languages Solutions **Support** Store

**JetBrains Store**  
Pricing and licensing for businesses and individuals  
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Tech support, docs

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Newsletters, webinars  
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For students and teachers  
Open Source  
Projects and support  
Research  
Scientific, marketing research

**COMPANY**  
About JetBrains  
Company, people  
Contacts  
Offices, partners  
Press & Logos  
News, brand assets  
Careers  
Jobs, culture

**IJ** **IntelliJ IDEA**  
The most intelligent Java IDE

**R#** **ReSharper**  
Visual Studio Extension for .NET Developers

**RD** **Rider**  
Cross-platform .NET IDE

**DG** **DataGrip**  
IDE for Databases and SQL

01

02

03

04

05

**Classroom Licenses**

**Are you a student or an academic staff member?**

If you are a student enrolled at an accredited educational institution or a teaching staff member, you can apply individually for all JetBrains products at once!

[APPLY FOR FREE STUDENT PACK](#)

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01

02

03

04

05

**Store**    JetBrains Toolbox    Team Tools    For Business    Contact Sales

English

## Free individual licenses for students and faculty members

Students should have access to the highest-quality education available. So if you're learning (or teaching) Java, PHP, Ruby, Python, JavaScript, Kotlin, Objective-C, or .NET technologies, hit the ground running with professional developer tools from JetBrains. The best part is, the educational licenses are completely free!

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**APPLY NOW**

01

02

03

04

05

Apply with: **UNIVERSITY EMAIL ADDRESS** ISIC/ITIC MEMBERSHIP OFFICIAL DOCUMENT GITHUB

Status:  I'm a student  
 I'm a teacher

Name:    
Our software will be registered to your real name.

Email address:   
I certify that the university email address provided above is valid and belongs to me.

Country / region:

I am under 13 years old

I have read and I accept the [JetBrains Account Agreement](#)

I consent to the use of my names, email address, and location data in email communication concerning JetBrains products held or services used by me or my company [More](#)

**APPLY FOR FREE PRODUCTS**

01

02

03

04

05

## JetBrains Products for Learning

Thank you!

Please follow the instructions in the verification email we've sent you to [REDACTED].ac.kr.  
You can link JetBrains Educational Pack to another email address later.

---

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01

02

03

04

05

## JetBrains Educational Pack Confirmation

받은편지함 x



**JetBrains Account** <no\_reply@jetbrains.com>

오전 10:51 (0분 전)



나에게 ▾

🌐 영어 ▾ > 한국어 ▾ [메일 번역](#)

[영어 번역 안함](#) x

Hi,

You've received this email because your email address was used for registering/updating a JetBrains Educational Pack. You can link JetBrains products to another email address in another step.

Please follow this link to confirm your decision and start using JetBrains Educational Pack for free:

[Confirm Request](#)

Yours truly,  
JetBrains Team  
<https://www.jetbrains.com>  
The Drive to Develop

01

02

03

04

05

regulations shall not be applicable to this Agreement.

12.9. Notice. JetBrains may deliver any notice to Customer via electronic mail to an email address provided by Customer, JetBrains Account, registered mail, personal delivery or renowned express courier (such as DHL, FedEx or UPS). Any such notice will be deemed to be effective (i) on the day the notice is sent to Customer via email, (ii) upon being uploaded to Your JetBrains Account (irrespective of when Customer actually receives it), (iii) upon personal delivery, (iv) one (1) day after deposit with an express courier, (v) or five (5) days after deposit in the mail, whichever occurs first.

12.10. Children and minors. If You are under 18 years old, then by entering into this Agreement you explicitly stipulate, that (i) You have legal capacity to conclude this Agreement or that you have a valid parent or legal guardian consent and (ii) You understand the JetBrains Privacy Policy available at <https://www.jetbrains.com/company/privacy.html>. You may not enter into this Agreement if you are under 13 years old. IF YOU DO NOT UNDERSTAND THIS SECTION, DO NOT UNDERSTAND THE JETBRAINS PRIVACY POLICY OR DO NOT KNOW WHETHER YOU HAVE THE LEGAL CAPACITY TO ACCEPT THESE TERMS, PLEASE ASK YOUR PARENT OR LEGAL GUARDIAN FOR HELP.

For exceptions or modifications to this Agreement, please contact JetBrains at:  
Address: Na hrebenech II 1718/10, Prague, 14000, Czech Republic  
Fax: +420 241 722 540  
E-mail: [sales@jetbrains.com](mailto:sales@jetbrains.com)

Please review and accept this license agreement to proceed with product activation.

I Accept


01

02

03

04

05

 **JetBrains Sales** <sales@jetbrains.com> 오전 10:53 (0분 전) ☆ ↶ ⋮  
나에게 ▾

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🗺️ 영어 ▾ > 한국어 ▾ [메일 번역](#) [영어 번역 안함](#) ×

Dear Sua,

Thank you for creating your JetBrains Account.

To complete your registration, click the link below:  
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Yours truly,  
JetBrains Sales Team  
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01

02

03

04

05

**JET BRAINS** ? Help

Please complete the registration form below

Email Address

First Name

Last Name

Username

Please make sure you choose a strong password as your account will have access to your purchases.

Password

Repeat Password

Password must contain 8 or more characters at least 3 types:  
- uppercase (A-Z);      - digits (0-9);  
- lowercase (a-z);      - non-alphanumeric (!, @, #, etc.)

I have read and I accept the [JetBrains Account Agreement](#)

I consent to the use of my names, email address, and location data in email communication concerning JetBrains products held or services used by me or my company [More](#)

[? 지원](#)

- Access your purchases and view your order history
- Identify expired and outdated licenses, order new licenses and upgrades
- Manage your company licenses and distribute them to end users

01

02

03

04

05

The screenshot shows the JetBrains account management interface. At the top, there is a navigation bar with the JetBrains logo, 'Licenses', and 'Your Account' tabs. On the right, there are links for 'Help' and a user profile for 'Min Bum Kim'. Below the navigation bar, the user's name 'Min Bum Kim' and 'Transactions' are displayed. A 'Buy new license' button is visible in the top right corner of the main content area. The main content features a section titled '1 License' with a 'Download' button. The license details are as follows:

- JetBrains Product Pack for Students** (License ID: [redacted])
- Licensed to: **Min Bum Kim**
- License restriction: For educational use only
- Valid through: March 19, 2020
- Following products included:
  - [AppCode](#)
  - [CLion](#)
  - [DataGrip](#)
  - [dotCover](#)
  - [dotMemory](#)
  - [dotTrace](#)
  - [GoLand](#)
  - [IntelliJ IDEA Ultimate](#)
  - [PhpStorm](#)
  - [PyCharm](#)
  - [ReSharper](#)
  - [ReSharper C++](#)
  - [Rider](#)
  - [RubyMine](#)
  - [WebStorm](#)

After downloading and installing the software, simply run it and follow the on-screen prompts to sign in with your JetBrains Account.

Can't find your license here? Link your past purchases to your JetBrains Account by [providing a license key or domain](#).

At the bottom of the page, there is a footer with copyright information: 'Copyright © 2000–2019 JetBrains s.r.o. | [Help](#) | [Support](#) | [JetBrains Privacy Policy](#) | [JetBrains Account Agreement](#) | Build #2019.03-1591'. A '지원' (Support) button is located in the bottom right corner.

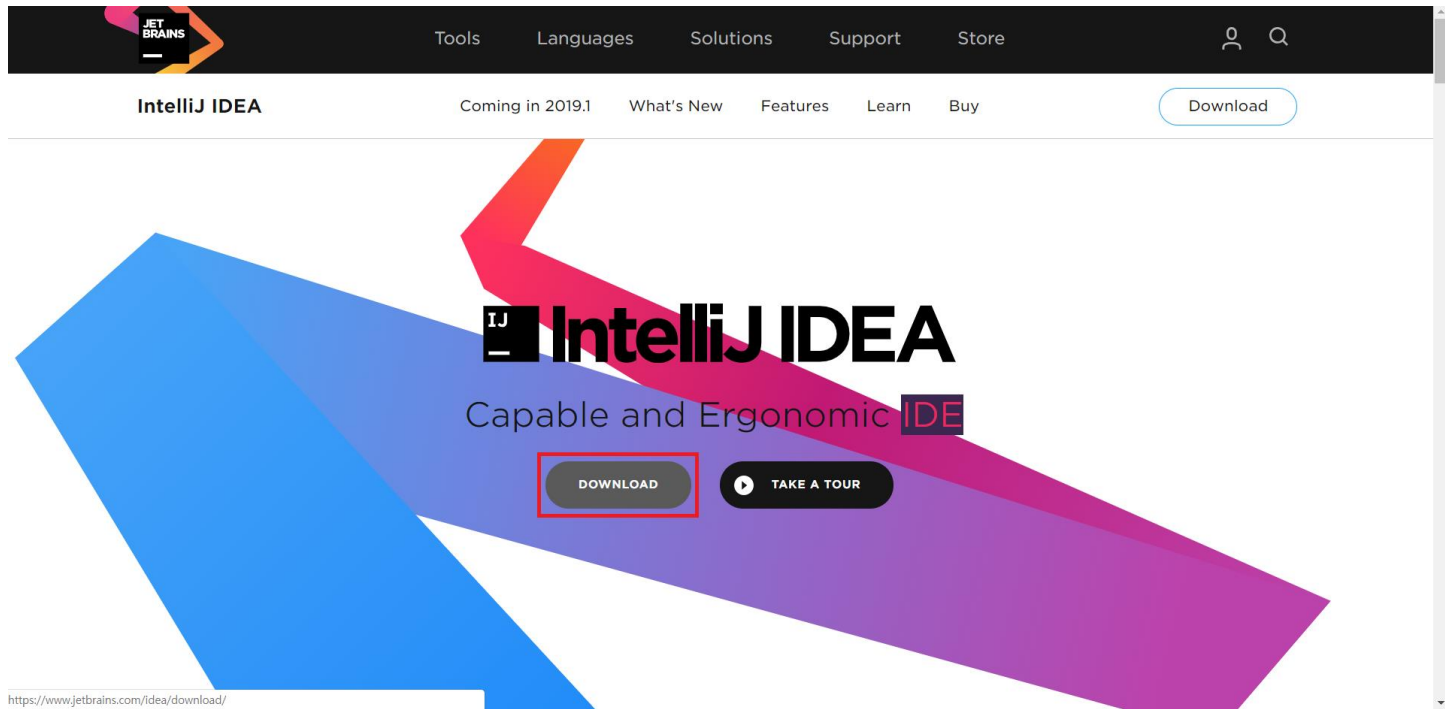
01

02

03

04

05



01

02

03

04

05

**IntelliJ IDEA** Coming in 2019.1 What's New Features Learn Buy [Download](#)

## Download IntelliJ IDEA

Windows macOS Linux

### Ultimate

For web and enterprise development

[DOWNLOAD](#) [EXE](#)  
Free trial

### Community

For JVM and Android development

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Free, open-source

Version: 2018.3.5  
Build: 183.5912.21  
Released: February 26, 2019  
[Release notes](#)

[System requirements](#)  
[Installation instructions](#)  
[Previous versions](#)

License	Commercial	Open-source, Apache 2.0 <a href="#">?</a>
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<https://www.jetbrains.com/idea/download/download-thanks.html?platform=windows>

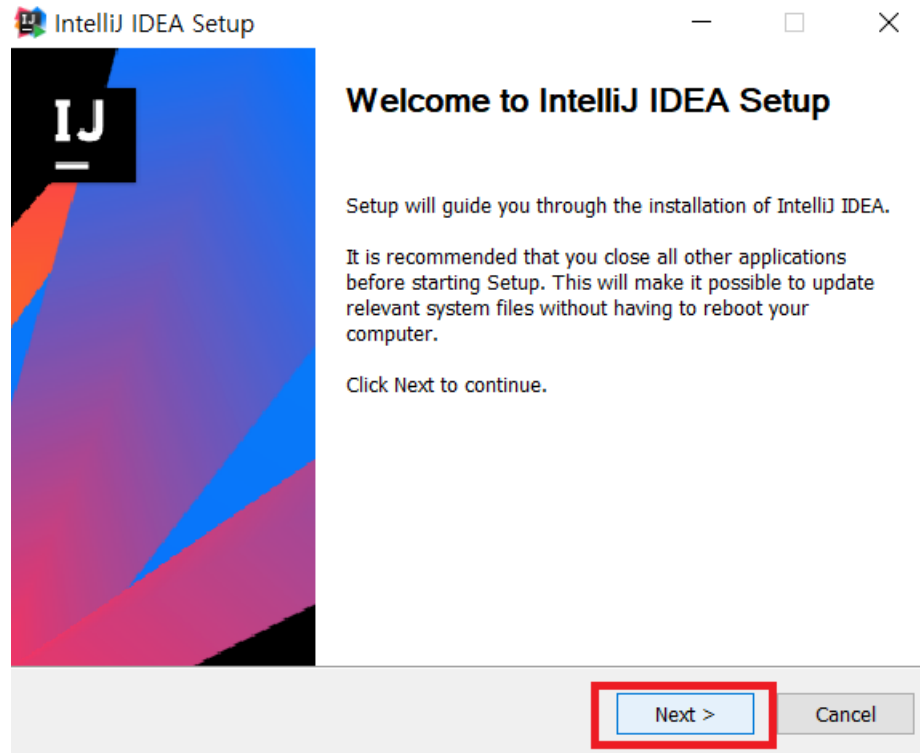
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02

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04

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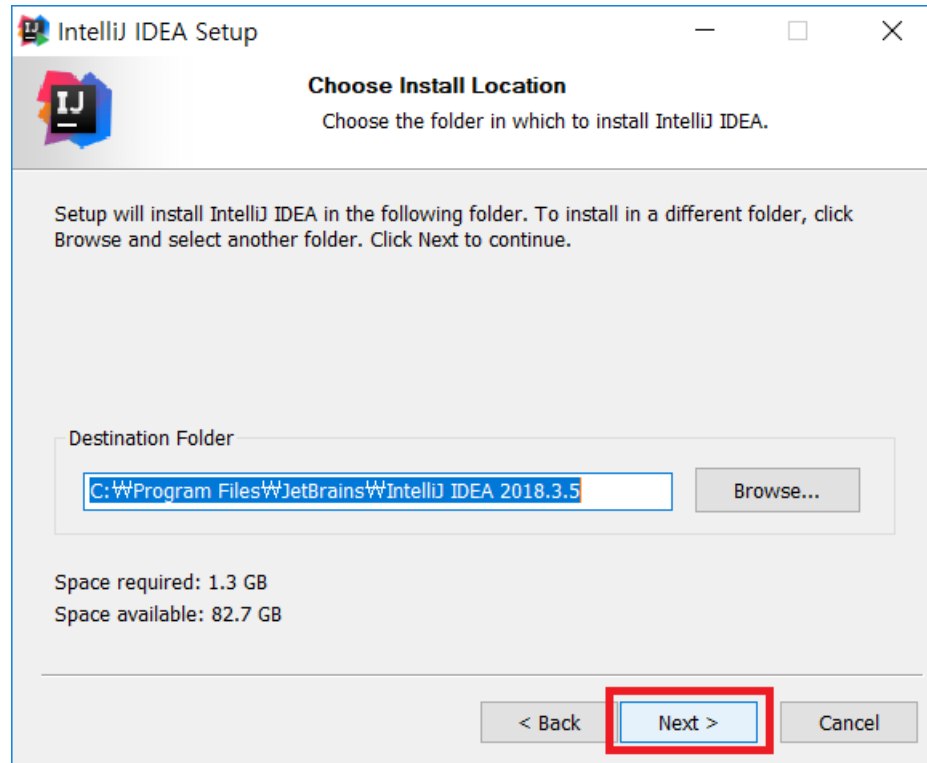
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02

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04

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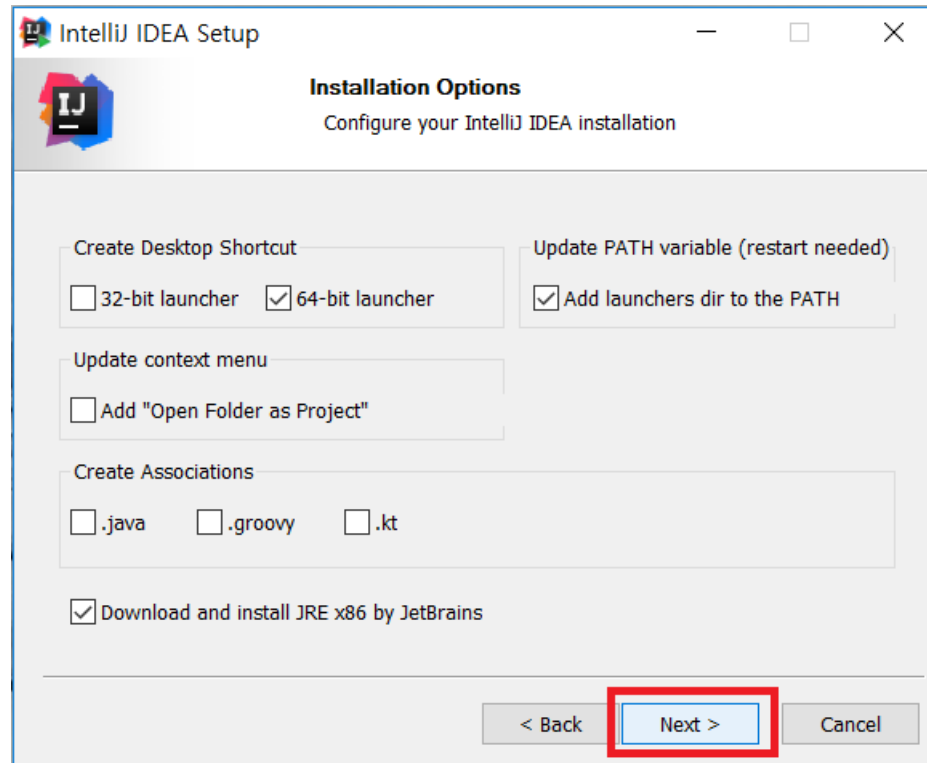
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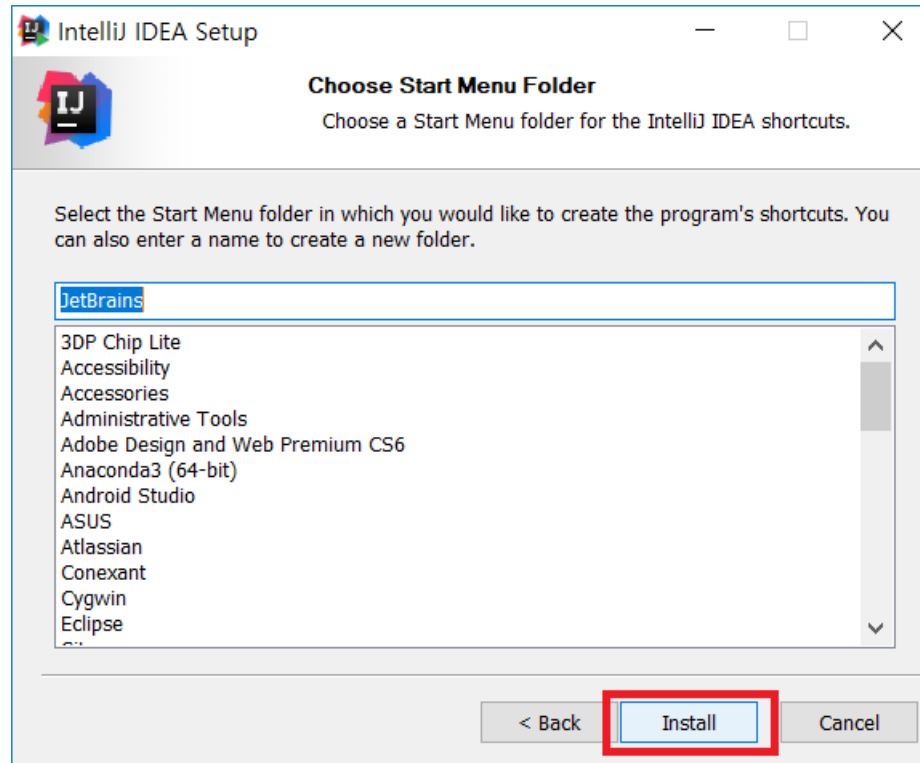
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02

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04

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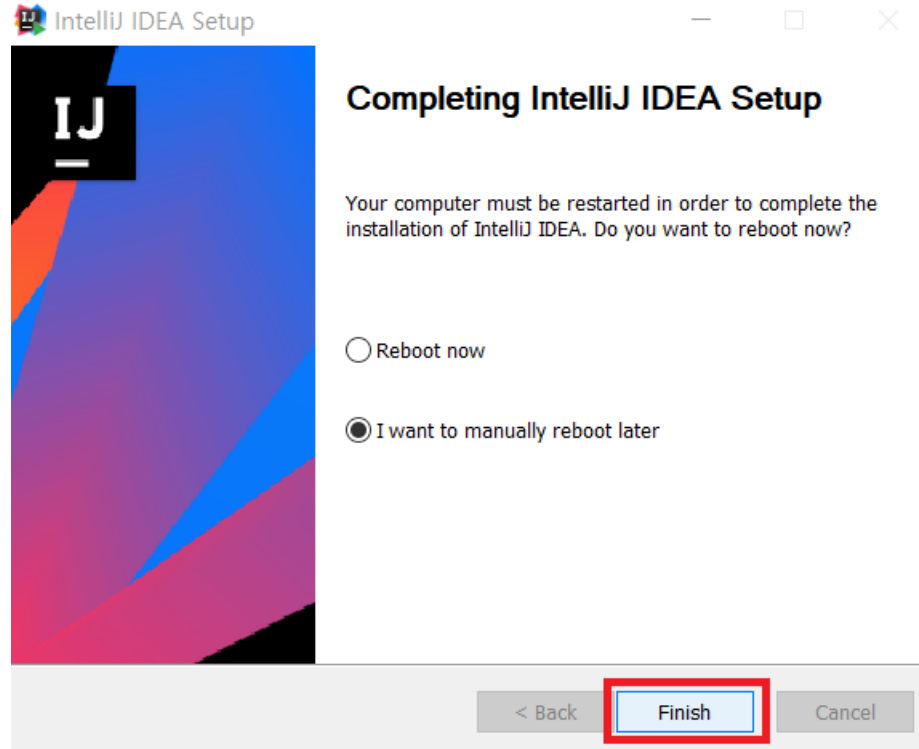
01

02

03

04

05



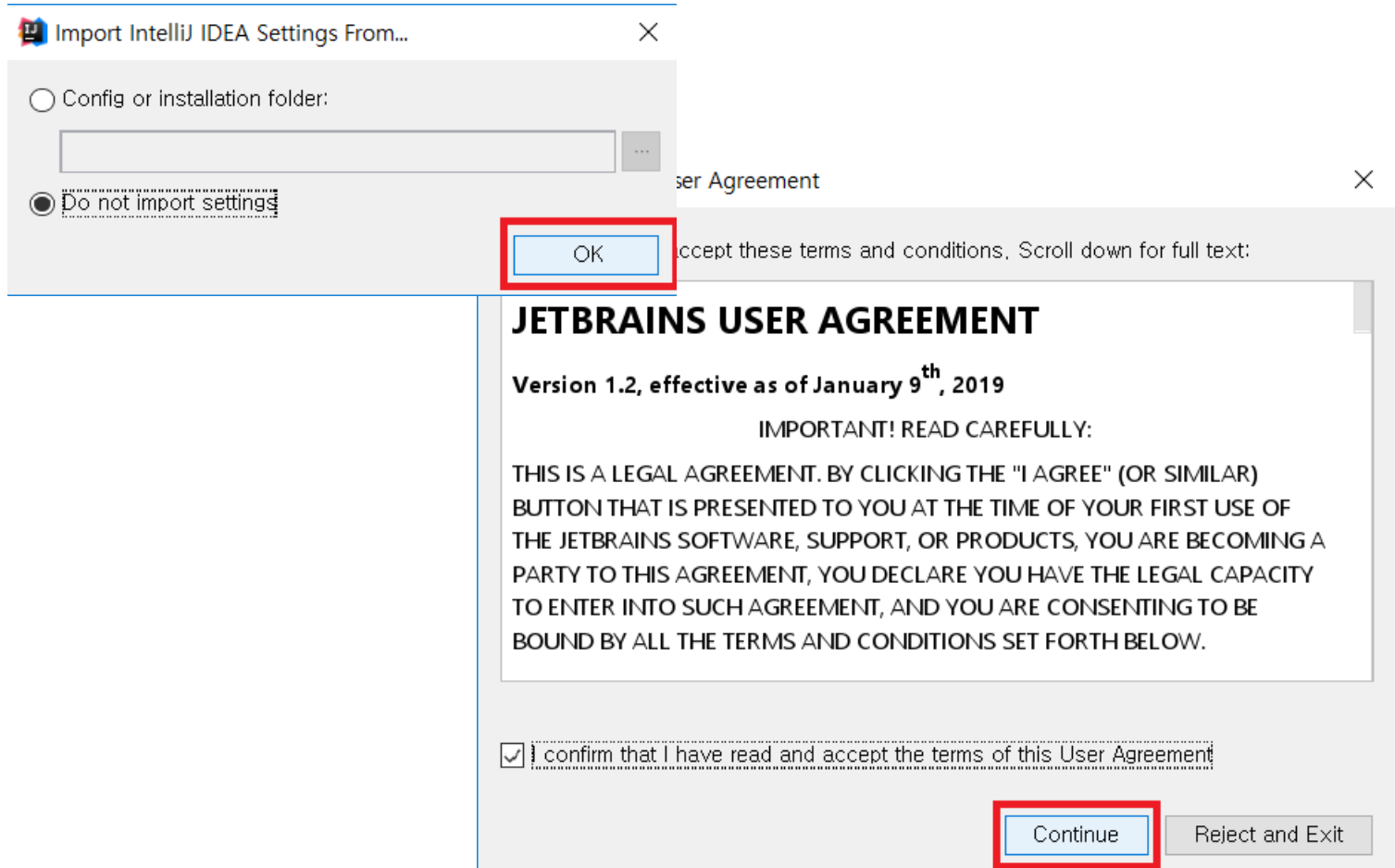
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02

03

04

05



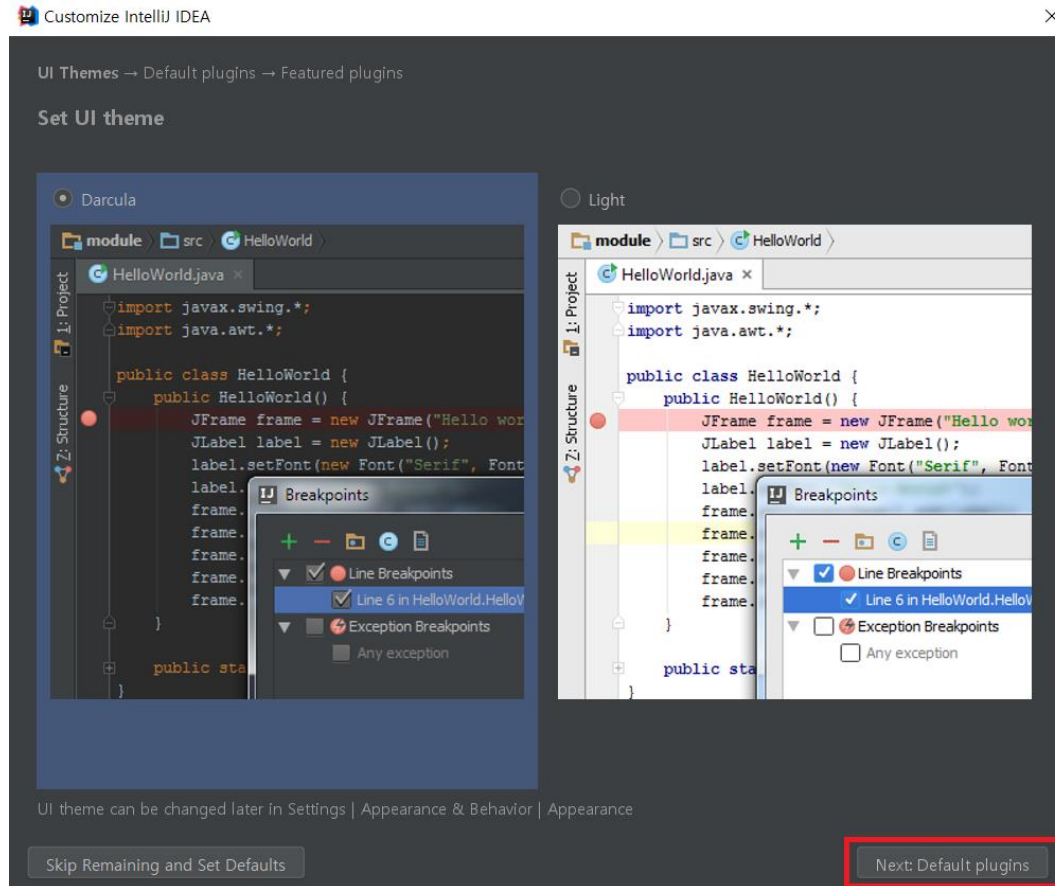
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02

03

04

05



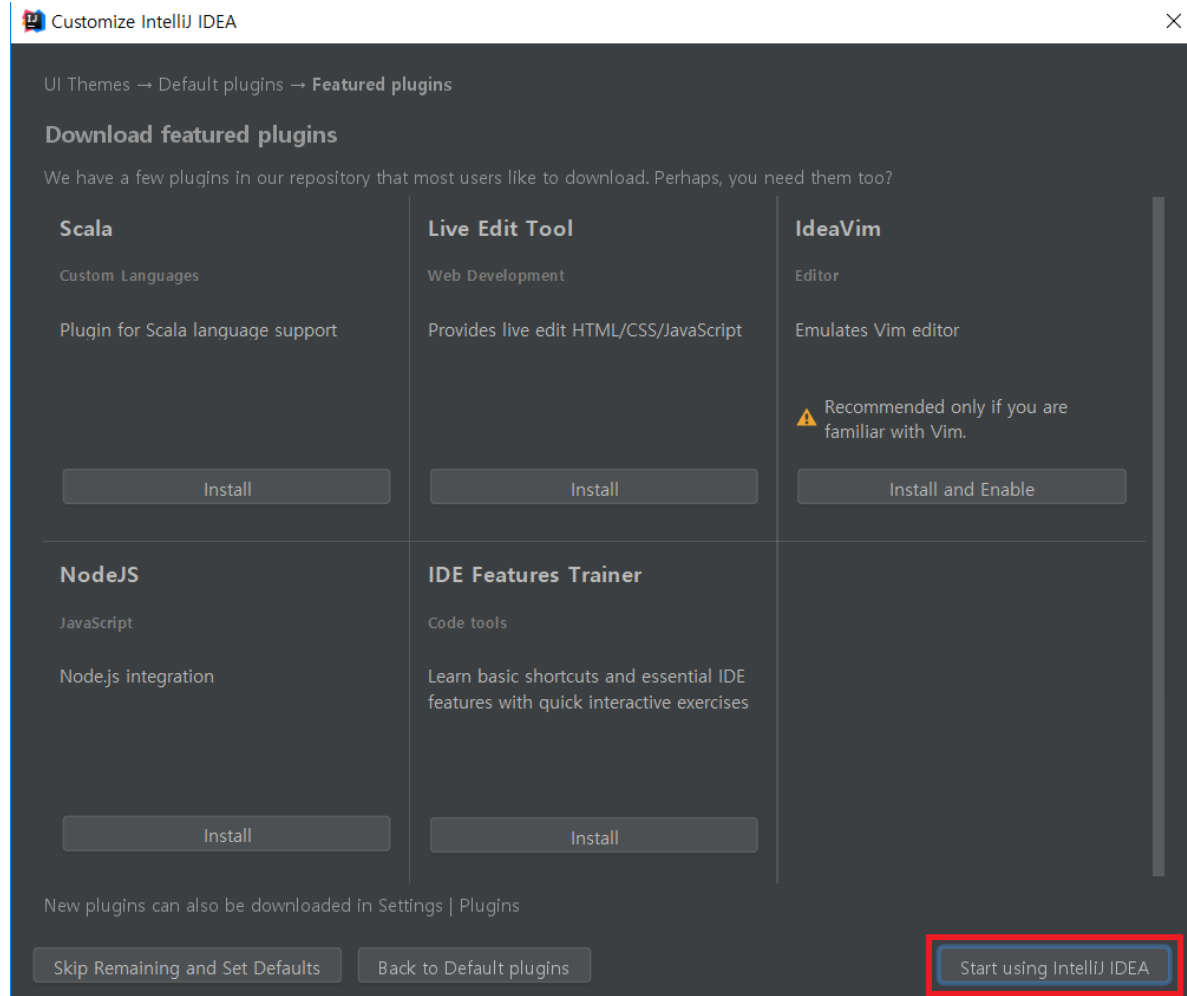
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02

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04

05



01

02

03

04










05

Customize IntelliJ IDEA

UI Themes → **Default plugins** → Featured plugins

**Tune IDEA to your tasks**

IDEA has a lot of tools enabled by default. You can set only ones you need or leave them all.

 <b>Java Frameworks</b> <i>Google App Engine, Grails, GWT, Vaadin, JBoss Seam...</i> Customize... Disable All	 <b>Build Tools</b> <i>Ant, Maven, Gradle</i> Customize... Disable All	 <b>Web Development</b> <i>HTML, Haml, CSS, Less, Sass, Stylus, JavaScript...</i> Customize... Disable All
 <b>Version Controls</b> <i>CVS, Git, GitHub, Mercurial, Perforce, Subversion, TFS</i> Customize... Disable All	 <b>Test Tools</b> <i>JUnit, TestNG-J, Cucumber for Java, Coverage</i> Customize... Disable All	 <b>Application Servers</b> <i>Application Servers View, Geronimo, GlassFish, JBoss...</i> Customize... Disable All
 <b>Clouds</b> <i>Cloud Foundry, CloudBees, Heroku, OpenShift</i>	 <b>Swing</b> <i>UI Designer</i>	 <b>Android</b> <i>Android</i>

Skip Remaining and Set Defaults    Back to UI Themes    **Next: Featured plugins**

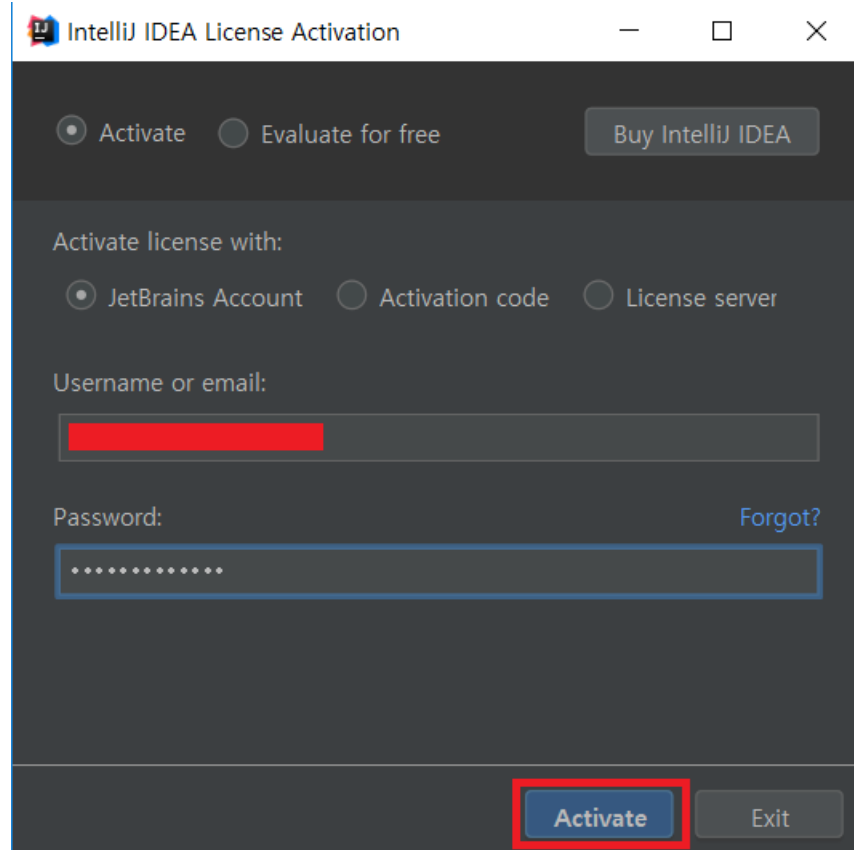
01

02

03

04

05



# JUnit

Standard framework for unit test

01 >> What is Junit ?

02

03

04

05



- Java
- Unit test 를 위한 표준 framework
- Assert Class
- Annotation



01

02

03

04

05

## »» Assert Class

- 검증 방법
- 메소드로 구성

### Constructor Summary

Constructors		
Modifier	Constructor	Description
protected	<b>Assertions()</b>	Protected constructor allowing subclassing but not direct instantiation.

### Method Summary

All Methods	Static Methods	Concrete Methods
Modifier and Type	Method	Description
static void	<b>assertAll</b> (String heading, Collection<Executable> executables)	Assert that <i>all</i> supplied executables do not throw exceptions.
static void	<b>assertAll</b> (String heading, Stream<Executable> executables)	Assert that <i>all</i> supplied executables do not throw exceptions.
static void	<b>assertAll</b> (String heading, Executable... executables)	Assert that <i>all</i> supplied executables do not throw exceptions.
static void	<b>assertAll</b> (Collection<Executable> executables)	Assert that <i>all</i> supplied executables do not throw exceptions.

◦ <https://junit.org/junit5/docs/current/api/org/junit/jupiter/api/Assertions.html>

## 02 >> Annotation

- Class / method 선언 할 때, “@” 를 이용하여 선언

Annotation	Description
@Test	Denotes that a method is a test method. Unlike JUnit 4's @Test annotation, this annotation does not declare any attributes, since test extensions in JUnit Jupiter operate based on their own dedicated annotations. Such methods are <i>inherited</i> unless they are <i>overridden</i> .
@ParameterizedTest	Denotes that a method is a <a href="#">parameterized test</a> . Such methods are <i>inherited</i> unless they are <i>overridden</i> .
@RepeatedTest	Denotes that a method is a test template for a <a href="#">repeated test</a> . Such methods are <i>inherited</i> unless they are <i>overridden</i> .
@TestFactory	Denotes that a method is a test factory for <a href="#">dynamic tests</a> . Such methods are <i>inherited</i> unless they are <i>overridden</i> .

- <https://junit.org/junit5/docs/current/user-guide/#writing-tests-annotations>

01 >> example

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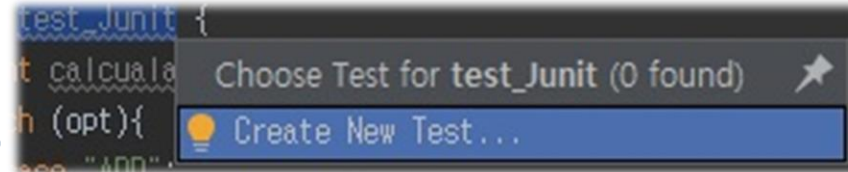
02

03

04

05

Ctrl + shift + T



```
test_Junit.java x
1 public class test_Junit {
2     public int calculate(int num1, int num2, String opt){
3         switch (opt){
4             case "ADD":
5                 return num1 + num2;
6             case "SUB":
7                 return num1 - num2;
8             default:
9                 return 0;
10        }
11    }
12 }
```

예제.java

»» example

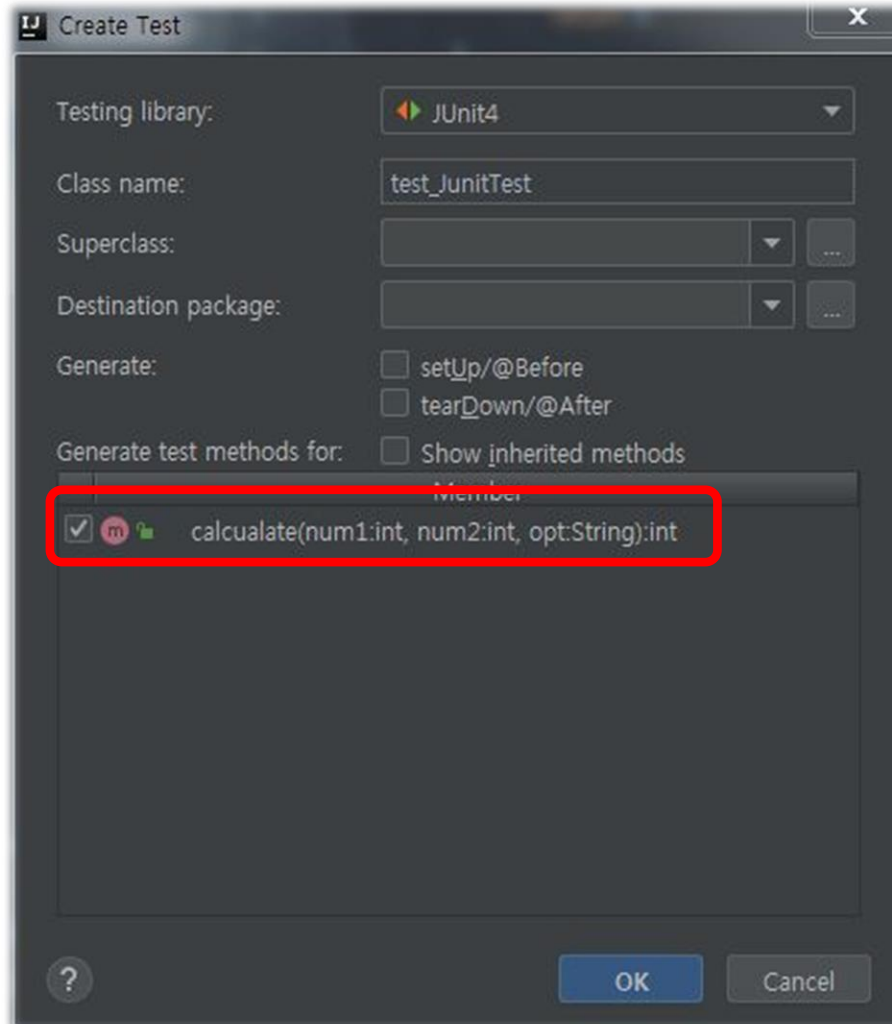
01

02

03

04

05



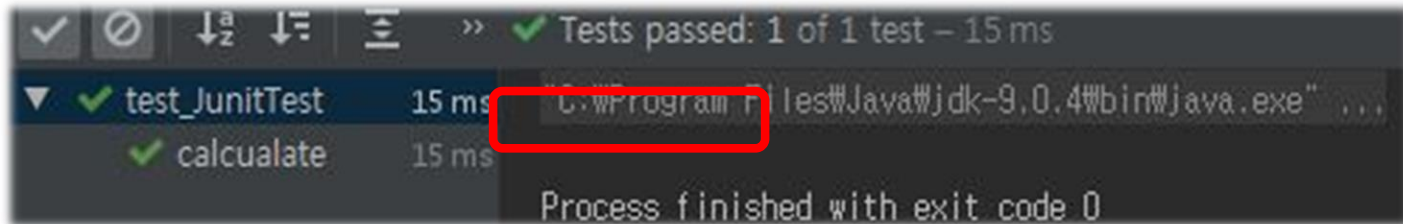
Create Test Window

## ➤➤ example

```
test_Junit.java x test_JunitTest.java x
1  import ...
5
6  public class test_JunitTest {
7
8      @Test
9      public void calculalate() {
10         test_Junit tjt = new test_Junit();
11         int result = tjt.calculalate( num1: 3, num2: 2, opt: "ADD");
12
13         Assert.assertEquals( message: "3+2", expected: 5, result);
14     }
15 }
```

Test Class

## 01 &gt;&gt; Success

02  
03  
04  
05  
A screenshot of an IDE's test runner showing a successful test run. The status bar at the top indicates 'Tests passed: 1 of 1 test - 15 ms'. The test results list shows 'test\_JunitTest' (15 ms) and 'calcuulate' (15 ms), both with green checkmarks. The command prompt shows the test was executed using 'C:\Program Files\Java\jdk-9.0.4\bin\java.exe'. The process finished with exit code 0.

```
✓ Tests passed: 1 of 1 test - 15 ms
test_JunitTest 15 ms "C:\Program Files\Java\jdk-9.0.4\bin\java.exe" ...
  ✓ calcuulate 15 ms
Process finished with exit code 0
```

## &gt;&gt; Fail

A screenshot of an IDE's test runner showing a failed test run. The status bar at the top indicates 'Tests failed: 1 of 1 test - 18 ms'. The test results list shows 'test\_JunitTest' (18 ms) and 'calcuulate' (18 ms), both with yellow 'X' icons. The command prompt shows the test was executed using 'C:\Program Files\Java\jdk-9.0.4\bin\java.exe'. The error message is 'java.lang.AssertionError: 3+2 Expected :5 Actual :0'. A link '<Click to see difference>' is provided.

```
✗ Tests failed: 1 of 1 test - 18 ms
test_JunitTest 18 ms "C:\Program Files\Java\jdk-9.0.4\bin\java.exe" ...
  ✗ calcuulate 18 ms
java.lang.AssertionError: 3+2
Expected :5
Actual :0
<Click to see difference>
```

# Build Tool 선택

빌드 자동화 도구 선택

01

02

03

04

05

Source Code File



Executable File



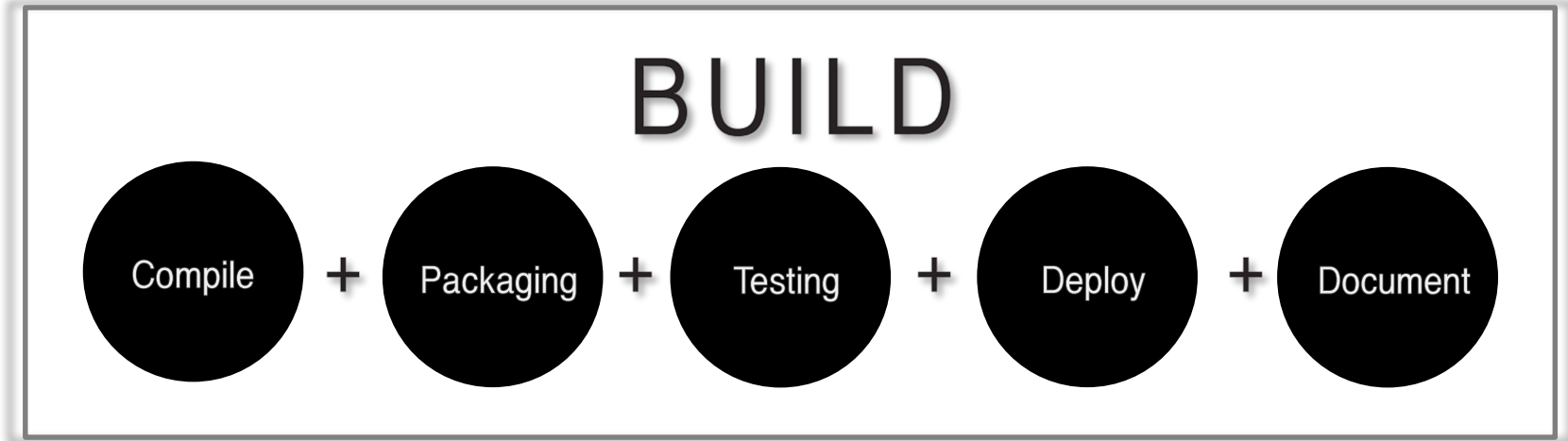
01

02

03

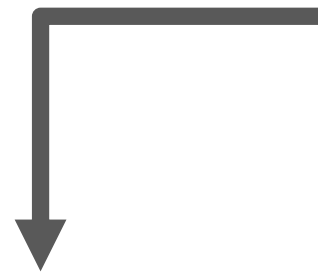
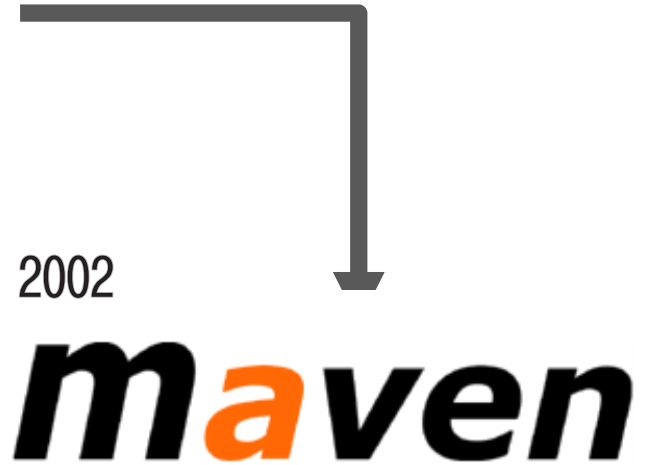
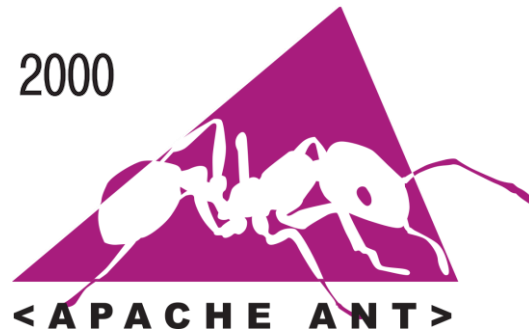
04

05



Build Tool → 빌드를 자동화 해주는 툴

- 01
- 02
- 03
- 04
- 05



- 01
- 02
- 03
- 04
- 05

**maven**



POM.xml 을 이용한  
정형화된 빌드 시스템

VS

Groovy 기반의 DSL 스트림트  
동적인 빌드 작업에 적합

상속 구조 멀티 프로젝트

VS

Configuration Injection 방식  
멀티 프로젝트

01

02

03

04

05



다른 빌드 자동화 도구의 **장점만** 채택

- ✓ Ant의 유연성, 자율성
- ✓ Maven의 편리성

빠르고 편리한 **Gradle** 선택

01 >> Performance

02 빠른 속도

03 빌드 시간 향상



04 개발 생산성 증가

01

02

03

04

05

01

»» Performance

02

속도 향상을 위한 여러가지 기능 지원

03

04

05



Incremental Builds

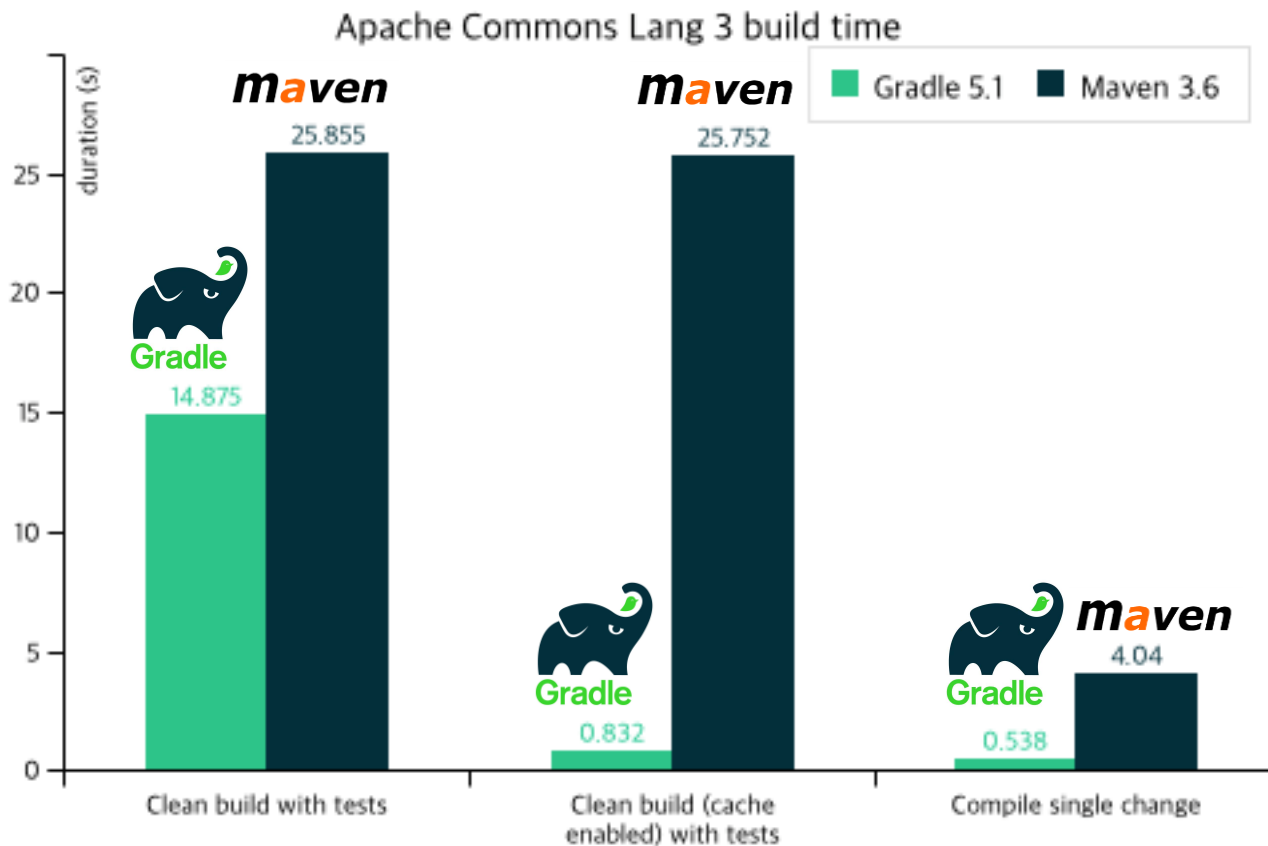
Task Output Caching

Incremental Subtasks

Parallel Execution

Performance

Maven의 빌드 속도와 비교



01

02

03

04

05

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»» User Experience

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간결성

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# Groovy 기반 DSL 스크립트 사용



»» Groovy 스크립트로 Gradle용 플러그인을 호출하거나 직접 코드를 짜면 된다.



01

»» Flexibility

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유연성

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다양한 플러그인 사용 가능



01

»» Flexibility

02

유연성

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다양한 언어들에 대한  
Build Environment 제공



01

»» Expandability

02

확장성

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# 멀티 프로젝트 구성 Configuration Injection



»» 설정 주입 방식으로 프로젝트를 정의하기 때문에 재사용에 용이하다.

01

»» Dependency Management

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문서화

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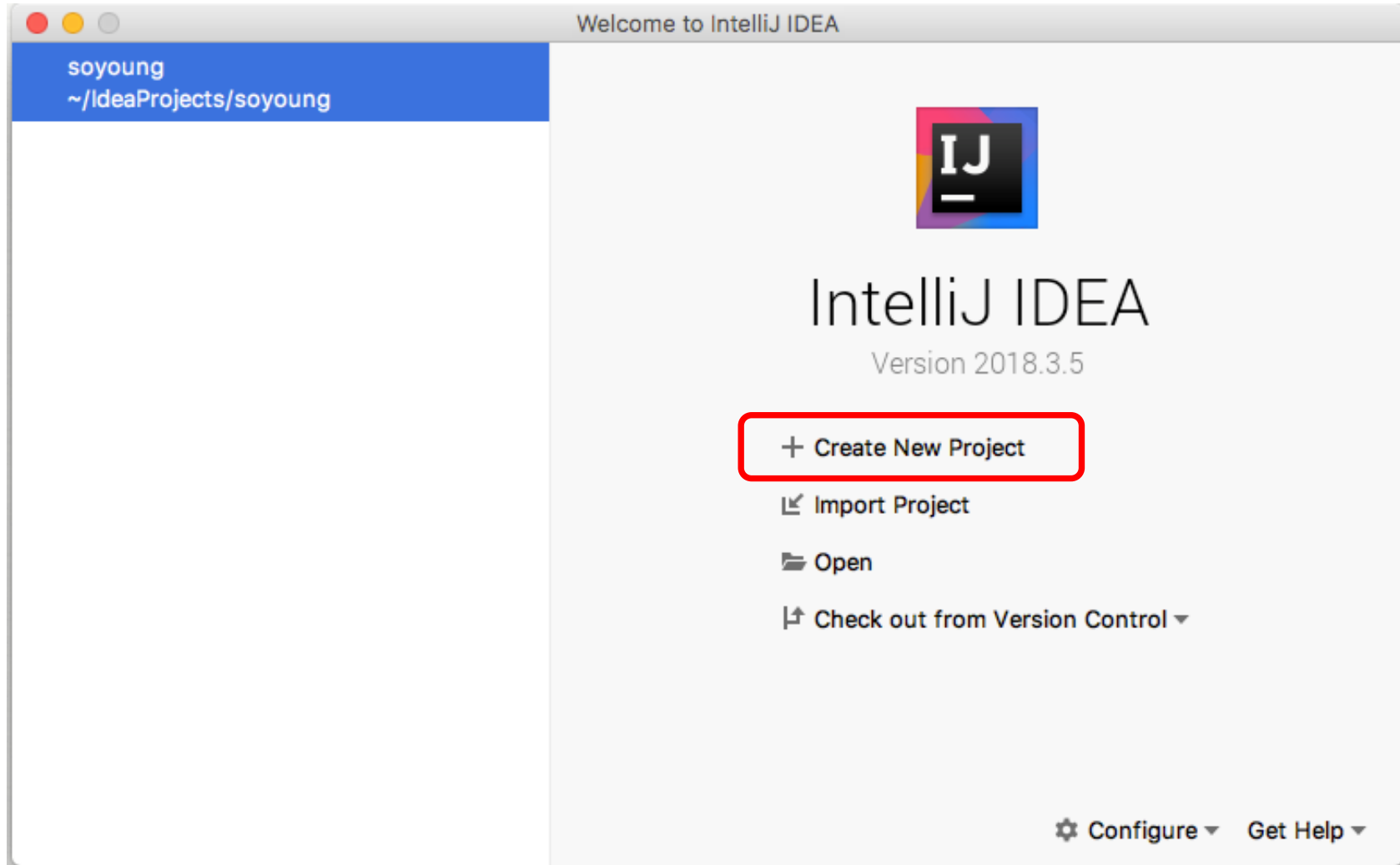
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공식 홈페이지의  
훌륭한 문서화

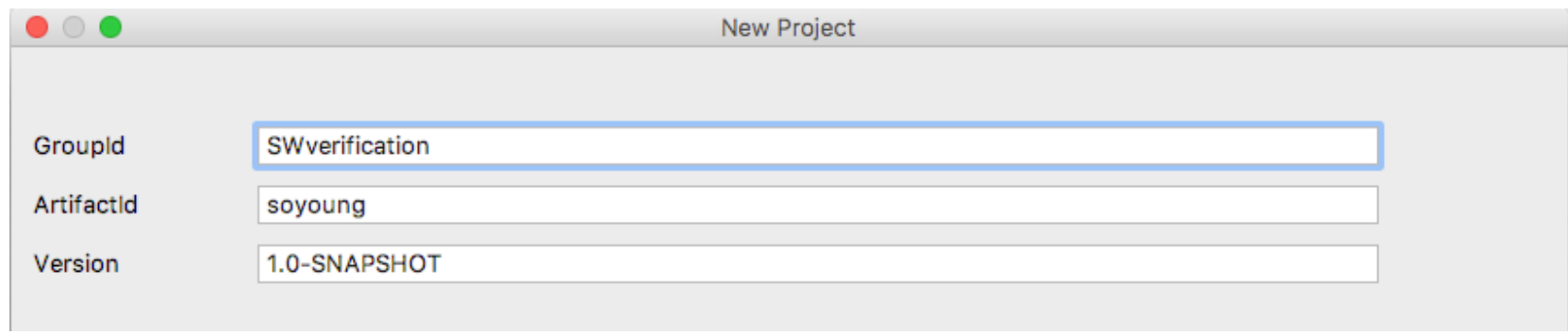
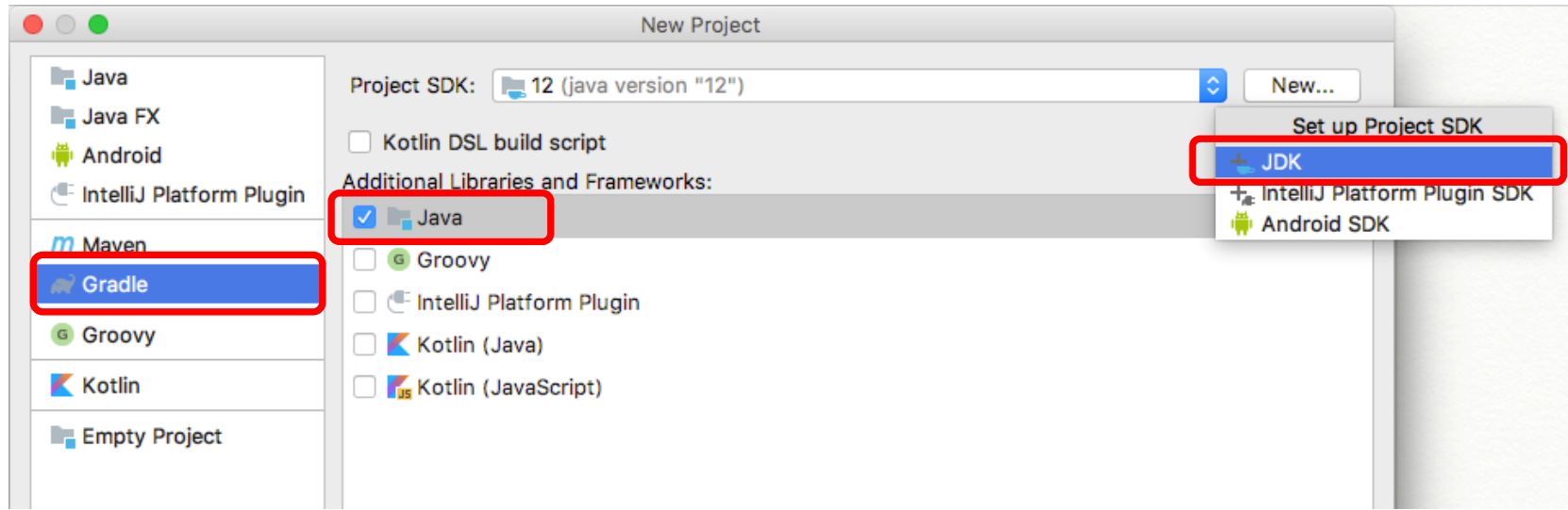


01 >> IntelliJ IDEA 실행

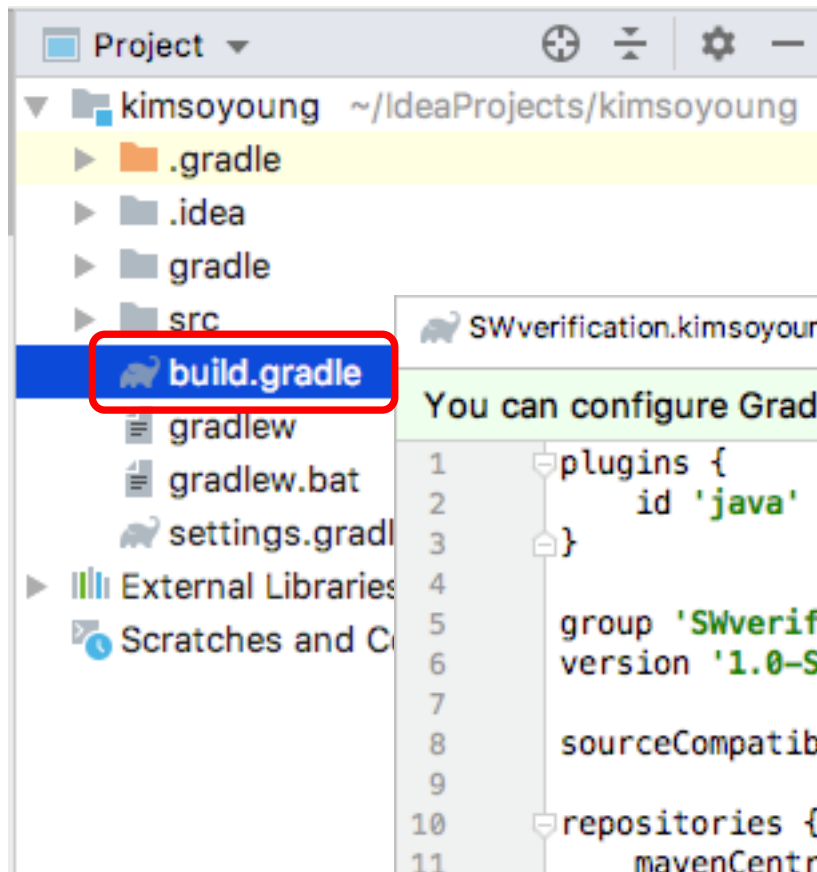


## »» Gradle, java 프로젝트 생성

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01 >> build.gradle 생성됨



```
SWverification.kimsoyoung x
You can configure Gradle wrapper to use distribution with sources. It will provi
1  plugins {
2      id 'java'
3  }
4
5  group 'SWverification'
6  version '1.0-SNAPSHOT'
7
8  sourceCompatibility = 1.8
9
10 repositories {
11     mavenCentral()
12 }
13
14 dependencies {
15     testCompile group: 'junit', name: 'junit', version: '4.12'
16 }
```

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01 >> main code

```
02 1 package TestPackage;
03 2
04 3 public class Calculator {
05 4     public int add(int a, int b){
06 5         return a+b;
07 6     }
08 7 }
```

05 >> test code

```
1 package TestPackage;
2
3 import org.junit.Test;
4
5 import static org.hamcrest.CoreMatchers.is;
6 import static org.junit.Assert.assertThat;
7
8 public class TestClass {
9
10     @Test
11     public void test_add(){
12         System.out.println("calculator");
13         Calculator cal = new Calculator();
14
15         int sum = cal.add( a: 2, b: 3);
16         assertThat(sum, is( value: 5));
17     }
18 }
```



01 >> IntelliJ terminal 에 ./gradlew build 입력

02 >> **BUILD FAILED** 인 경우

03 kimjaewooui-MacBook-Pro:soyoung kimjaewoo `./gradlew build`

04 > Task :test

TestPackage.TestClass > test\_add FAILED  
java.lang.AssertionError at TestClass.java:16

1 test completed, 1 failed

> Task :test FAILED

FAILURE: Build failed with an exception.

\* What went wrong:  
Execution failed for task ':test'.  
> There were failing tests. See the report at: <file:///Users/kimjaewoo/IdeaProjects/soyoung/build/reports/tests/test/index.html>

\* Try:  
Run with `--stacktrace` option to get the stack trace. Run with `--info` or `--debug` option to get more log output. Run with `--scan` to get full insights.

\* Get more help at <https://help.gradle.org>

Deprecated Gradle features were used in this build, making it incompatible with Gradle 5.0.  
Use `'--warning-mode all'` to show the individual deprecation warnings.  
See [https://docs.gradle.org/4.10/userguide/command\\_line\\_interface.html#sec:command\\_line\\_warnings](https://docs.gradle.org/4.10/userguide/command_line_interface.html#sec:command_line_warnings)

**BUILD FAILED** in 9s  
4 actionable tasks: 4 executed

01 >> IntelliJ terminal 에 ./gradlew build 입력

02 >> **BUILD SUCCESSFUL** 인 경우

03 kimjaewooui-MacBook-Pro:soyoung kimjaewoo\$ ./gradlew build

04 Deprecated Gradle features were used in this build, making it incompatible with Gradle 5.0.

Use '--warning-mode all' to show the individual deprecation warnings.

05 See [https://docs.gradle.org/4.10/userguide/command\\_line\\_interface.html#sec:command\\_line\\_warnings](https://docs.gradle.org/4.10/userguide/command_line_interface.html#sec:command_line_warnings)

**BUILD SUCCESSFUL** in 2s

4 actionable tasks: 2 executed, 2 up-to-date

# Github

분산 버전 관리의 대명사

# ?

분산 버전 관리 git?



깃(Git)은 컴퓨터 파일의 변경사항을 추적, 작업을 조율하기 위한 분산 버전 관리 시스템이다. 소프트웨어 개발을 할 때 소스 코드 관리에 주로 사용된다. 2005년에 리눅스 커널 개발을 위해 리누스 토르발스가 처음 개발하였다. 네트워크 접속이나 중앙 서버와는 독립적으로 동작하는 완전한 이력, 버전 추적 기능을 제공하는 성숙한 저장소이다.

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## Advantages

- 프로젝트에 상관없이 무료로 제공
- 웹 기반 서비스 제공
- IntelliJ IDE에서 git 연동 제공
- Fork 기능을 통한 소스코드의 **손쉬운 참여**

“Github는 오픈소스 개발에 입문하는 장벽을 낮춰, 누구나 오픈소스 프로젝트에 참여할 수 있게 만들었다.”



## Achievement

- 200여개 국가, 2800만명 이용자, 180만 기업
- 6700만 개 이상의 레포지토리(repo), 10억 건 이상의 커밋
- 18년 MS가 8조에 인수

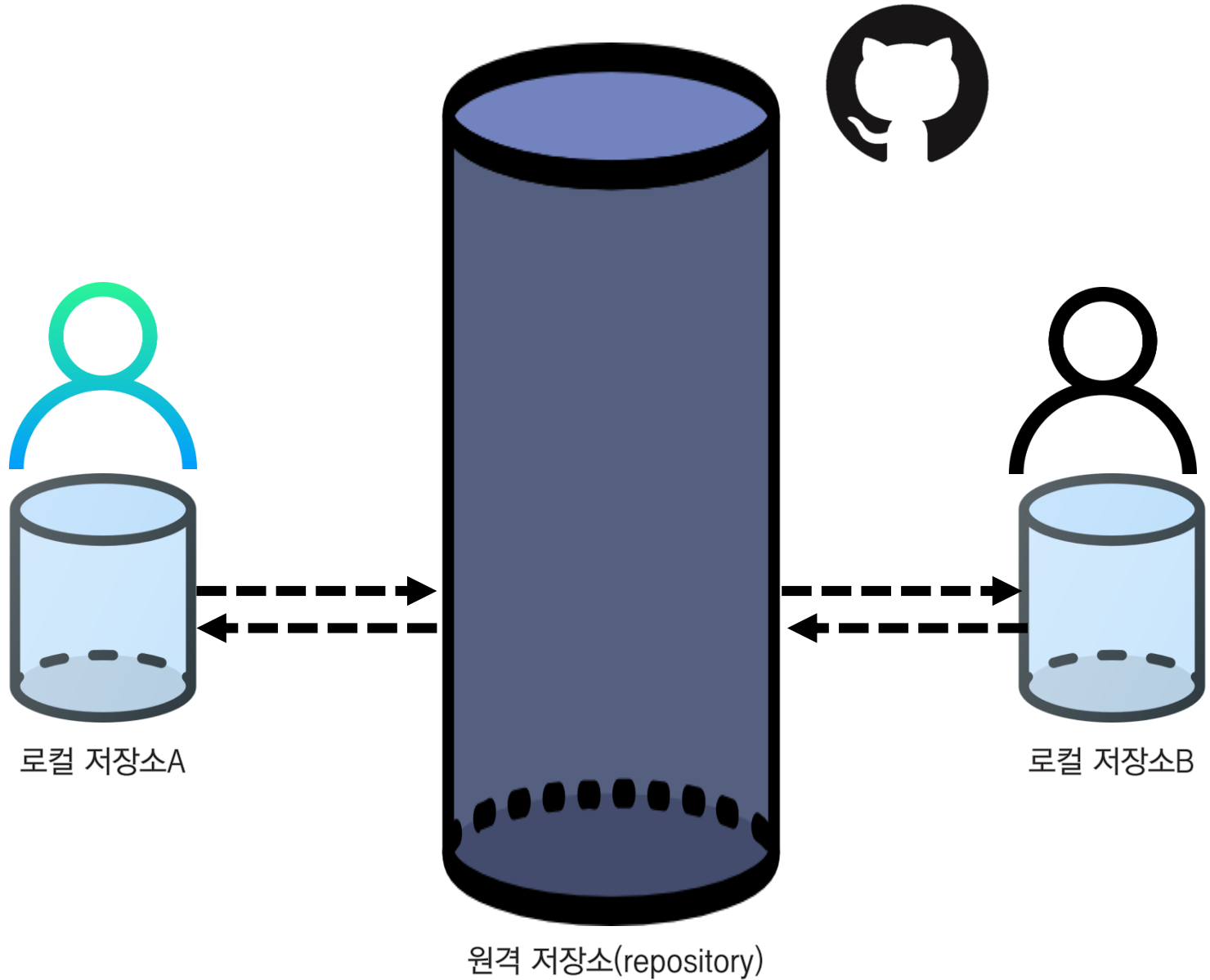


## Trend

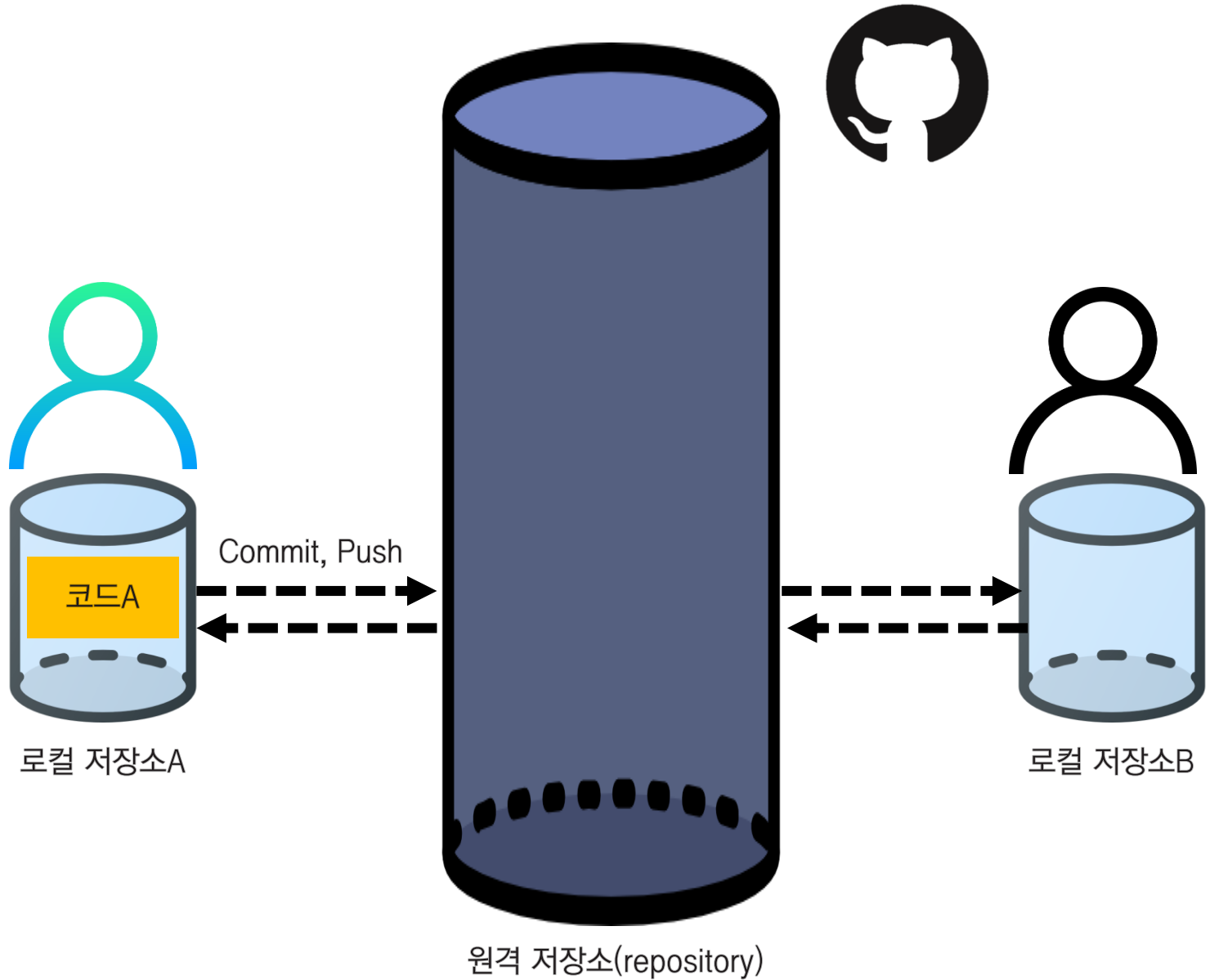
디지털 혁신에서 OSS의 활용 선택 아닌 필수

내부 소프트웨어 역량 강화  
외부 OSS 커뮤니티와 협업 체계 구축

- 01
- 02
- 03
- 04
- 05

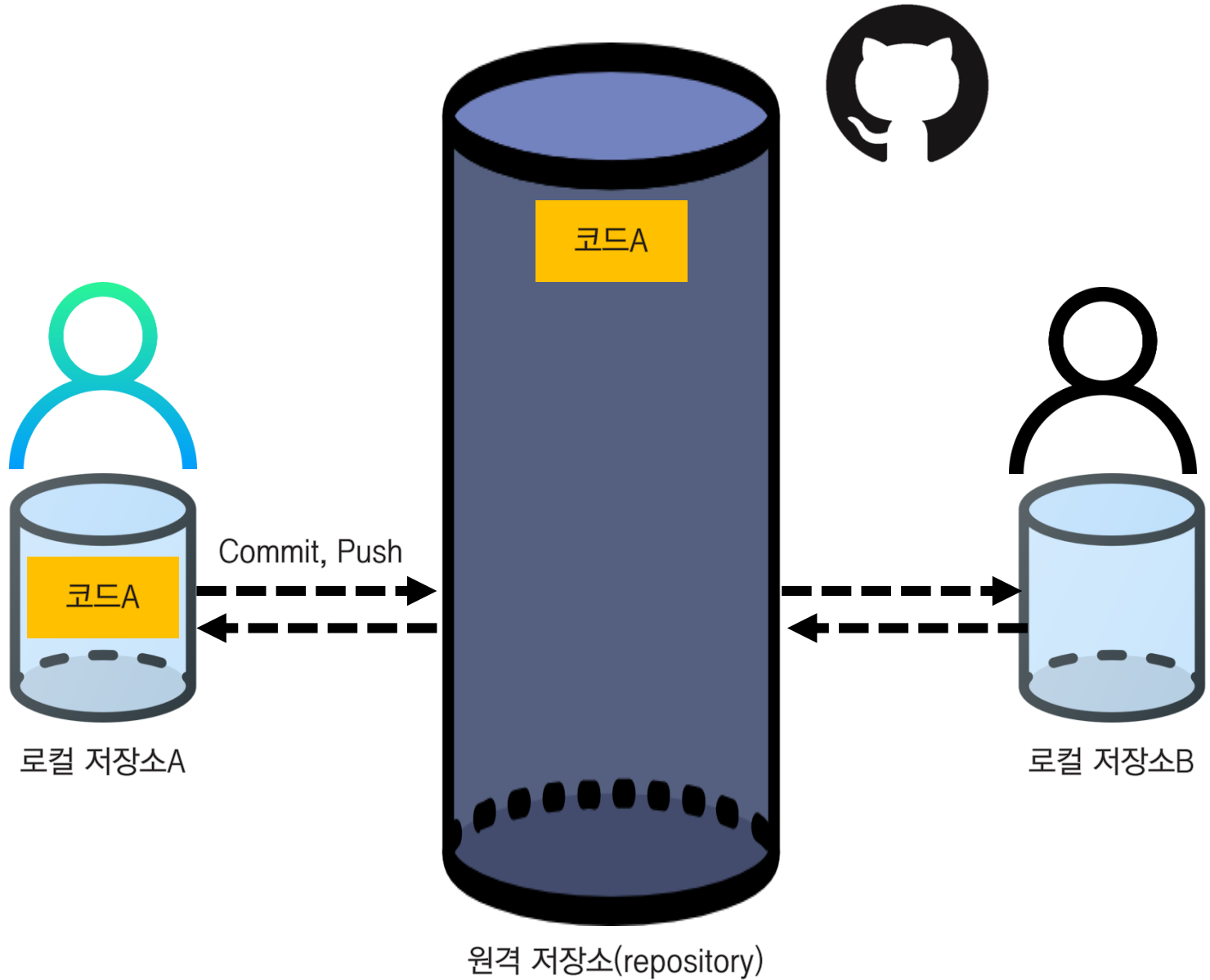


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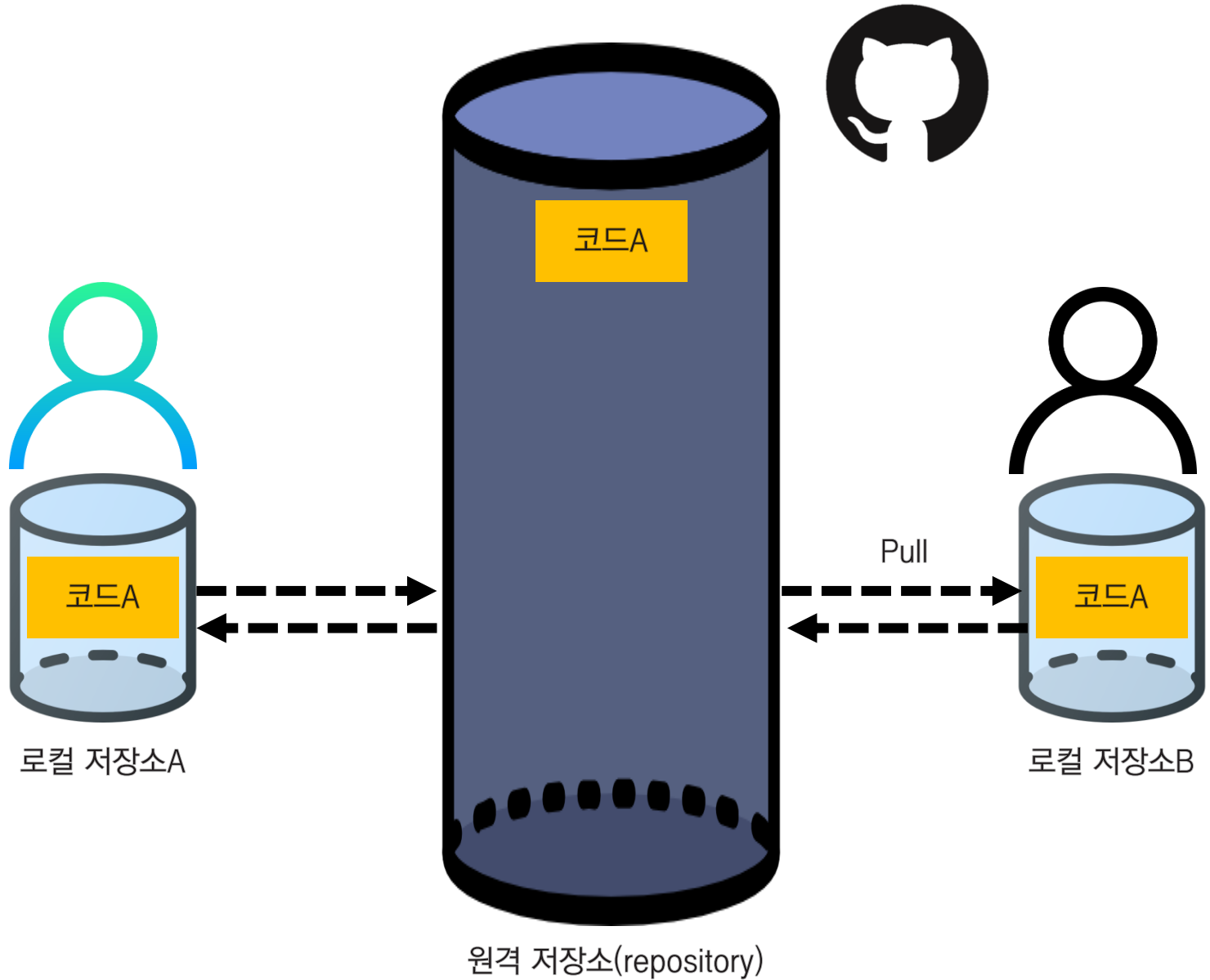




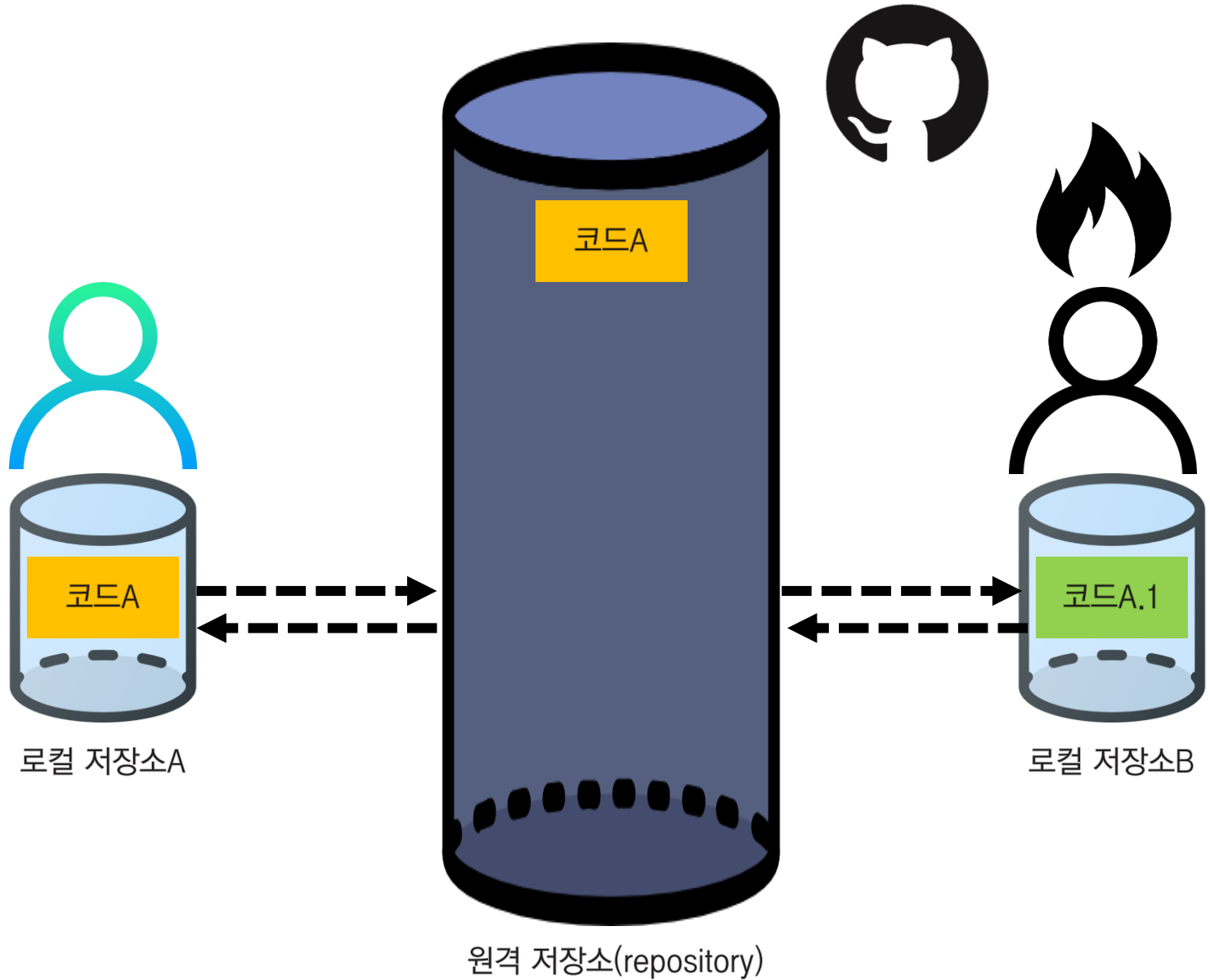
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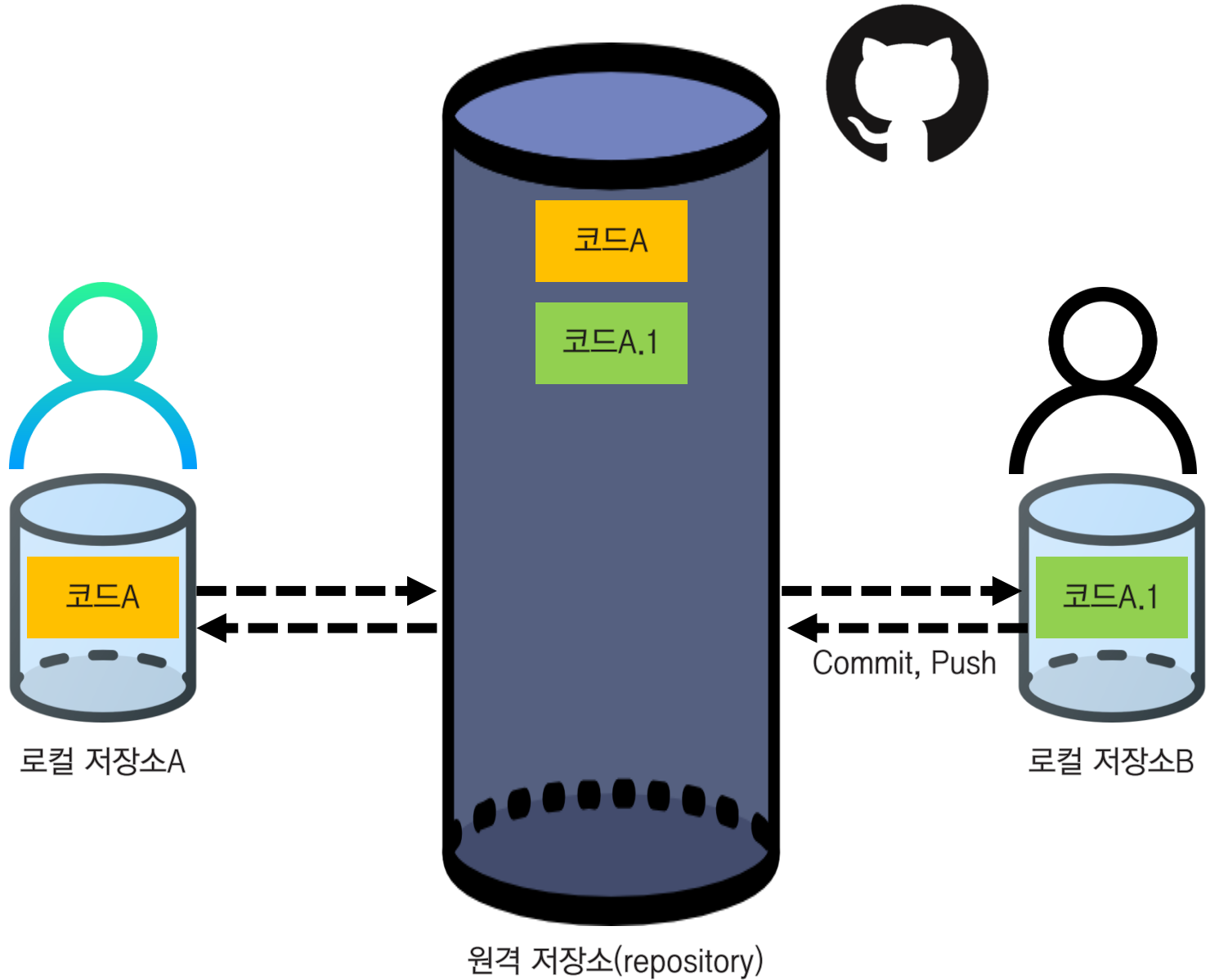
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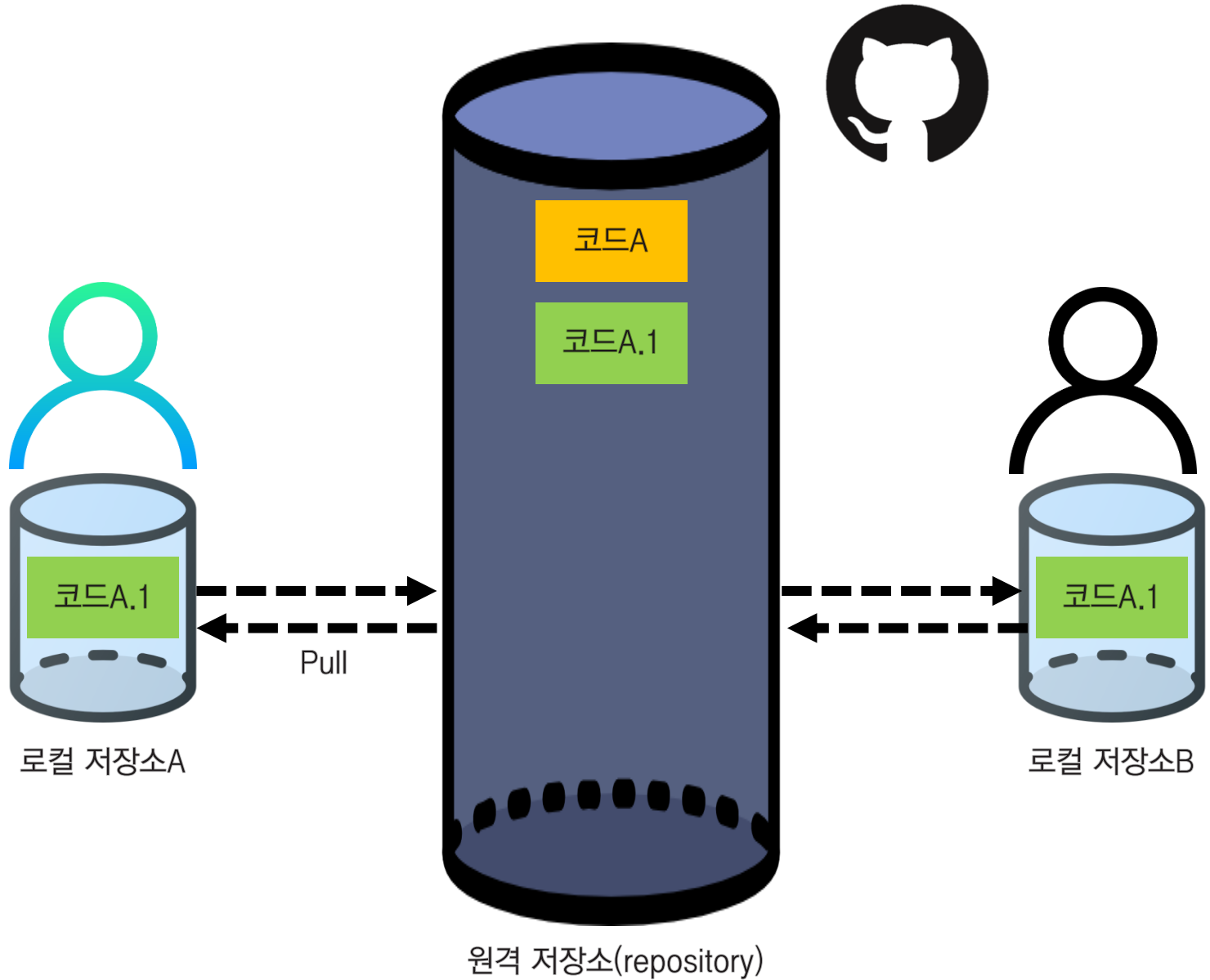
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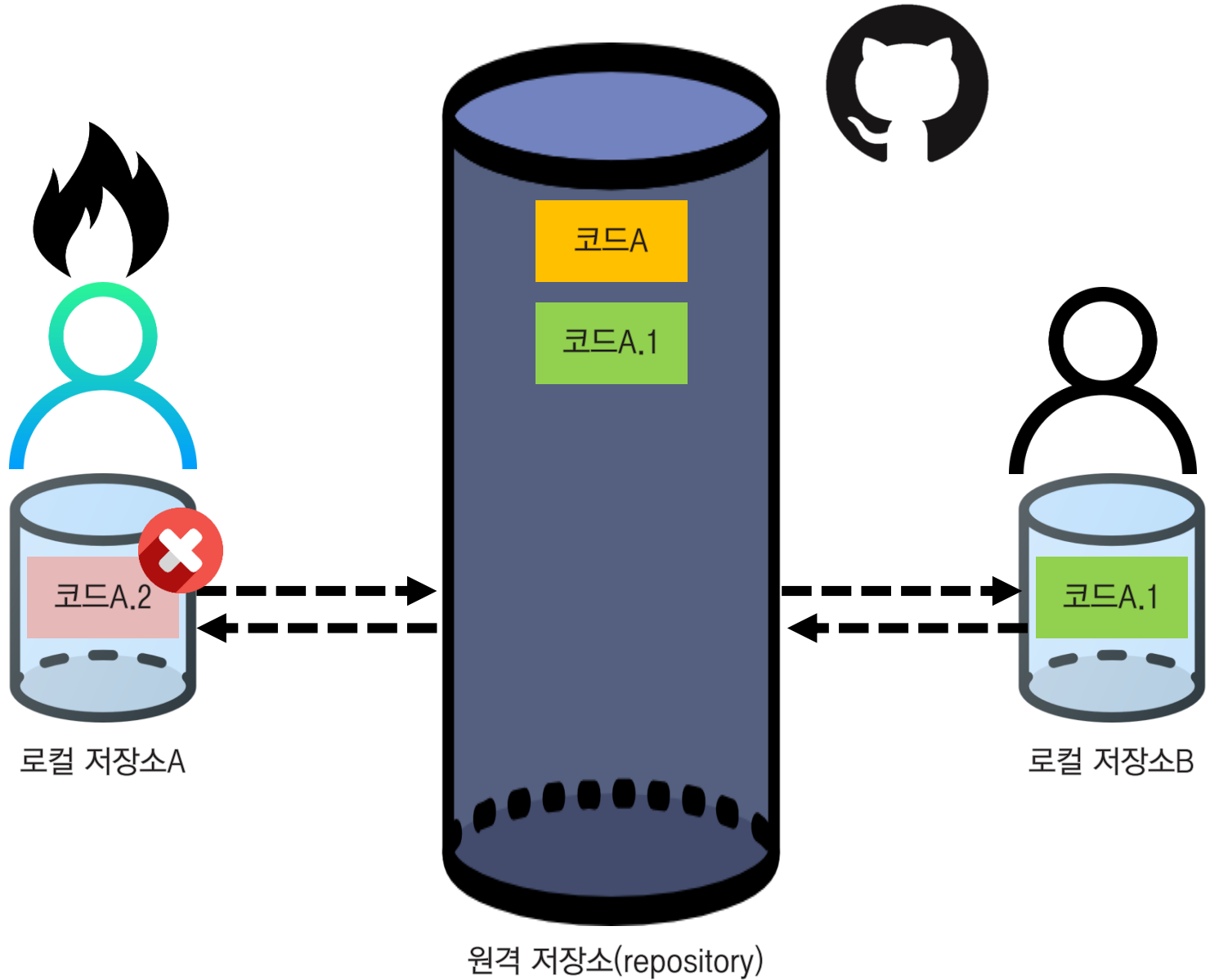
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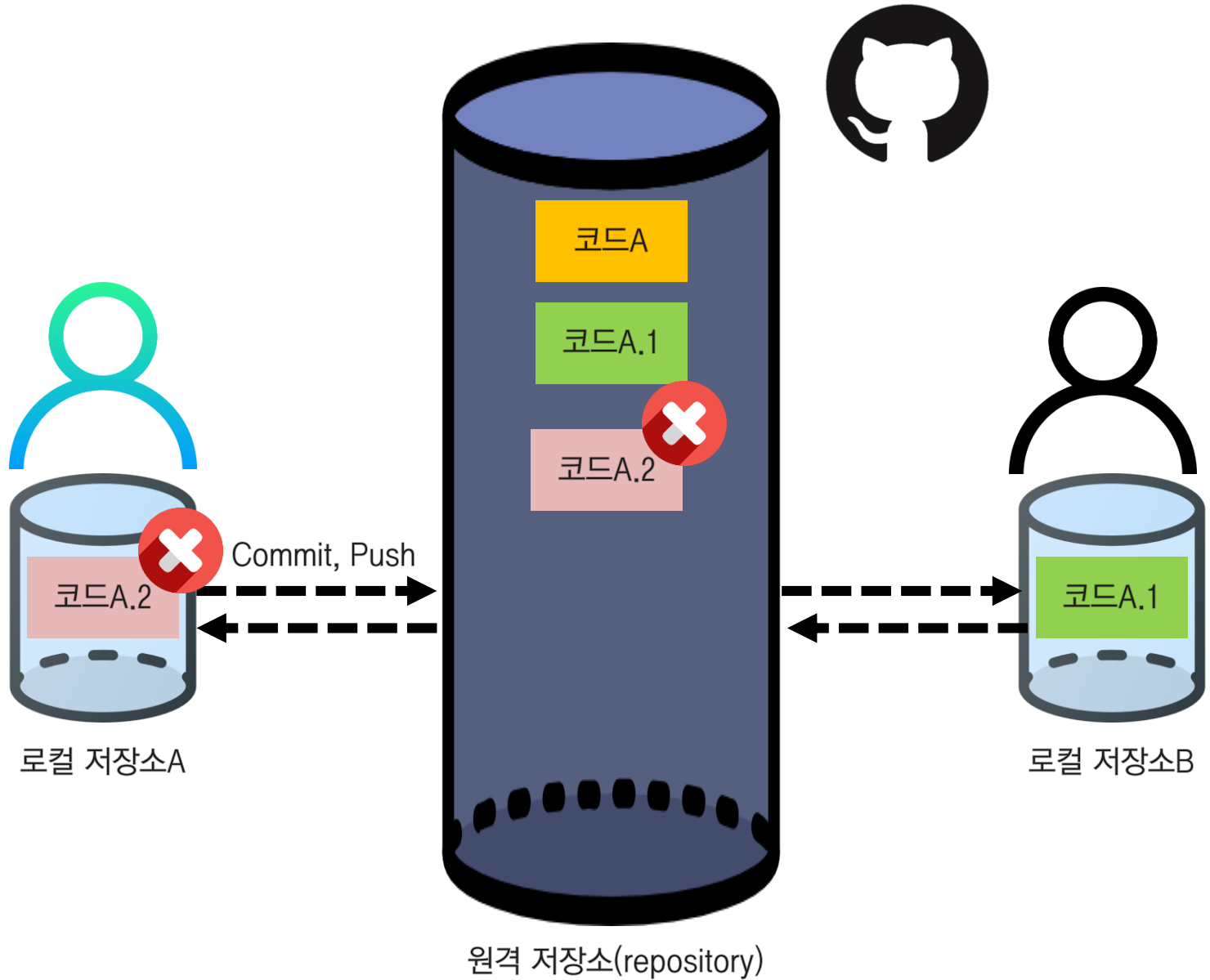
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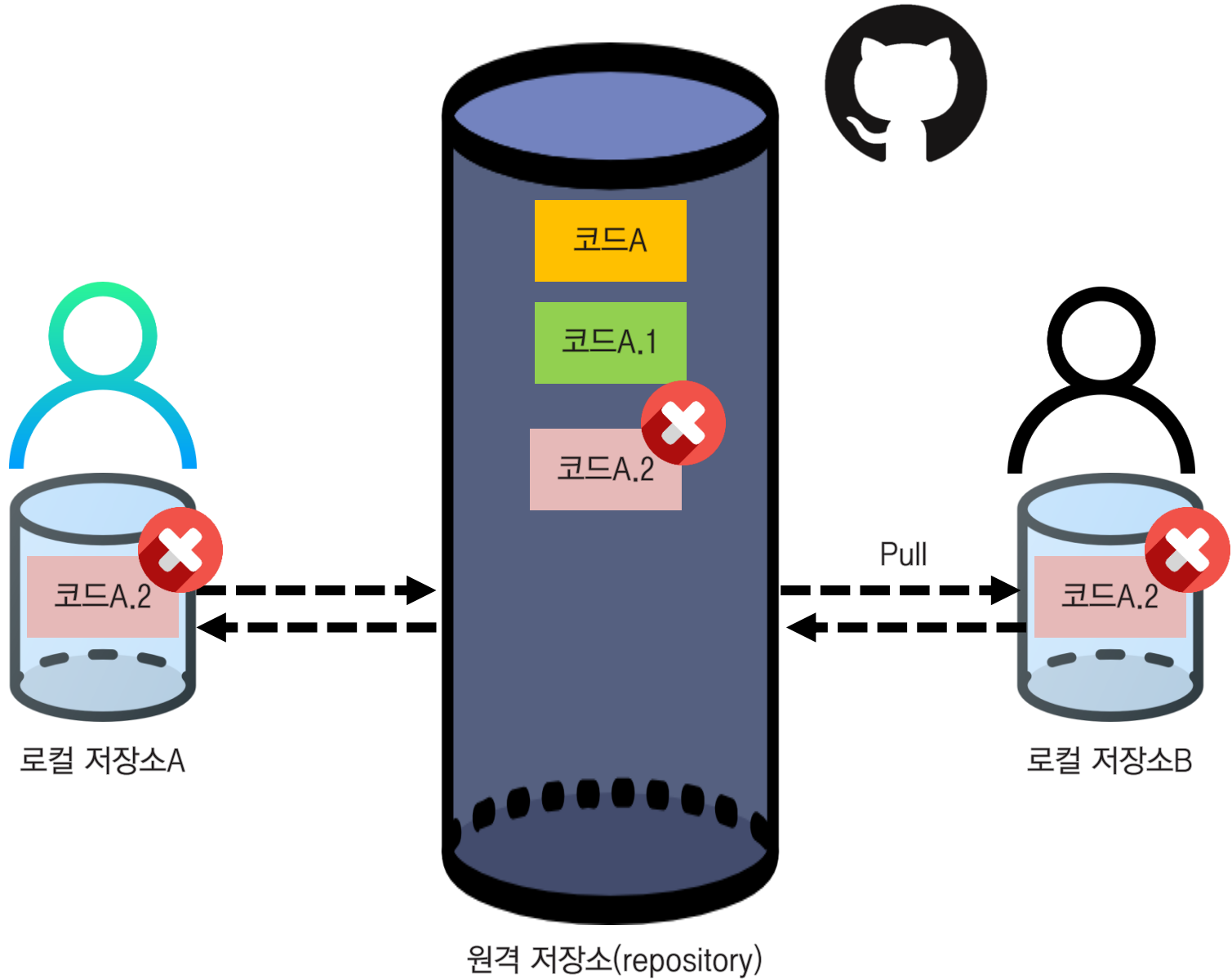
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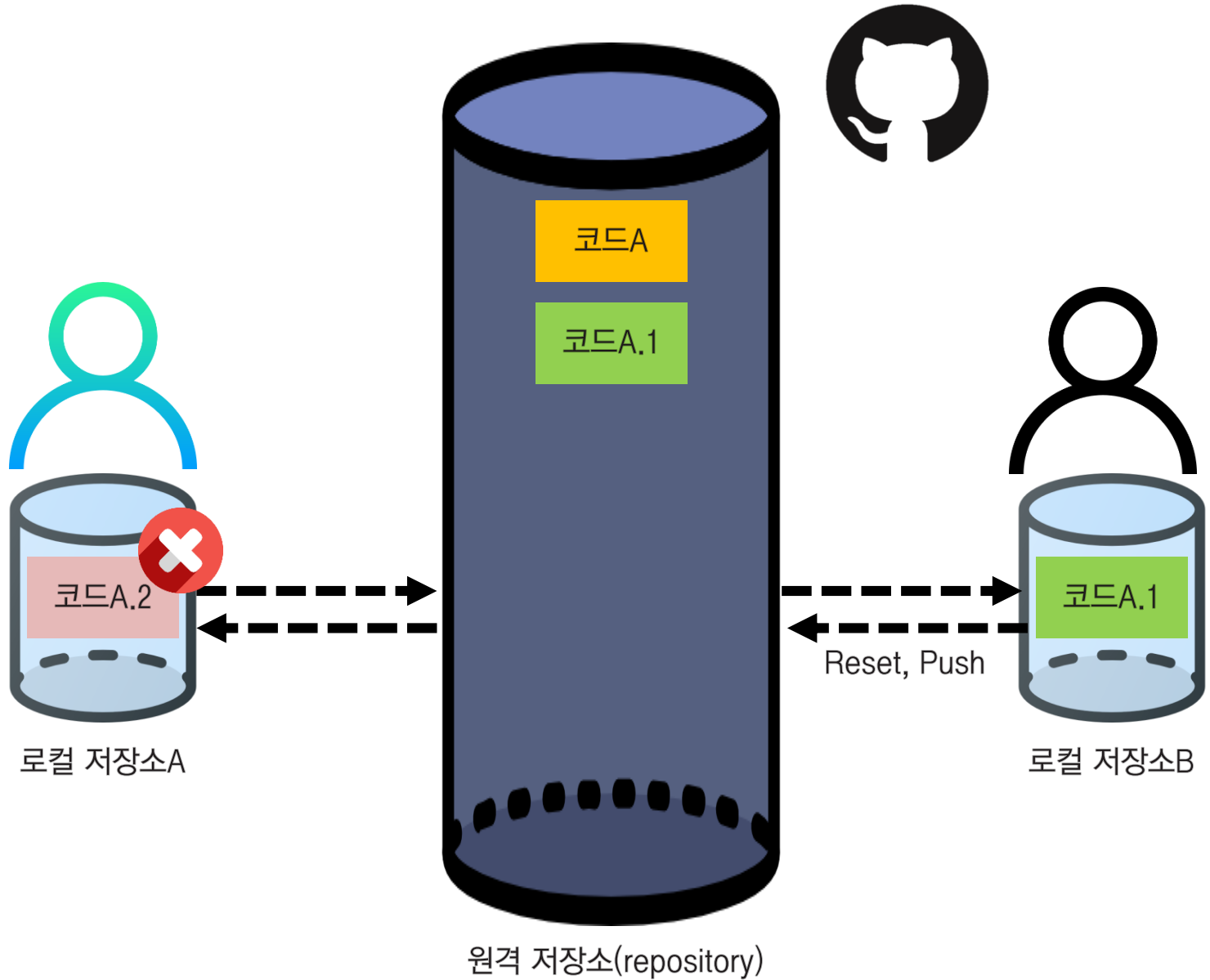


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»» 시나리오

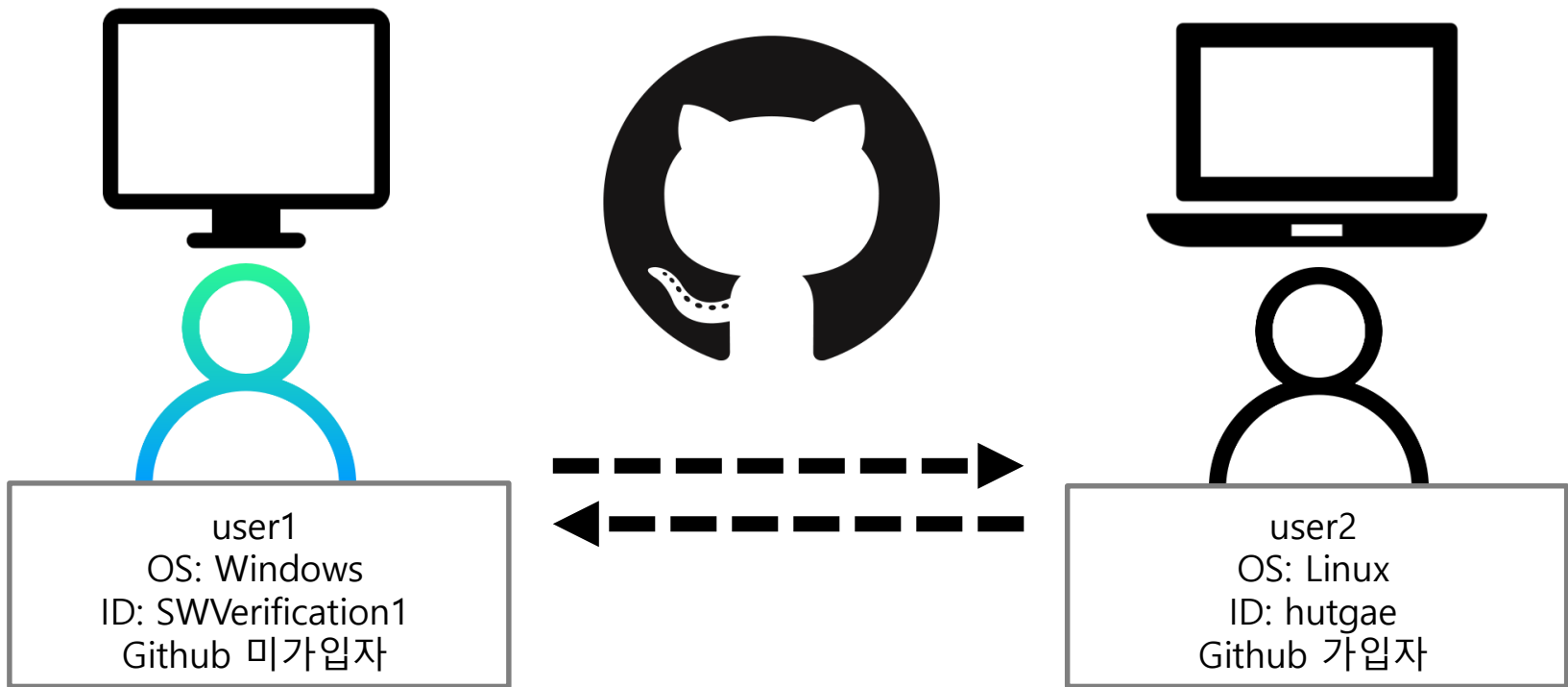
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02

03

04

05



## 04 >> Github 회원가입[user1]

**Join GitHub**  
The best way to design, build, and ship software.

**Step 1:** Set up your account | **Step 2:** Choose your plan | **Step 3:** Tailor your experience

Create your personal account

There were problems creating your account.

**Username \***

Login can't be blank

Email can't be blank

Password can't be blank

**You'll love GitHub**

- Unlimited public repositories
- Unlimited private repositories
- ✓ Limitless collaboration
- ✓ Frictionless development
- ✓ Open source community

당신이 진짜 사람인지 알 수 있도록 이 퍼즐을 풀어주세요

검증하기

## »» Github 회원가입[user1]

### Welcome to GitHub

You're a few steps away from building better software, @SWVerification1.

<input checked="" type="checkbox"/> <b>Completed</b> Set up your account	<input type="checkbox"/> <b>Step 2:</b> Choose your plan	<input type="checkbox"/> <b>Step 3:</b> Personalize your experience
---	---	--

#### Choose your plan

With tools developers love and the world's largest open source community, there's no wrong choice.

 <b>Free</b> The basics of GitHub for every developer	 <b>Pro</b> Pro tools for developers with advanced requirements
<b>\$0</b> per month	<b>\$7</b> per month <a href="#">(view in KRW)</a>
<b>Includes:</b> <ul style="list-style-type: none"><li>∞ Unlimited public and private repositories</li><li>✓ 3 collaborators for private repositories</li><li>✓ Issues and bug tracking</li><li>✓ Project management</li></ul>	<b>Includes:</b> <ul style="list-style-type: none"><li>∞ Unlimited public and private repositories</li><li>∞ Unlimited collaborators</li><li>✓ Issues and bug tracking</li><li>✓ Project management</li><li>✓ <a href="#">Advanced tools and insights</a></li></ul>

- Help me set up an organization next**  
Organizations are separate from personal accounts and are best suited for businesses who need to manage permissions for many employees.  
[Learn more about organizations](#)
- Send me updates on GitHub news, offers, and events**

01

02

03

04

05

## 01 >> Github 회원가입[user1]



### Please verify your email address

Before you can contribute on GitHub, we need you to verify your email address.  
An email containing verification instructions was sent to

Didn't get the email? [Resend verification email](#) or [change your email settings](#).

#### GitHub

- |                  |                |                 |         |
|------------------|----------------|-----------------|---------|
| Product          | Platform       | Support         | Company |
| Features         | Developer API  | Help            | About   |
| Security         | Partners       | Community Forum | Blog    |
| Enterprise       | Atom           | Training        | Careers |
| Customer stories | Electron       | Status          | Press   |
| Pricing          | GitHub Desktop | Contact GitHub  | Shop    |
| Resources        |                |                 |         |

01

02

03

04

05

## 원격저장소(repository) 만들기 [user1]

The screenshot shows the GitHub profile page for a user named 'SWVerification1'. The user's profile picture is a pink pixelated character. The page includes a search bar, navigation links for 'Pull requests', 'Issues', 'Marketplace', and 'Explore', and a notification bell. A dropdown menu is open, showing options: 'New repository' (highlighted with a red box), 'Import repository', 'New gist', 'New organization', and 'New project'. The user's profile statistics show 0 repositories, 0 projects, 0 stars, 0 followers, and 0 following. A search bar for repositories is present with filters for 'Type' and 'Language', and a 'New' button. A message states 'SWVerification1 doesn't have any public repositories yet.' The footer contains copyright information for 2019 GitHub, Inc. and various links like 'Terms', 'Privacy', 'Security', 'Status', 'Help', 'Contact GitHub', 'Pricing', 'API', 'Training', 'Blog', and 'About'.

01

02

03

04

05

## 원격저장소(repository) 만들기 [user1]



### Create a new repository

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

Owner: SWVerification1  
Repository name: test1

Great repository names are short and memorable. Need inspiration? How about automatic-computing-machine?

Description (optional)

Public  
 Private

Initialize this repository with a README

Add .gitignore: None | Add a license: None

Create repository

## 원격저장소(repository) 만들기 [user1]

The screenshot shows the GitHub interface for a newly created repository named 'SWVerification1 / test1'. At the top, there is a search bar and navigation links for 'Pull requests', 'Issues', 'Marketplace', and 'Explore'. Below the repository name, there are buttons for 'Watch', 'Star', and 'Fork', each with a count of 0. A secondary navigation bar includes 'Code', 'Issues', 'Pull requests', 'Projects', 'Wiki', 'Insights', and 'Settings'. The main content area features a description field with the text 'No description, website, or topics provided.' and an 'Edit' button. Below this, there are statistics for '1 commit', '1 branch', '0 releases', and '1 contributor'. A row of buttons includes 'Branch: master', 'New pull request', 'Create new file', 'Upload files', 'Find File', and 'Clone or download'. A file list shows 'README.md' as the only file, with its commit history. The content of the README.md file is displayed as 'test1'. At the bottom, there is a footer with copyright information for GitHub, Inc. and various links like 'Terms', 'Privacy', 'Security', 'Status', 'Help', 'Contact GitHub', 'Pricing', 'API', 'Training', 'Blog', and 'About'.

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## 01 &gt;&gt; Gitconfig 설정 [user1]

```
02 김 건 우 @DESKTOP-1CO3KOK MINGW64 ~  
03 $ git config --global user.name "SWverification1"  
04 김 건 우 @DESKTOP-1CO3KOK MINGW64 ~  
05 $ git config --global user.email "tmffka789@gmail.com"  
김 건 우 @DESKTOP-1CO3KQK MINGW64 ~  
$
```

## 01 &gt;&gt; 로컬저장소 만들기 및 원격 저장소와 연결 [user1]

```
02 김 건 우 @DESKTOP-1C03KQK MINGW64 ~  
03 $ cd Documents  
04 김 건 우 @DESKTOP-1C03KQK MINGW64 ~/Documents  
$ mkdir test1  
05 김 건 우 @DESKTOP-1C03KQK MINGW64 ~/Documents  
$ cd test1  
김 건 우 @DESKTOP-1C03KQK MINGW64 ~/Documents/test1  
$ git init  
Initialized empty Git repository in C:/Users/김 건 우 /Documents/test1/.git/  
김 건 우 @DESKTOP-1C03KQK MINGW64 ~/Documents/test1 (master)  
$ git remote add origin https://github.com/SWVerification1/test1.git  
김 건 우 @DESKTOP-1C03KQK MINGW64 ~/Documents/test1 (master)  
$
```

## 01 &gt;&gt; 파일 변경 및 확인 [user1]

```
02 김 건 우 @DESKTOP-1C03KQK MINGW64 ~/Documents/test1 (master)
03 $ vim hello1.c
04 김 건 우 @DESKTOP-1C03KQK MINGW64 ~/Documents/test1 (master)
05 $ git add .
warning: LF will be replaced by CRLF in hello1.c.
The file will have its original line endings in your working directory
warning: LF will be replaced by CRLF in hello2.c.
The file will have its original line endings in your working directory
김 건 우 @DESKTOP-1C03KQK MINGW64 ~/Documents/test1 (master)
$ git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)

    new file:   hello1.c
    new file:   hello2.c

김 건 우 @DESKTOP-1C03KQK MINGW64 ~/Documents/test1 (master)
$ |
```

01 >>> git commit/push를 이용한 원격저장소 반영 [user1]

02 김 권 우 @DESKTOP-1CO3KQK MINGW64 ~/Documents/test1 (master)  
03 \$ git commit -m "Add new files: hello1.c, hello2.c"  
[master (root-commit) dc5cfe7] Add new files: hello1.c, hello2.c  
2 files changed, 10 insertions(+)  
04 create mode 100644 hello1.c  
create mode 100644 hello2.c

05 김 권 우 @DESKTOP-1CO3KQK MINGW64 ~/Documents/test1 (master)  
\$ git push origin +master  
Enumerating objects: 4, done.  
Counting objects: 100% (4/4), done.  
Delta compression using up to 4 threads  
Compressing objects: 100% (3/3), done.  
Writing objects: 100% (4/4), 391 bytes | 391.00 KiB/s, done.  
Total 4 (delta 0), reused 0 (delta 0)  
To https://github.com/SWVerification1/test1.git  
+ 58e94b5...dc5cfe7 master -> master (forced update)

김 권 우 @DESKTOP-1CO3KQK MINGW64 ~/Documents/test1 (master)  
\$ |

## 원격저장소 반영 결과 확인 [user1]

The screenshot shows the GitHub interface for a repository named 'SWVerification1 / test1'. The page displays the commit history for the 'master' branch. A specific commit is highlighted with a red box, showing the message 'Add new files: hello1.c, hello2.c' and the author 'SWVerification1' who committed an hour ago. The commit hash is 'dc5cfe7'. The page also includes navigation links for Code, Issues, Pull requests, Projects, Wiki, Insights, and Settings. The footer contains copyright information for GitHub, Inc. and various links like Terms, Privacy, Security, Status, Help, Contact GitHub, Pricing, API, Training, Blog, and About.

01

02

03

04

05

## ▶▶ 협업자(Collaborator) 설정 [user1]

Search or jump to... Pull requests Issues Marketplace Explore

SWVerification1 / test1 Watch 0 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Insights Settings

Options Collaborators Branches Webhooks Notifications Integrations & services Deploy keys Moderation Interaction limits

Collaborators Push access to the repository

This repository doesn't have any collaborators yet. Use the form below to add a collaborator.

Search by username, full name or email address

You'll only be able to find a GitHub user by their email address if they've chosen to list it publicly. Otherwise, use their username instead.

hutgae Add collaborator

hutgae



01

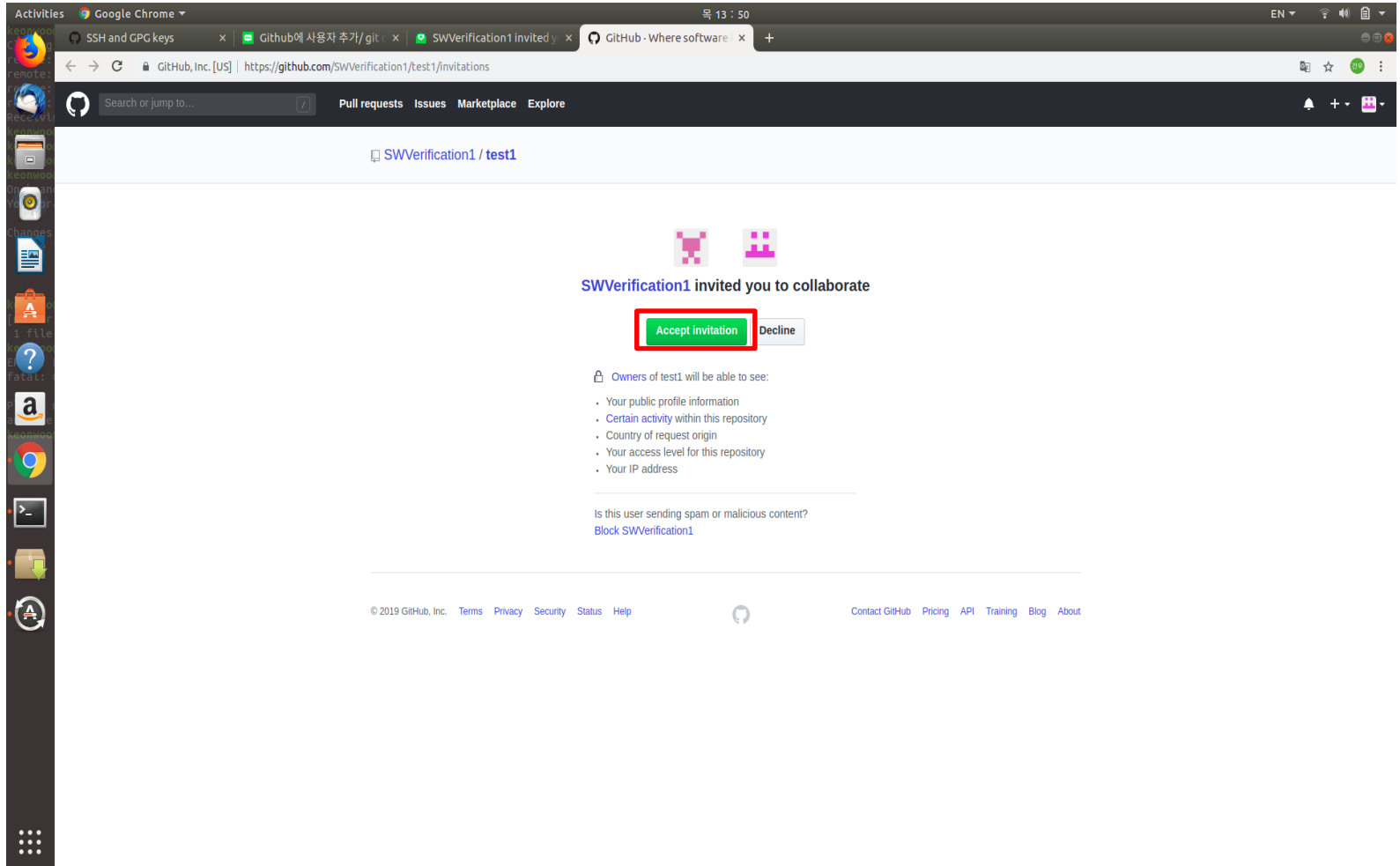
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## ▶▶ 협업자(Collaborator) 초대 승인 [user2]



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## 01 &gt;&gt; git 설치 및 git config 설정 [user2]

```
02 keonwoo@keonwoo-X542UAR:~$ sudo apt install git
03 [sudo] password for keonwoo:
04 패키지 목록을 읽는 중입니다... 완료
05 의존성 트리를 만드는 중입니다
상태 정보를 읽는 중입니다... 완료
The following additional packages will be installed:
  git-man liberror-perl
제안하는 패키지:
  git-daemon-run | git-daemon-sysvinit git-doc git-el git-email git-gui gitk gitweb git-cvs git-mediawiki git-svn
다음 새 패키지를 설치할 것입니다:
  git git-man liberror-perl
0개 업그레이드, 3개 새로 설치, 0개 제거 및 474개 업그레이드 안 함.
4,733 k바이트 아카이브를 받아야 합니다.
이 작업 후 33.9 M바이트의 디스크 공간을 더 사용하게 됩니다.
계속 하시겠습니까? [Y/n] y
받기:1 http://kr.archive.ubuntu.com/ubuntu bionic/main amd64 liberror-perl all 0.17025-1 [22.8 kB]
받기:2 http://kr.archive.ubuntu.com/ubuntu bionic-updates/main amd64 git-man all 1:2.17.1-1ubuntu0.4 [803 kB]
받기:3 http://kr.archive.ubuntu.com/ubuntu bionic-updates/main amd64 git amd64 1:2.17.1-1ubuntu0.4 [3,907 kB]
내려받기 4,733 k바이트, 소요시간 1초 (4,921 k바이트/초)
Selecting previously unselected package liberror-perl.
(데이터베이스 읽는중 ...현재 134535개의 파일과 디렉터리가 설치되어 있습니다.)
Preparing to unpack .../liberror-perl_0.17025-1_all.deb ...
Unpacking liberror-perl (0.17025-1) ...
Selecting previously unselected package git-man.
Preparing to unpack .../git-man_1%3a2.17.1-1ubuntu0.4_all.deb ...
Unpacking git-man (1:2.17.1-1ubuntu0.4) ...
Selecting previously unselected package git.
Preparing to unpack .../git_1%3a2.17.1-1ubuntu0.4_amd64.deb ...
Unpacking git (1:2.17.1-1ubuntu0.4) ...
git-man (1:2.17.1-1ubuntu0.4) 설정하는 중입니다 ...
liberror-perl (0.17025-1) 설정하는 중입니다 ...
Processing triggers for man-db (2.8.3-2) ...
keonwoo@keonwoo-X542UAR:~$ git config --global user.name "tmffka7"
keonwoo@keonwoo-X542UAR:~$ git config --global user.email tmffka789@naver.com
```



## 01 &gt;&gt; git clone을 통한 저장소 복사, 수정 반영 [user2]

```
02 keonwoo@keonwoo-X542UAR:~$ git clone -b master git@github.com:SWVerification1/test1
Cloning into 'test1'...
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 4 (delta 0), reused 4 (delta 0), pack-reused 0
Receiving objects: 100% (4/4), done.
03 keonwoo@keonwoo-X542UAR:~$ cd test1/
keonwoo@keonwoo-X542UAR:~/test1$ vim hello2.c
keonwoo@keonwoo-X542UAR:~/test1$ git add hello2.c
keonwoo@keonwoo-X542UAR:~/test1$ git status
On branch master
Your branch is up to date with 'origin/master'.

Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

    modified:   hello2.c

keonwoo@keonwoo-X542UAR:~/test1$ git commit -m "Modified file: hello2.c"
[master ee6cdab] Modified file: hello2.c
 1 file changed, 1 insertion(+), 1 deletion(-)
keonwoo@keonwoo-X542UAR:~/test1$ git push origin master
ERROR: Permission to SWVerification1/test1.git denied to hutgae.
fatal: Could not read from remote repository.

Please make sure you have the correct access rights
and the repository exists.
keonwoo@keonwoo-X542UAR:~/test1$ git push origin master
Counting objects: 3, done.
Delta compression using up to 8 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 326 bytes | 326.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To github.com:SWVerification1/test1
 dc5cfe7..ee6cdab master -> master
keonwoo@keonwoo-X542UAR:~/test1$
```

01

02

03

04

05

## 원격저장소 반영 결과 확인 [user2]

The screenshot shows the GitHub interface for a repository named 'SWVerification1 / test1'. The page displays the commit history for the 'master' branch. Two commits are visible, both dated 'Mar 21, 2019'. The first commit, by user 'hutgae', is titled 'Modified file: hello2.c' and has a commit hash of 'ee6cdab'. The second commit, by 'SWVerification1', is titled 'Add new files: hello1.c, hello2.c' and has a commit hash of 'dc5cfe7'. A red rectangular box highlights the commit details for the second commit. The page includes navigation links for 'Code', 'Issues', 'Pull requests', 'Projects', 'Wiki', 'Insights', and 'Settings'. The footer contains copyright information for GitHub, Inc. and various links like 'Contact GitHub', 'Pricing', 'API', 'Training', 'Blog', and 'About'.

01

02

03

04

05

# CI Tool 선택

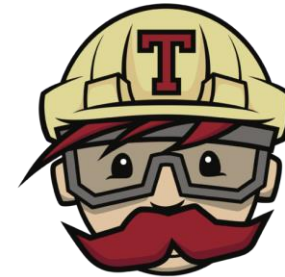
CI Server

01  
02  
03  
04  
05



**Jenkins**

VS

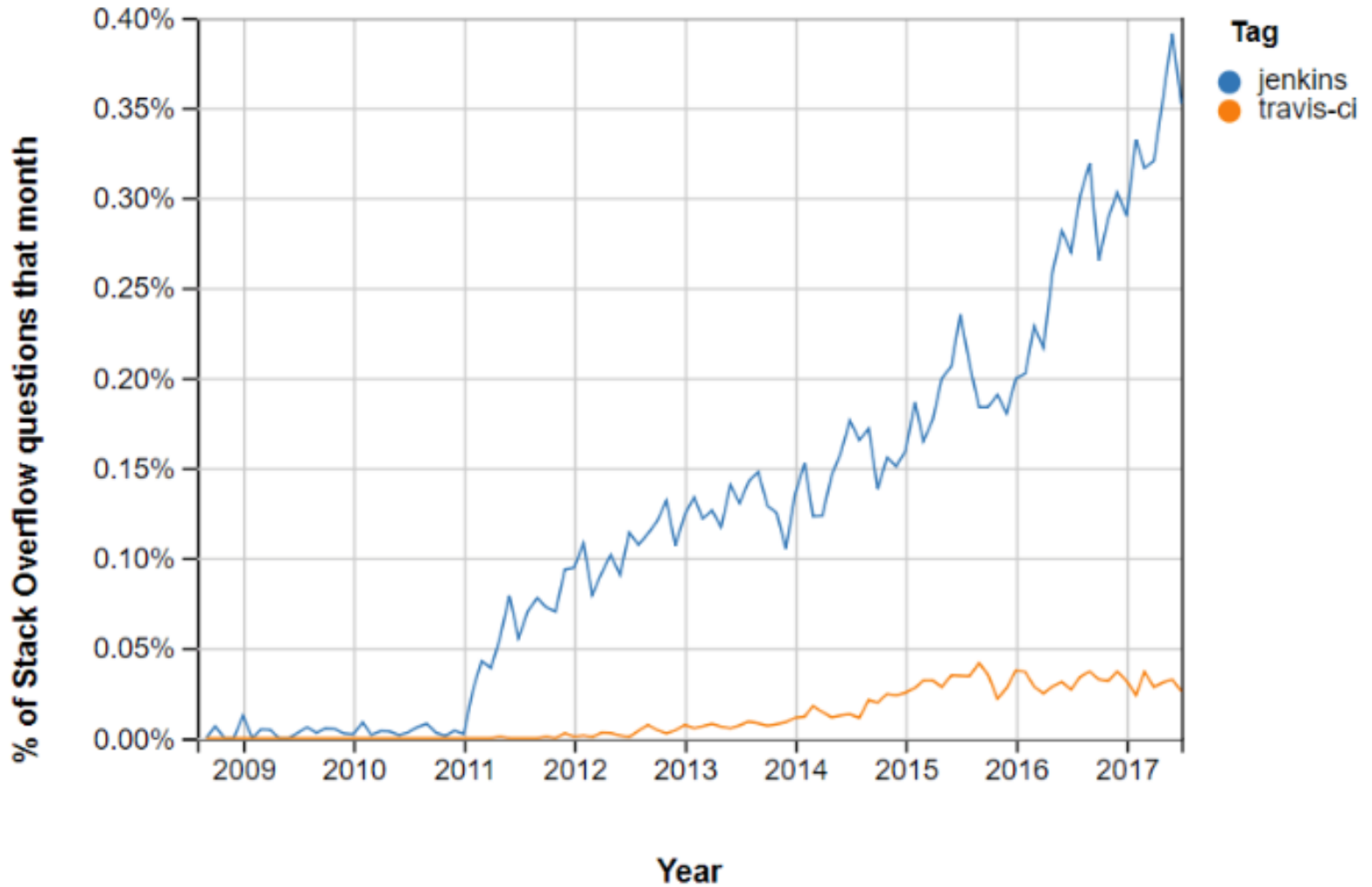


**Travis CI**

Cost	Free	Start at \$129 per month
Tool type	Open source	Commercial
Set up time	Long wait time for the complete installation	Very less time to get started
Performance	Best for unlimited customization options	Best for working in an open source project
Customization Options	More	Less

# Popularity Index

The number of questions labeled Jenkins and Travis in Stack Overflow.



01

02

03

04

05



# Jenkins

CI tool 로 Jenkins 선택

- ✓ Customization
- ✓ Extensive plugin
- ✓ Can add new functionality
- ✓ Good for Github

01

02

03

04

05

01  
02  
03  
04  
05

Jenkins

Blog Documentation Plugins Community Sub-projects About English Download

## Jenkins

Build great things at any scale

The leading open source automation server, Jenkins provides hundreds of plugins to support building, deploying and automating any project.

Documentation Download

### Meet the Continuous Delivery Foundation

The CDF serves as the vendor-neutral home of many of the fastest-growing projects for continuous delivery, including Jenkins, Jenkins X, Spinnaker, and Tekton.

Learn about CDF

CD.FOUNDATION

- Continuous Integration and Continuous Delivery
- Easy installation  
Jenkins is a self-contained Java-based program.
- Easy configuration  
Jenkins can be easily set up and configured via

01  
02  
03  
04  
05

The screenshot shows the Jenkins website's download page. At the top, there is a navigation bar with links for Blog, Documentation, Plugins, Community, Sub-projects, About, and English, along with a Download button. Below the navigation bar, there are two columns of text. The left column is for Jenkins 2.164.1, and the right column is for Jenkins 2.168. Both columns have a 'Deploy to Azure' button and a list of operating systems. The 'Windows' option in the left column is highlighted with a red box.

**Jenkins** Blog Documentation Plugins Community Sub-projects About English Download

LTSL (long-term support) releases are chosen every 12 weeks from the stream of regular releases as the stable release for that time period. [Learn more...](#)

A new release is produced weekly to deliver bug fixes and features to users and plugin developers.

[Changelog](#) | [Past Releases](#)

[Changelog](#) | [Upgrade Guide](#) | [Past Releases](#)

**Deploy Jenkins 2.164.1**

[Deploy to Azure](#)

**Download Jenkins 2.164.1 for:**

- Docker
- FreeBSD
- Gentoo
- Mac OS X
- OpenBSD
- openSUSE
- Red Hat/Fedora/CentOS
- Ubuntu/Debian
- Windows**
- Generic Java package (.war)

**Download Jenkins 2.168 for:**

- Arch Linux
- Docker
- FreeBSD
- Gentoo
- Mac OS X
- OpenBSD
- openSUSE
- Red Hat/Fedora/CentOS
- Ubuntu/Debian
- OpenIndiana Hipster
- Windows
- Generic Java package (.war)

Once a Jenkins package has been downloaded, proceed to the [Installing Jenkins](#) section of the User Handbook.

Improve this page | [Page history](#)

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**Project**  
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**Community**  
[Users mailing list](#)  
[Developers mailing list](#)  
[Special Interest Groups](#)



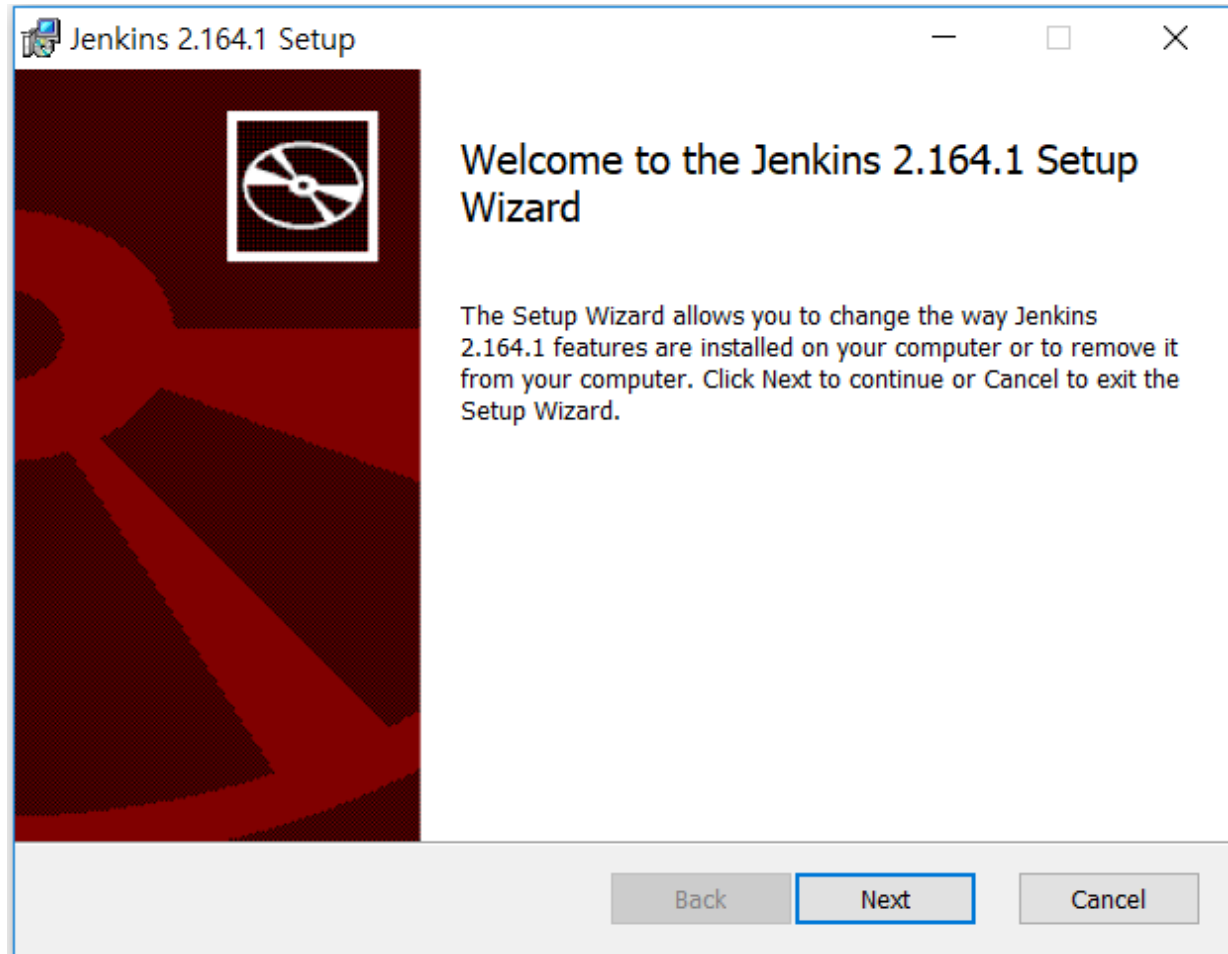
01

02

03

04

05



01

02

03

04

05

# Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log (not sure where to find it?) and this file on the server:

```
C:\Users\nesoy\.jenkins\secrets\initialAdminPassword
```

Please copy the password from either location and paste it below.

**Administrator password**

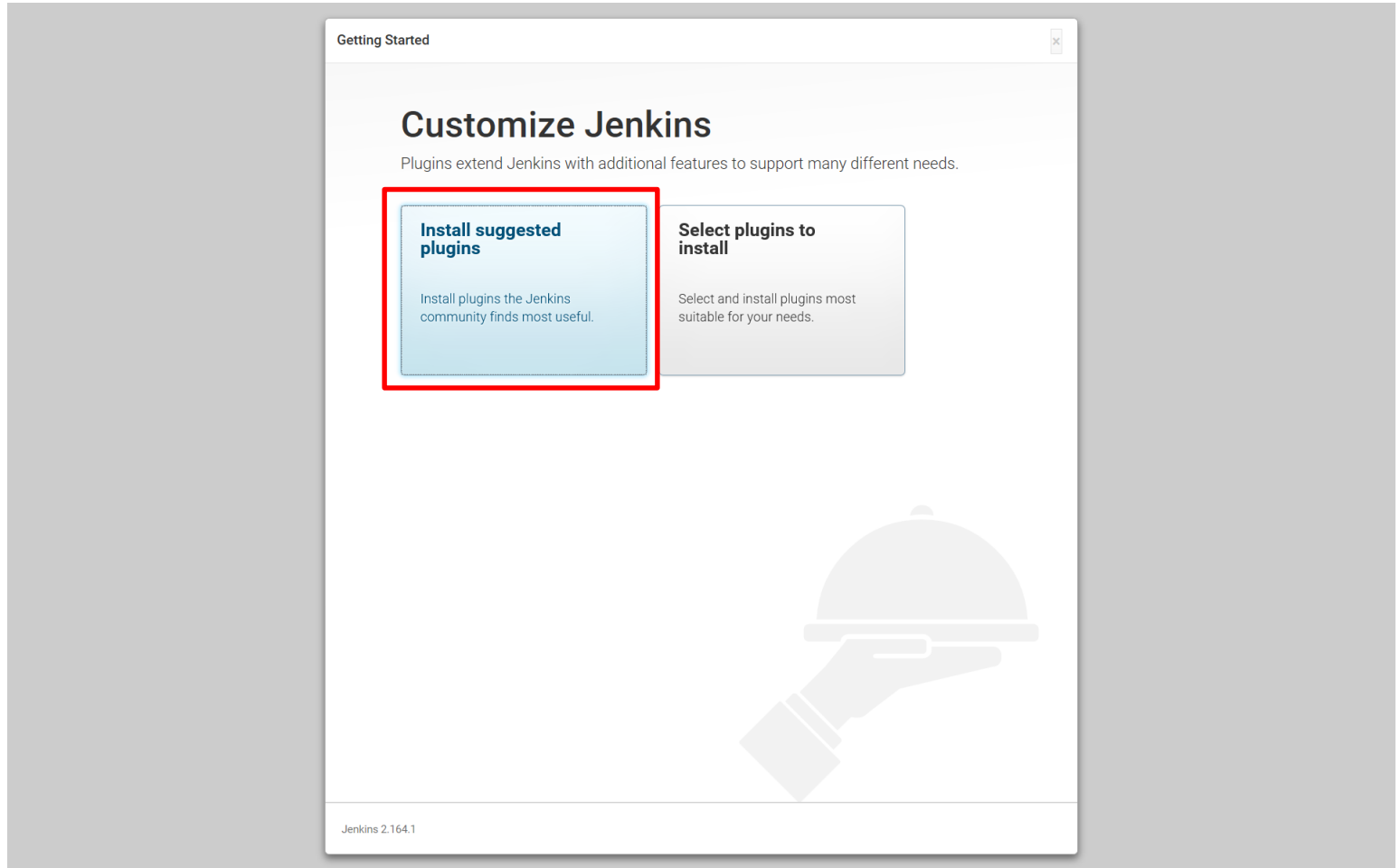
01

02

03

04

05



01  
02  
03  
04  
05

## Getting Started

✓ Folders	✓ OWASP Markup Formatter	✓ Build Timeout	✓ Credentials Binding	Folders ** JDK Tool ** Script Security ** Command Agent Launcher ** Structs ** Pipeline: Step API ** SCM API ** Pipeline: API ** bouncycastle API ** JUnit OWASP Markup Formatter ** Token Macro Build Timeout ** Credentials ** SSH Credentials ** Plain Credentials Credentials Binding Timestamp ** Pipeline: Supporting APIs ** Durable Task ** Pipeline: Nodes and Processes ** Matrix Project ** Resource Disposer
✓ Timestamp	Workspace Cleanup	Ant	Gradle	
Pipeline	GitHub Branch Source	Pipeline: GitHub Groovy Libraries	Pipeline: Stage View	
Git	Subversion	SSH Slaves	Matrix Authorization Strategy	
PAM Authentication	LDAP	Email Extension	Mailer	

\*\* - required dependency

Jenkins 2.164.1

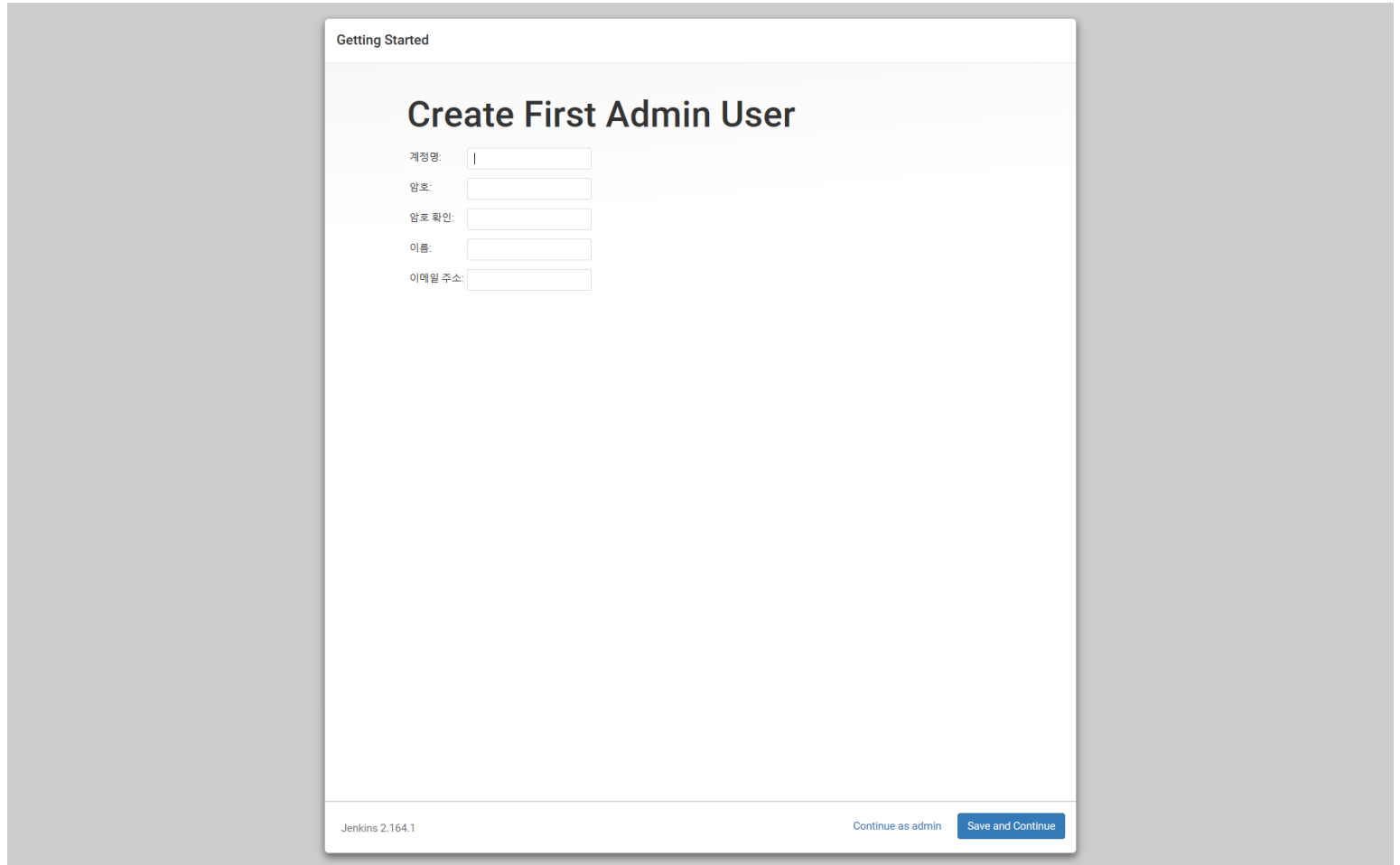
01

02

03

04

05



01

02

03

04

05

The screenshot shows the Jenkins web interface. At the top, there is a navigation bar with the Jenkins logo, a search bar, and the user name 'Keonwoo' with a '로그아웃' (Logout) link. Below the navigation bar, there is a sidebar with various links: '새로운 Item', '사람', '빌드 기록', 'Jenkins 관리', 'My Views', 'Credentials', 'Lockable Resources', and 'New View'. The main content area features a central message: 'Jenkins에 오신 것을 환영합니다.' (Welcome to Jenkins.) with a sub-message: '시작하려면 새 작업을 만들어 주시기 바랍니다.' (To get started, please create a new job.) To the right of this message is a link for '상세 내용 입력' (Enter details). Below the message, there are two sections: '빌드 대기 목록' (Build queue) which shows '빌드 대기 항목이 없습니다.' (No build items in queue.), and '빌드 실행 상태' (Build execution status) which shows two items: '1 대기 중' (1 pending) and '2 대기 중' (2 pending).

Jenkins

검색

Keonwoo | 로그아웃

자동으로 새로고침

상세 내용 입력

## Jenkins에 오신 것을 환영합니다.

시작하려면 새 작업을 만들어 주시기 바랍니다.

빌드 대기 목록

빌드 대기 항목이 없습니다.

빌드 실행 상태

1 대기 중

2 대기 중

페이지 생성일시: 2019. 3. 23 오후 11시 49분 59초 REST API Jenkins ver. 2.164.1

THANK YOU