

3. Check Code qualities

pooq3.0 프로젝트는 단위 테스트(unit test)와 코드 분석 툴(code analysis tools)을 이용해 코드 품질(code qualities)를 검사합니다.



3.1 Unit test

TODO

<https://developer.android.com/training/testing/unit-testing/local-unit-tests.html>

3.2 Code analysis tools

3.2.1 checkstyle

Checkstyle is a development tool to help programmers write Java code that adheres to a coding standard. It automates the process of checking Java code to spare humans of this boring (but important) task. This makes it ideal for projects that want to enforce a coding standard.

checkstyle은 프로그래머가 코딩 표준을 준수하여 Java 코드를 작성하도록 돕는 개발 도구입니다.

기본적으로 Google Java Style을 따르고 있으며, 일부분은 pooq3.0에 맞게 수정했습니다.

관련 코드 : [pooqV3/config/quality/checkstyle/](#).

3.2.2 Findbugs

Provides static byte code analysis to look for bugs in Java code from within IntelliJ IDEA. FindBugs is a defect detection tool for Java that uses static analysis to look for more than 200 bug patterns, such as null pointer dereferences, infinite recursive loops, bad uses of the Java libraries and deadlocks.

Findbugs는 Java 코드의 버그를 찾기 위해 정적 바이트 코드(static byte code)를 분석하여 버그 패턴을 찾는 결함 탐지 도구입니다.

관련 코드 : [pooqV3/config/quality/findbugs/](#).

3.2.3 PMD

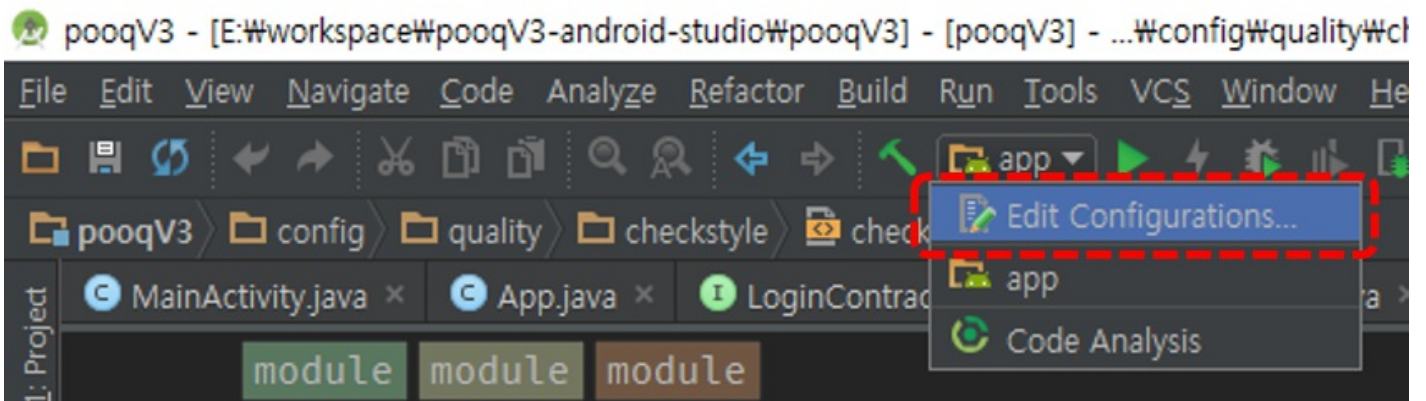
PMD is a source code analyzer. It finds common programming flaws like unused variables, empty catch blocks, unnecessary object creation, and so forth.

PMD는 사용되지 않는 변수, 빈 catch 블록, 불필요한 개체 생성 등과 같은 일반적인 프로그래밍 결함을 찾아주는 코드 분석 도구입니다.

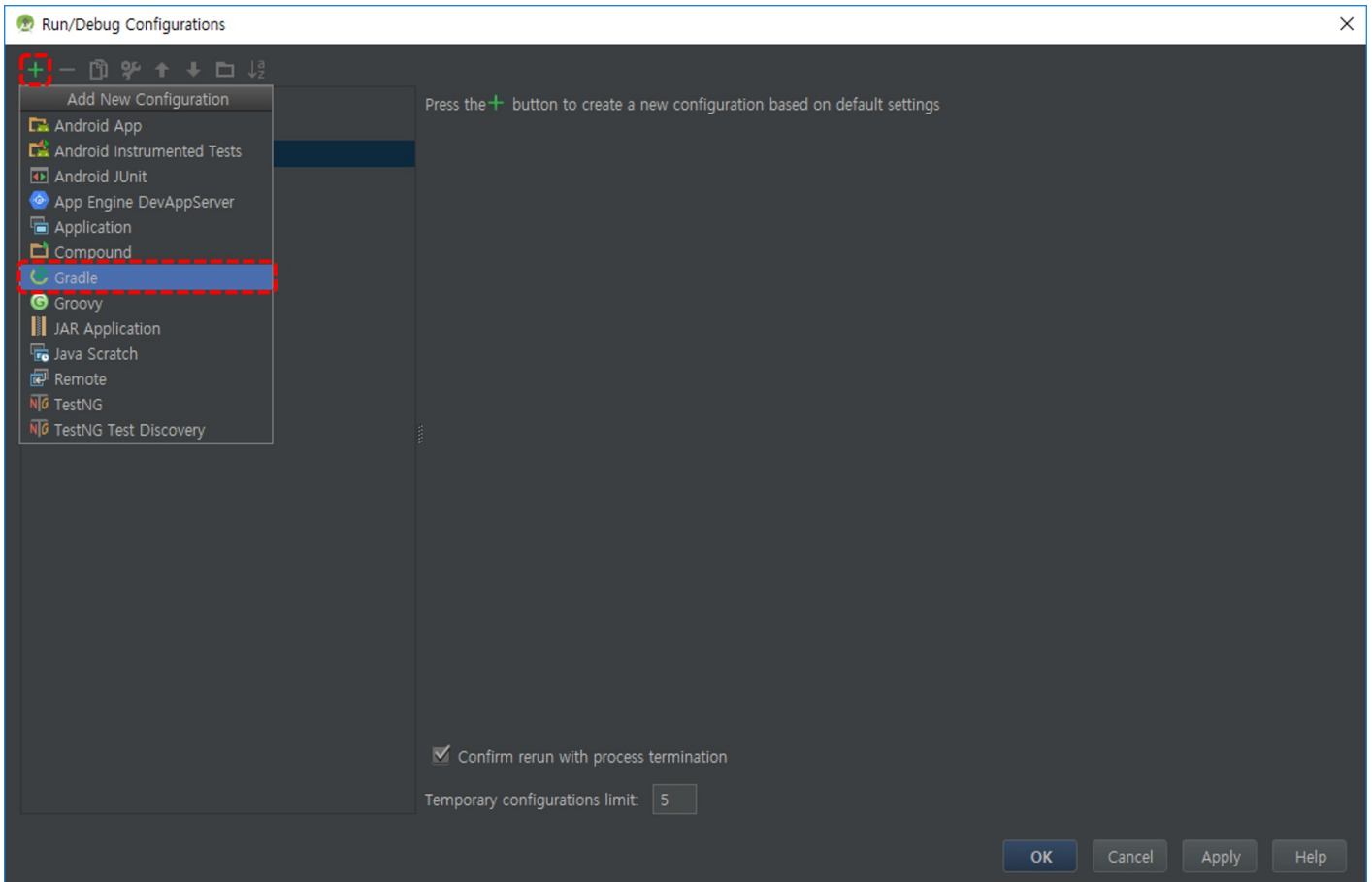
관련 코드 : [pooqV3/config/quality/pmd/](#).

3.3 Run code analysis tools

1. Edit Configurations

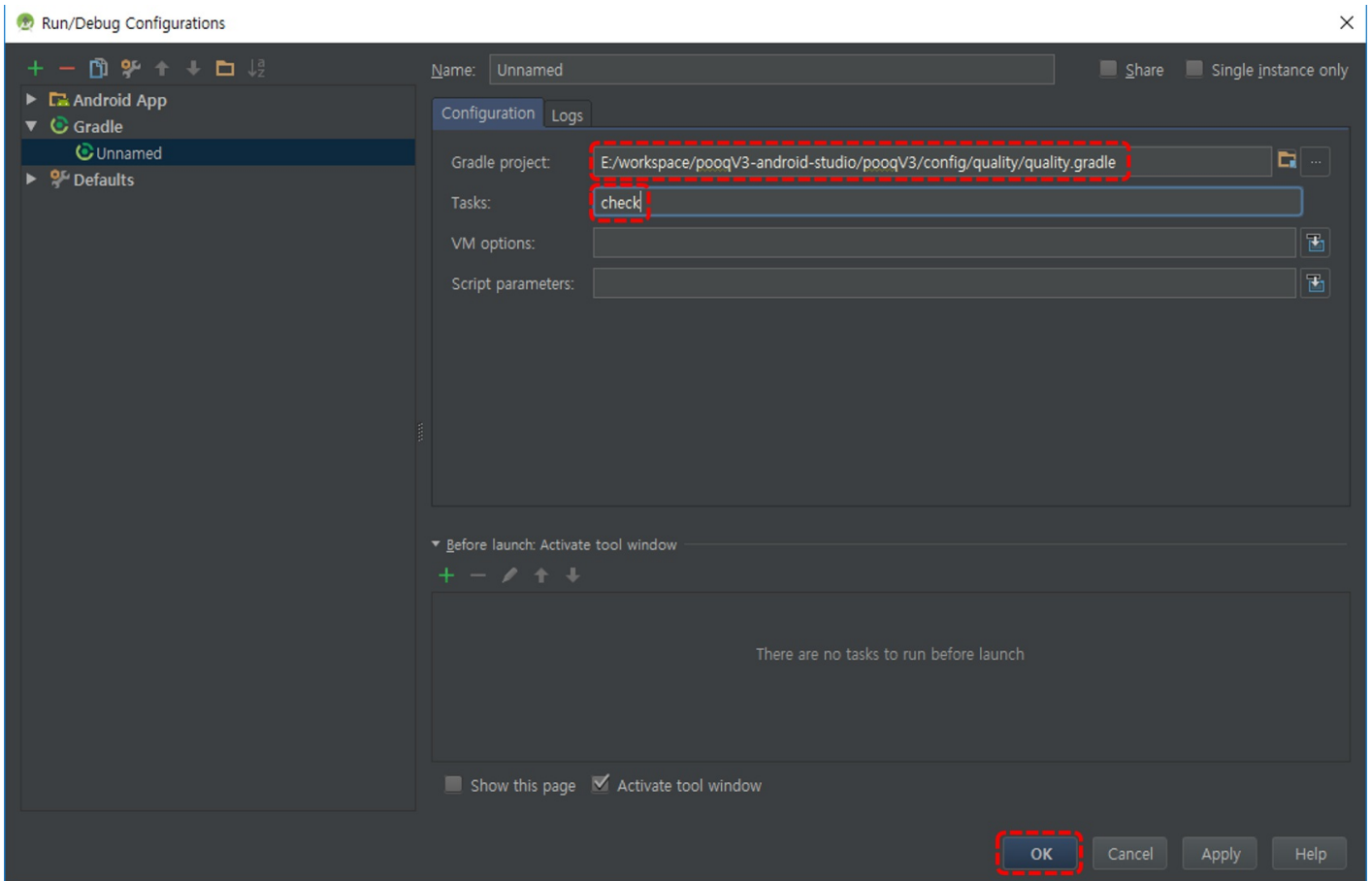


2. Add Gradle

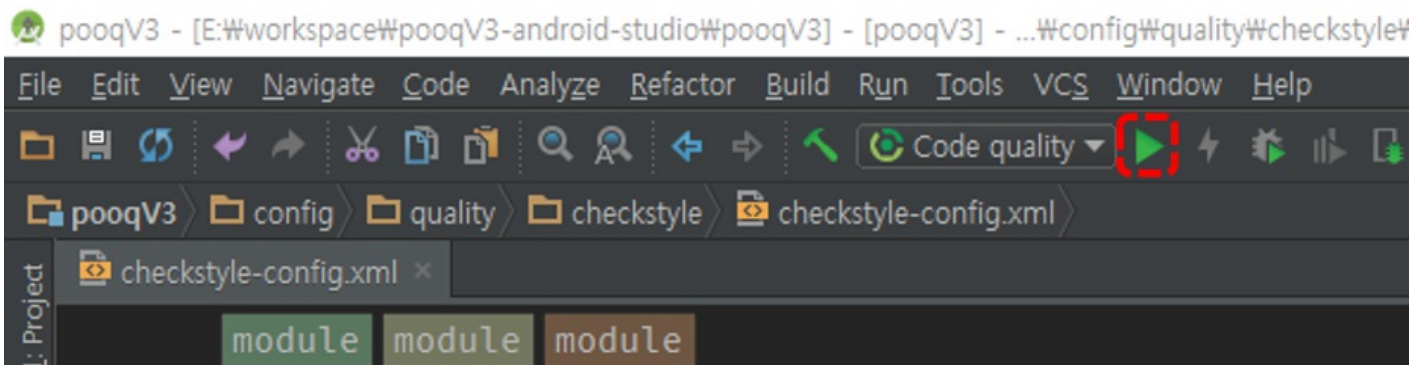


3. Set Gradle project and Tasks info

- Gradle project : `path/pooqV3-android-studio/pooqV3/config/quality/quality.gradle` 경로를 추가 합니다.
- Tasks info : `check` 를 추가합니다.
 - `check` 는 모든 테스트를 실행한다는 의미입니다.

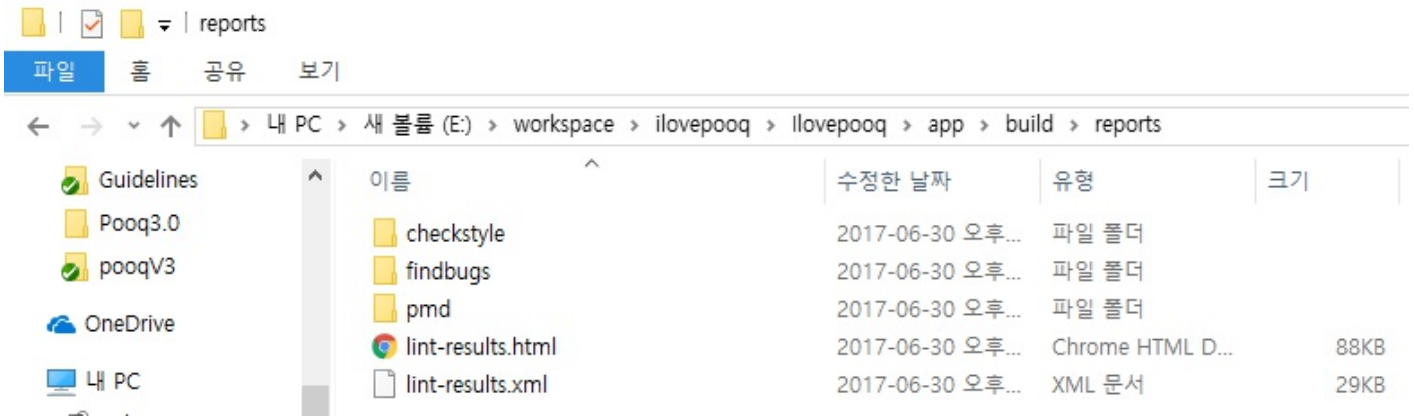
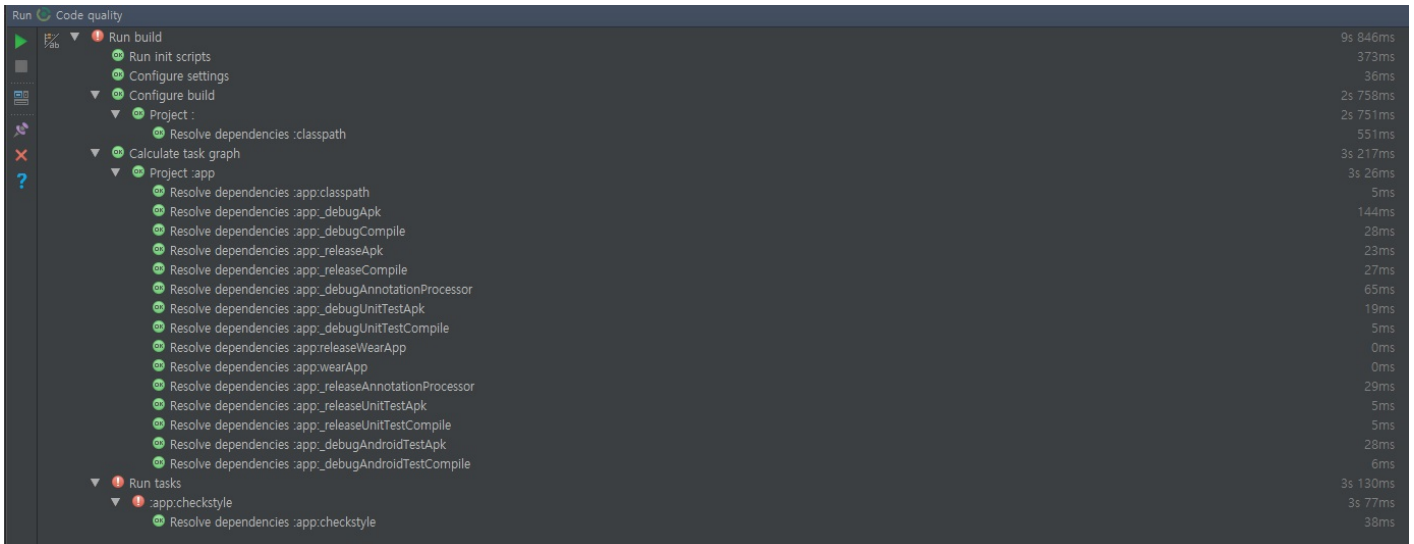


4. Run Gradle



5. Results

- **Messages** : 안드로이드 스튜디오의 **Messages** 에 전반적인 테스트 결과를 보여줍니다.
- **html file** : path/pooqV3-android-studio/pooqV3/app/build/reports/checkstyle/checkstyle.html 파일로 자세한 테스트 결과를 확인할 수 있습니다.



6. checkstyle.html

- pooq3.0 Java code style 을 위반한 코드 위치와 내용을 보여줍니다.

CheckStyle Audit

Designed for use with [CheckStyle](#) and [Ant](#).

| Summary | |
|---------|--------|
| Files | Errors |
| 107 | 2 |

| Files | |
|----------------------------------------------------------------------------------------------------------------------|--------|
| Name | Errors |
| E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\util\AppVersion.java | 2 |
| E:\workspace\pooqV3-android-studio\pooqV3\app\src\androidTest\java\kr\co\captv\pooqdemo\ExampleInstrumentedTest.java | 0 |
| E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\base\App.java | 0 |
| E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\base\BaseActivity.java | 0 |

File E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\colcaptv\pooqdemo\login\LoginFragment.java

Error Description

Line is longer than 100 characters (found 102).

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File E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\colcaptv\pooqdemo\login\LoginPresenter.java

Error Description

Member name 'TAG' must match pattern '^[a-z]([a-z0-9]([a-zA-Z0-9])*)\$'.

Line is longer than 100 characters (found 114).

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File E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\colcaptv\pooqdemo\login\LoginRemoteRepository.java

Error Description

Line is longer than 100 characters (found 106).

Line is longer than 100 characters (found 101).

Line is longer than 100 characters (found 108).

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File E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\colcaptv\pooqdemo\main\MainAFragment.java

Error Description

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7. pmd.html

- pooq3.0 Java code style 을 위반한 코드 위치와 내용을 보여줍니다.

PMD report

Problems found

| # | File | Line | Problem |
|----|------------------------------------------------------------------------------------------------------------------|------|------------------------------------------------------------------------------|
| 1 | E:\workspace\ilovepooq\ilovepooq\app\src\main\java\com\sh\ilovepooq\MVC\controller\TestHTMLParsingAsyncTask.java | 1 | Package name contains upper case characters |
| 2 | E:\workspace\ilovepooq\ilovepooq\app\src\main\java\com\sh\ilovepooq\MVC\controller\HTMLParsingAsyncTask.java | 1 | Package name contains upper case characters |
| 3 | E:\workspace\ilovepooq\ilovepooq\app\src\main\java\com\sh\ilovepooq\MVC\controller\HTMLParsingAsyncTask.java | 66 | Avoid printStackTrace(): use a logger call instead. |
| 4 | E:\workspace\ilovepooq\ilovepooq\app\src\main\java\com\sh\ilovepooq\MVC\controller\HTMLParsingAsyncTask.java | 104 | Avoid printStackTrace(): use a logger call instead. |
| 5 | E:\workspace\ilovepooq\ilovepooq\app\src\main\java\com\sh\ilovepooq\MVC\controller\HTMLParsingCallback.java | 1 | Package name contains upper case characters |
| 6 | E:\workspace\ilovepooq\ilovepooq\app\src\main\java\com\sh\ilovepooq\MVC\controller\HTMLParsingThread.java | 1 | Package name contains upper case characters |
| 7 | E:\workspace\ilovepooq\ilovepooq\app\src\main\java\com\sh\ilovepooq\MVC\controller\HTMLParsingThread.java | 21 | The field name indicates a constant but its modifiers do not |
| 8 | E:\workspace\ilovepooq\ilovepooq\app\src\main\java\com\sh\ilovepooq\MVC\controller\HTMLParsingThread.java | 48 | Avoid printStackTrace(): use a logger call instead. |
| 9 | E:\workspace\ilovepooq\ilovepooq\app\src\main\java\com\sh\ilovepooq\MVC\controller\HTMLParsingThread.java | 64 | Avoid printStackTrace(): use a logger call instead. |
| 10 | E:\workspace\ilovepooq\ilovepooq\app\src\main\java\com\sh\ilovepooq\MVC\controller\HTMLParsingThread.java | 100 | Avoid printStackTrace(): use a logger call instead. |
| 11 | E:\workspace\ilovepooq\ilovepooq\app\src\main\java\com\sh\ilovepooq\MVC\controller\HTMLParsingThread.java | 106 | Avoid printStackTrace(): use a logger call instead. |
| 12 | E:\workspace\ilovepooq\ilovepooq\app\src\main\java\com\sh\ilovepooq\MVC\controller\URLImageLoader.java | 1 | Package name contains upper case characters |

8. findbugs.html

- 버그 패턴을 분석한 결과를 보여줍니다.

FindBugs Report

Project Information

Project:

FindBugs version: 3.0.1

Code analyzed:

- E:\workspace\pooqV3-android-studio\pooqV3\app\build\intermediates\classes

Metrics

16781 lines of code analyzed, in 437 classes, in 52 packages.

| Metric | Total | Density* |
|--------------------------|-------|----------|
| High Priority Warnings | | 0.00 |
| Medium Priority Warnings | | 0.00 |
| Total Warnings | 0 | 0.00 |

(* Defects per Thousand lines of non-commenting source statements)

Contents

9. Debug results

- File - Settings - Build, Execution, Deployment - Compiler - Command-line Options 에 `--stacktrace --debug` 옵션을 설정합니다.
- 안드로이드 스튜디오의 Messages 를 통해서도 테스트 결과를 확인할 수 있습니다.

Settings

Appearance & Behavior

Keymap

Editor

Plugins

Version Control

Build, Execution, Deployment

Gradle

Debugger

Compiler

Coverage

Espresso Test Recorder

Instant Run

Required Plugins

Languages & Frameworks

Tools

Build, Execution, Deployment > Compiler

Note: These settings are used for compiling Gradle-based Android projects.

☐ Compile independent modules in parallel (may require larger heap size)

This option is in "incubation" and should only be used with [decoupled projects](#).

Command-line Options:

Example: --stacktrace --debug (for more information, please read Gradle's [documentation](#).)

☐ Make project automatically (only works while not running / debugging)

☐ Sync project with Gradle before building, if needed

☒ Configure on demand

This option may speed up builds. This option is in "incubation." Please read Gradle's [documentation](#).

OK

Cancel

Apply

Help

Messages: Gradle Build

15:47:37.588 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [ERROR] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\ExampleInstrumentedTest.java:10: Using the '*' form of import should be avoided - [AvoidStarImport]

15:47:37.588 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\BaseActivity.java:10:26: Member name 'TAG' must match pattern '[a-z]([a-z0-9])' [LineLength]

15:47:37.589 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\DaggerBaseAppComponent.java:15: Line is longer than 100 characters (found 101). [LineLength]

15:47:37.589 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\DaggerWloginLoginModule.java:16: Line is longer than 100 characters (found 132). [LineLength]

15:47:37.589 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\DaggerWloginLoginModule.java:17: Line is longer than 100 characters (found 129). [LineLength]

15:47:37.589 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\DaggerRemoteAPIModule.java:43: Line is longer than 100 characters (found 120). [LineLength]

15:47:37.589 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\LoginLoginActivity.java:12:28: Member name 'TAG' must match pattern '[a-z]([a-z0-9])' [LineLength]

15:47:37.589 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\LoginLoginActivity.java:30: Line is longer than 100 characters (found 111). [LineLength]

15:47:37.589 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\LoginLoginFragment.java:111: Line is longer than 100 characters (found 102). [LineLength]

15:47:37.590 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\LoginLoginPresenter.java:15:26: Member name 'TAG' must match pattern '[a-z]([a-z0-9])' [LineLength]

15:47:37.590 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\LoginLoginPresenter.java:40: Line is longer than 100 characters (found 114). [LineLength]

15:47:37.590 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\LoginLoginRemoteRepository.java:34: Line is longer than 100 characters (found 106). [LineLength]

15:47:37.590 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\LoginLoginRemoteRepository.java:42: Line is longer than 100 characters (found 101). [LineLength]

15:47:37.590 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\LoginLoginRemoteRepository.java:55: Line is longer than 100 characters (found 108). [LineLength]

15:47:37.590 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\main\MainActivity.java:41:28: Member name 'TAG' must match pattern '[a-z]([a-z0-9])' [LineLength]

15:47:37.590 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\main\MainActivity.java:65: Line is longer than 100 characters (found 106). [LineLength]

15:47:37.590 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\main\MainActivity.java:79: Line is longer than 100 characters (found 110). [LineLength]

15:47:37.590 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\main\MainActivity.java:109: Line is longer than 100 characters (found 106). [LineLength]

15:47:37.591 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\main\MainActivity.java:165: Line is longer than 100 characters (found 142). [LineLength]

15:47:37.591 [ERROR] [org.gradle.api.internal.project.ant.AntLoggingAdapter] [ant:checkstyle] [WARN] E:\workspace\pooqV3-android-studio\pooqV3\app\src\main\java\kr\co\captv\pooqdemo\main\MainActivity.java:166: Line is longer than 100 characters (found 134). [LineLength]