

CTIP 환경

TEAM 3

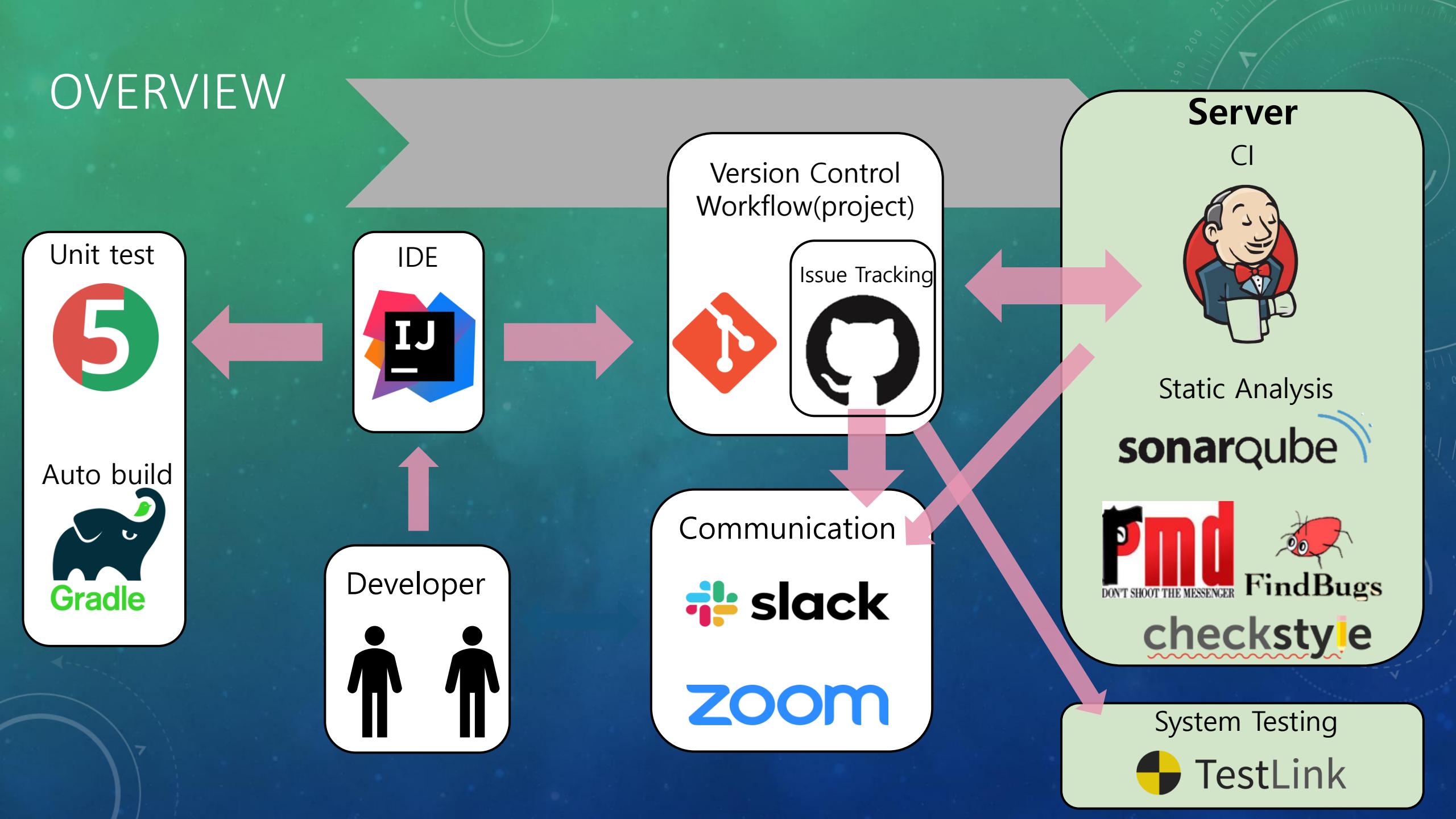
201611262 박동현

201611263 박성호

201611264 박현우

201611272 안찬우

OVERVIEW



1. 도커 컨테이너로 서비스



```
$ sudo docker ps -a
CONTAINER ID        IMAGE               COMMAND
175396eb2b48        sonarqube          "bin/run.sh bin/sona…"

```

COMMAND	CREATED	STATUS	PORTS
"bin/run.sh bin/sona…"	3 weeks ago	Up 15 hours	0.0.0.0:9111->9000/tcp, :::9111->9000/tcp

NAMES
sonarqube

2. Jenkins와 연동

Analysis properties 작성

플러그인 설치

설치 가능	설치된 플러그인 목록	고급	
사용가능	이름 ↓	버전 이전 설치 버전 설치 제거	
<input checked="" type="checkbox"/>	Credentials	2.3.15	<button>설치 제거</button>
This plugin allows you to store credentials in Jenkins.			
<input checked="" type="checkbox"/>	Plain Credentials Plugin	1.7	<button>설치 제거</button>
Allows use of plain strings and files as credentials.			
<input checked="" type="checkbox"/>	SonarQube Scanner for Jenkins	2.13	<button>설치 제거</button>
This plugin allows an easy integration of SonarQube , the open source platform for Continuous Inspection of code quality.			

Execute SonarQube Scanner

Task to run

JDK

(Inherit From Job)

JDK to be used for this SonarQube analysis

Path to project properties

Analysis properties

```
sonar.projectKey = software-v-v
sonar.projectName = software-v-v
sonar.login=admin
sonar.password=admin
sonar.host.url = http://localhost:9111/
sonar.sources=src/main/java
sonar.tests=src/test/java
sonar.projectVersion=1.0
sonar.sourceEncoding=UTF-8
sonar.java.binaries=build/classes
```

PMD



기본 제공 규칙 세트를 사용하거나
몇개를 골라내서
사용자 지정 규칙을 작성할 수 있음

1. SonarQube에 플러그인 Install

Plugins

Plugins available in the MarketPlace are not provided or supported by SonarSource. Please reach out directly to their maintainers for support.

All Installed Updates Only

Plugin	Version	Actions
PMD - EXTERNAL ANALYSERS	3.3.1 installed	Homepage Issue Tracker Uninstall

1 shown

2. 분석 필터에 PMD 추가됨

sonarqube Projects Issues Rules Quality Profiles Quality Gates Administration

Search for projects... A

Filters Clear All Filters Bulk Change

Search for rules...

Language

Java 268 1 shown

Type

Bug 3
Vulnerability 2
Code Smell 263
Security Hotspot 0

Tag

Repository PMD

SonarQube Java 628
SonarQube C# 392
PMD Java 268
SonarQube JavaScript 239
SonarQube TypeScript 234
SonarQube PHP 217
SonarQube Python 166
SonarQube VB.NET 164
SonarQube Flex 76
SonarQube HTML 65

Default Severity

Status

Security Category

Available Since

Template

Quality Profile

Inheritance

Activation Severity

Abstract Class Without Abstract Method DEPRECATED Java ⚡ Code Smell

Abstract class without any methods DEPRECATED Java ⚡ Code Smell

Abstract naming DEPRECATED Java ⚡ Code Smell

Accessor Class Generation DEPRECATED Java ⚡ Code Smell

Add Empty String DEPRECATED Java ⚡ Code Smell

Android - call super first DEPRECATED Java ⚡ Code Smell

Android - call super last DEPRECATED Java ⚡ Code Smell

Android - Do Not Hard Code SD Card DEPRECATED Java ⚡ Code Smell

Append Character With Char DEPRECATED Java ⚡ Code Smell

Assignment In Operand DEPRECATED Java ⚡ Code Smell

Assignment To Non Final Static DEPRECATED Java ⚡ Code Smell

At Least One Constructor DEPRECATED Java ⚡ Code Smell

Avoid Accessibility Alteration DEPRECATED Java ⚡ Code Smell

Avoid Array Loops DEPRECATED Java ⚡ Code Smell

Avoid Assert As Identifier DEPRECATED Java ⚡ Code Smell

Avoid Branching Statement As Last In Loop DEPRECATED Java ⚡ Code Smell

Avoid Calling Finalize DEPRECATED Java ⚡ Code Smell

Avoid Catching Generic Exception DEPRECATED Java ⚡ Code Smell

Avoid Catching NPE DEPRECATED Java ⚡ Code Smell

Avoid Catching Throwable DEPRECATED Java ⚡ Code Smell

Avoid Constants Interface DEPRECATED Java ⚡ Code Smell

Avoid Decimal Literals In Big Decimal Constructor DEPRECATED Java ⚡ Code Smell

Avoid Deeply Nested If Stmts DEPRECATED Java ⚡ Code Smell

Avoid Duplicate Literals DEPRECATED Java ⚡ Code Smell

Avoid Enum As Identifier DEPRECATED Java ⚡ Code Smell

Avoid Final Local Variable DEPRECATED Java ⚡ Code Smell

Avoid Instanceof Checks In Catch Clause DEPRECATED Java ⚡ Code Smell

Avoid Instantiating objects in loops DEPRECATED Java ⚡ Code Smell

Avoid Literals In If Condition DEPRECATED Java ⚡ Code Smell

Avoid Losing Exception Information DEPRECATED Java ⚡ Code Smell

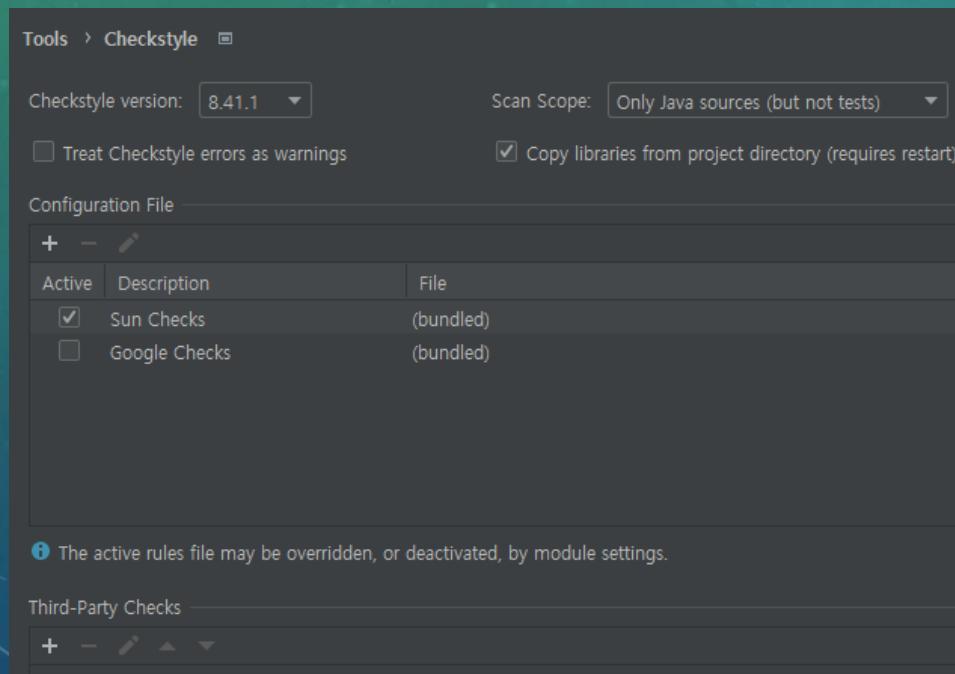
Avoid Multiple Unary Operators DEPRECATED Java ⚡ Code Smell

1 / 268 rules

CHECKSTYLE

- 정해진 규칙(Google, Sun ...)에 따라 코딩 스타일을 강제
 - SonarQube, IDE 차원에서 규제

IDE 설정



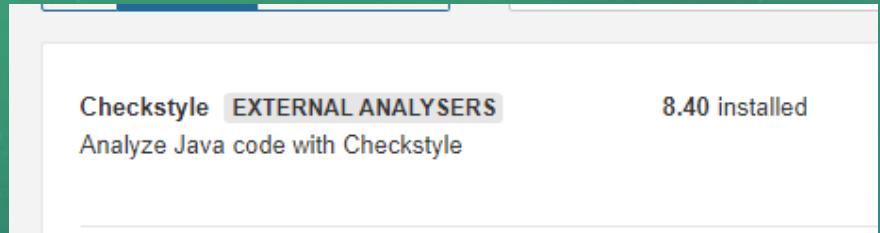
Checkstyle 작동 확인

The screenshot shows two instances of Java code with Checkstyle annotations. In the first instance, the class name 'sdfsdfPerson' is underlined in red with a tooltip: 'Checkstyle: Name 'sdfsdfPerson' must match pattern '^[A-Z][a-zA-Z0-9]*\$'. In the second instance, the parameter 'age' in the constructor is underlined in red with a tooltip: 'Checkstyle: Parameter age should be final.' Both instances have 'Suppress for Checkstyle' and 'More actions...' options.

```
class sdfsdfPerson {  
    private int age;  
    public sdfsdfPerson(int age) { this.age = age; }  
    public void getAge() {  
        Checkstyle: Parameter age should be final.  
    }  
}
```

CHECKSTYLE : SONARQUBE

Plugin(installed)



필터에 CheckStyle 추가됨

The screenshot shows the SonarQube rule catalog. On the left, there are filters for 'Search for rules...', 'Language' (Java), 'Type' (Bug, Code Smell, Security Hotspot), 'Tag', 'Repository' (CHECKSTYLE), and 'Default Severity'. The 'Repository' dropdown has 'Checkstyle Java' selected. The main area lists various Java rules, each with a 'RULE TEMPLATE' link. Some rules have additional details like 'Java', 'Code Smell', and severity levels.

Rule Name	Type	Severity
Abbreviation As Word In Name	Java	Code Smell
Abbreviation As Word In Name Template	Java	Code Smell
Abstract Class Name	Java	Code Smell
Abstract Class Name Template	Java	Code Smell
Annotation Location	Java	Code Smell
Annotation Location Template	Java	Code Smell
Annotation On Same Line	Java	Code Smell
Annotation On Same Line Template	Java	Code Smell
Annotation Use Style	Java	Code Smell
Annotation Use Style Template	Java	Code Smell
Anon Inner Length	Java	Code Smell
Anon Inner Length Template	Java	Code Smell
Array Trailing Comma	Java	Code Smell
Array Trailing Comma Template	Java	Code Smell
Array Type Style	Java	Code Smell
Array Type Style Template	Java	Code Smell
At-clause Order	Java	Code Smell

규칙 예시

The screenshot shows the 'Line Length' rule configuration page. It includes a 'Description' section with a 'Code Smell' icon, 'Major' severity, 'size' dimension, and 'Available Since Apr 29, 2021'. Below that is a 'Details' section with a 'Extend Description' button. The 'Parameters' section contains configuration options: 'fileExtensions' (accepted file extensions), 'max' (maximum line length, default 80), 'tabWidth' (number of spaces for tabs, default 8), and 'ignorePattern' (pattern for lines to ignore). At the bottom, there are sections for 'Quality Profiles' (with an 'Activate' button) and 'Issues (0)'.

Line Length

checkstyle:com.puppycrawl.tools.checkstyle.checks.sizes.LineLength

Code Smell Major size Available Since Apr 29, 2021 Checkstyle (Java) Line: +5min

Checks for long lines.

Extend Description

Parameters

fileExtensions Specify file extensions that are accepted.

max maximum allowable line length. Default is 80.

tabWidth number of expanded spaces for a tab character (" ")
Default Value:
8

ignorePattern pattern for lines to ignore

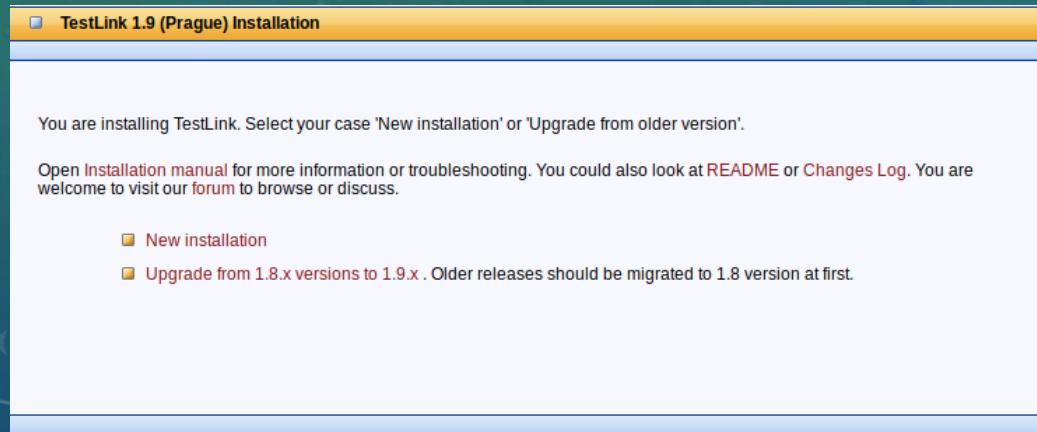
Quality Profiles Activate

Issues (0)

SYSTEM TESTING : TestLink

- Chart 등의 사용으로 simple하다는 장점. 무료
- Document가 많고, 쉽게 습득할 수 있으며, trouble shooting에 있어서도 정보가 가장 많다.

TestLink 구성에 필요한 Apache, DB(MYSQL), php 설치 후,
TestLink를 apache에 올려 웹 브라우저로 접속하여 편하게 설치 가능



The screenshot shows the 'Test Plan Management - Test Project test' page. The top navigation bar includes the TestLink logo, user [admin], and a search bar. The main content area displays a table titled 'Test Plan Management - Test Project test'. The table has columns for Name, Description, Test Case #, Build #, Active, and Public. There is one entry: 'test' with 'test' in the description, '0' in both test case and build numbers, and icons for edit, delete, and public status. Below the table, a message says 'Showing 1 to 1 of 1 entries'. At the bottom left is a 'Create' button, and at the bottom right are 'Previous', '1', and 'Next' buttons.

Name	Description	Test Case #	Build #	Active	Public
test	test	0	0		

SYSTEM TESTING:



TestLink with Jenkins



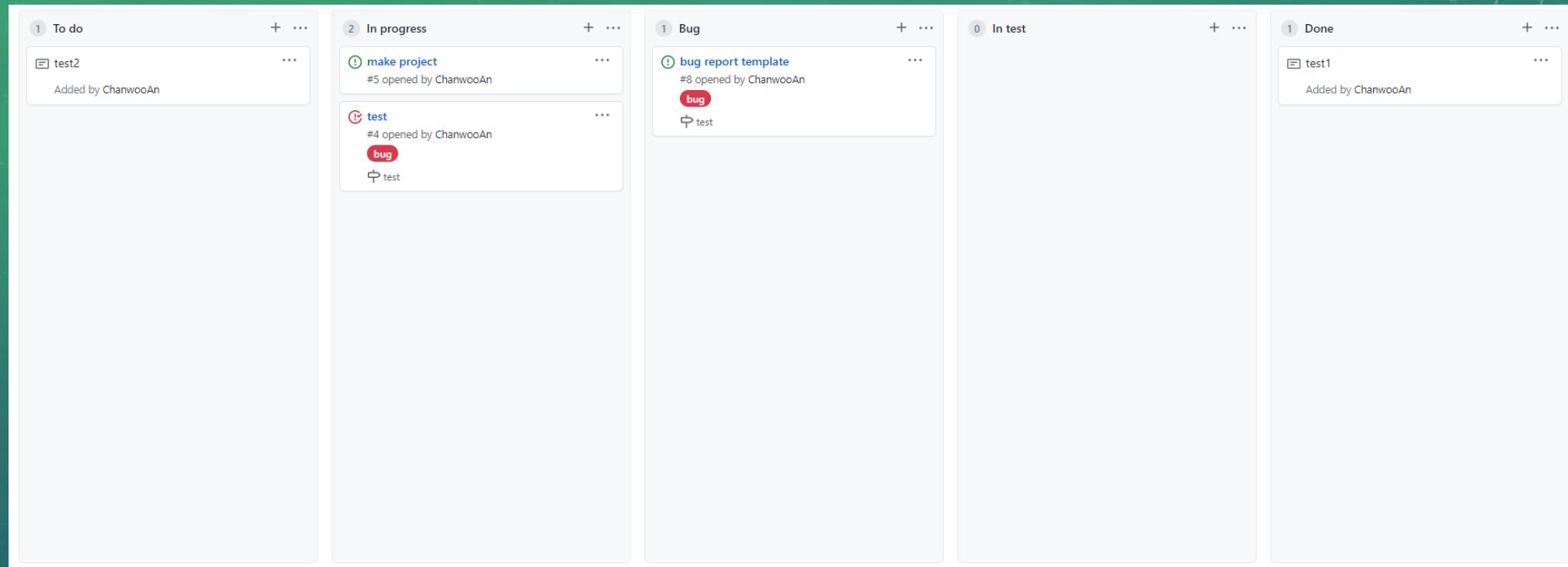
TestLink 플러그인 설치

The screenshot shows the Jenkins plugin manager interface. At the top, there is a header with the Jenkins logo and the text "Jenkins". Below the header, there is a search bar with the placeholder "Search Jenkins plugins". The main area displays a list of available plugins. The "TestLink Plugin" is listed, showing its version as "3.16" and its last update as "1.49". The plugin has a "설치" (Install) button. There is also a note at the bottom of the list: "This plugin is up for adoption! We are looking for new maintainers. Visit our [Adopt a Plugin](#) initiative for more information."

설치확인

The screenshot shows the Jenkins configuration page for the "TestLink" plugin. The title of the page is "TestLink". Below the title, there is a section titled "TestLink Installation" with a "추가" (Add) button. At the bottom of the page, there is a link: "List of TestLink installations in this system".

ISSUE TRACKING : GIT HUB

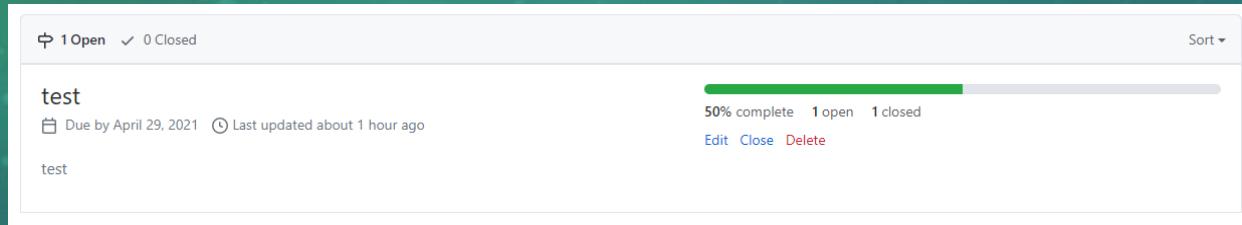


Project를 구성하여 여러 column으로 나누어 진행을 쉽게 관리

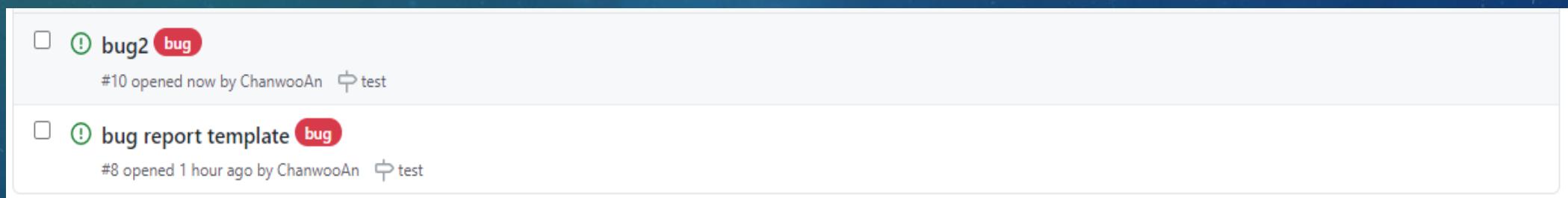
Project내에서 Issue를 바로 추가하고, 완료표시 하는 등 진척도관리에 장점을 가짐

ISSUE TRACKING : GIT HUB

Milestone을 이용하여 여러 issue들을 묶어
Project 중간중간 목표를 지정하고, 진척도를 관리



Label을 사용하여 Issue의 성격을 구분 가능하고,
정렬 또한 label을 기준으로 가능



FINDBUGS



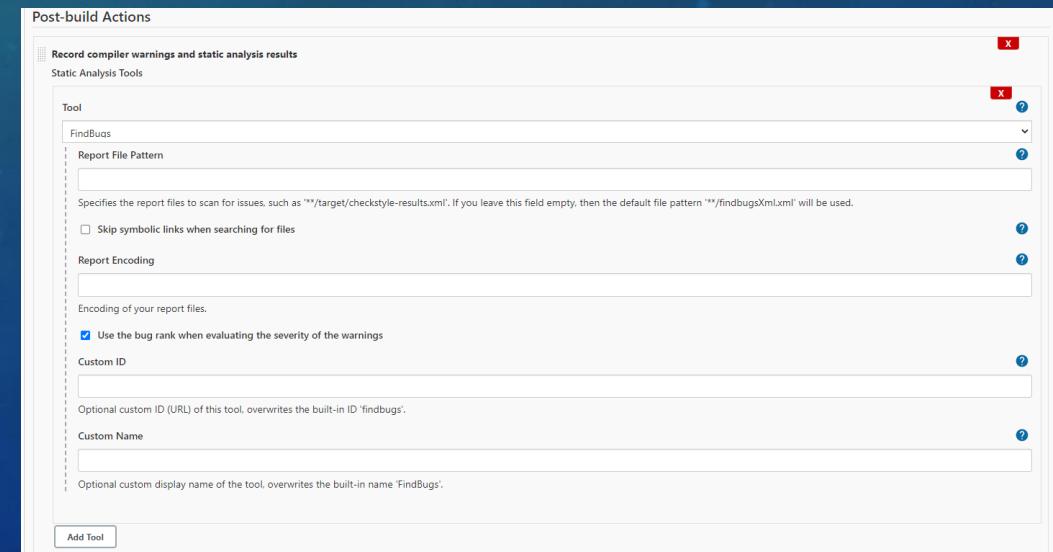
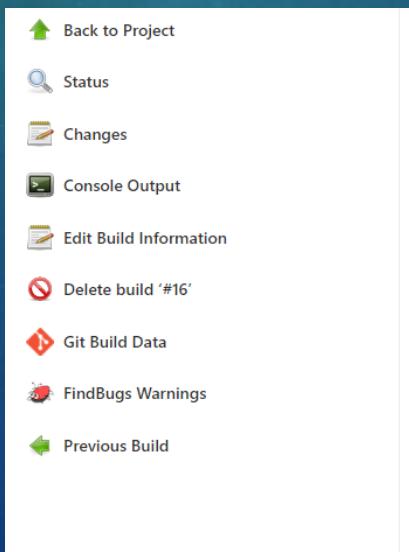
잠재적 에러를 네 단계로 분석해주는 분석 툴

자체 GUI 제공, Eclipse, Gradle, Maven, Jenkins 등 다양한 플러그인 제공

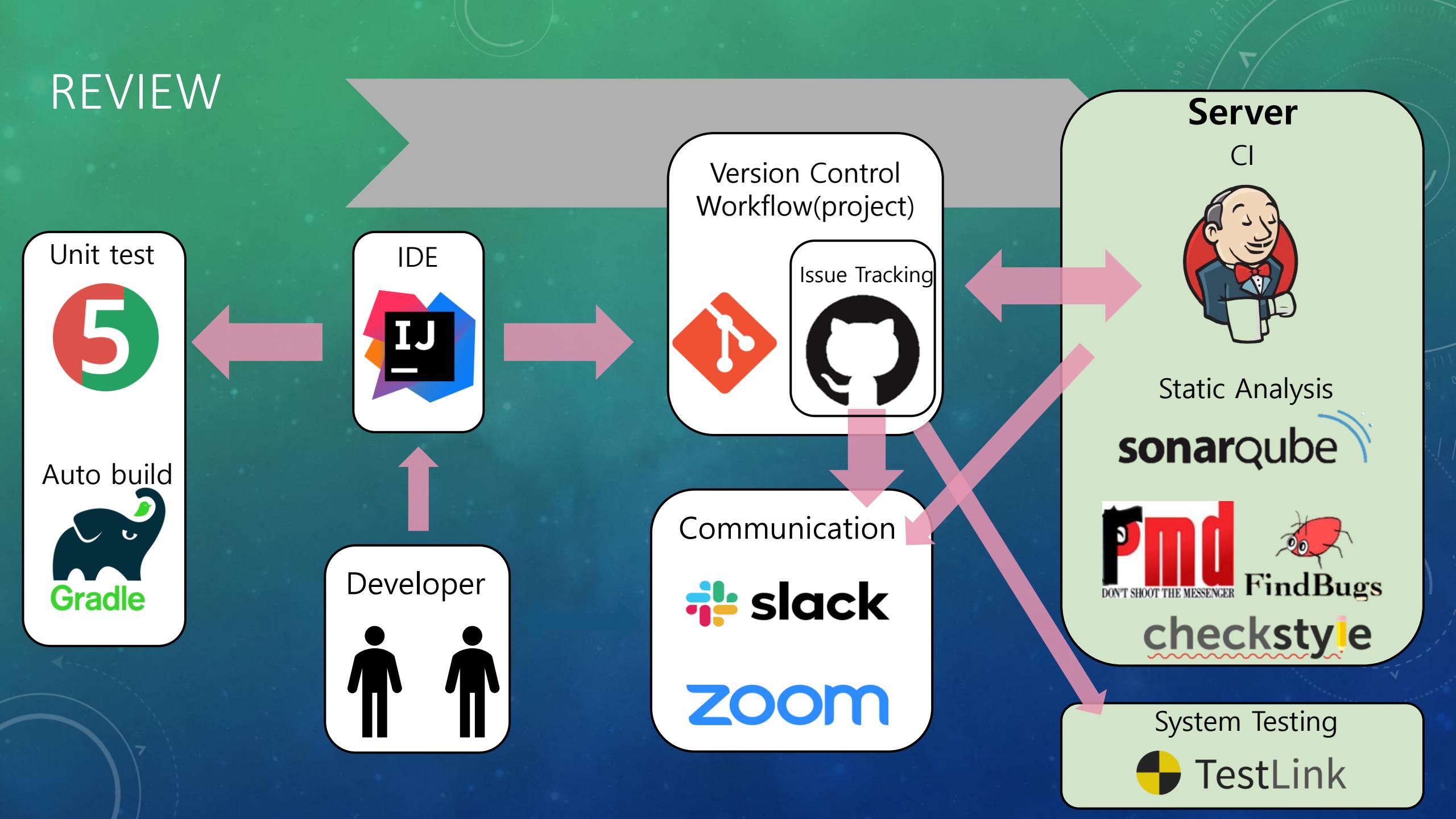
Jenkins Analysis Model API Plugin 설치

Analysis Model API Plugin
Static Analysis Model and Parsers API used by the Warnings plugin.

빌드 후 analysis report 가져오기



REVIEW



감사합니다