Sometimes, build time can get a lot

So how to reduce build time ?

1. Incremental builds
2. Build cache

What is an incremental build?

Since a previous build, if the inputs have not changed for particular tasks, then those tasks are not run (because no need)

For incremental builds to work, tasks must define inputs and outputs.

This will allow gradle to decide which tasks can be skipped when it is deciding on incremental builds.

How to spot skipped tasks during an incremental build?

$ ./gradlew compileJava --console=verbose

> Task :buildSrc:generateExternalPluginSpecBuilders UP-TO-DATE

> Task :buildSrc:extractPrecompiledScriptPluginPlugins UP-TO-DATE

> Task :buildSrc:compilePluginsBlocks UP-TO-DATE

> Task :buildSrc:generatePrecompiledScriptPluginAccessors UP-TO-DATE

> Task :buildSrc:generateScriptPluginAdapters UP-TO-DATE

> Task :buildSrc:compileKotlin UP-TO-DATE

> Task :buildSrc:compileJava NO-SOURCE

> Task :buildSrc:compileGroovy NO-SOURCE

> Task :buildSrc:pluginDescriptors UP-TO-DATE

> Task :buildSrc:processResources UP-TO-DATE

> Task :buildSrc:classes UP-TO-DATE

> Task :buildSrc:jar UP-TO-DATE

> Task :list:compileJava UP-TO-DATE

> Task :utilities:compileJava UP-TO-DATE

> Task :app:compileJava UP-TO-DATE

BUILD SUCCESSFUL in 374ms

12 actionable tasks: 12 up-to-date

The UP-TO-DATE shows the the task is skipped – leading to incremental builds.

Build cache.

The build cache stores previous build results and restores them when needed. It prevents the redundant work and cost of executing time-consuming and expensive processes.

When the build cache has been used to repopulate the local directory, the tasks are marked as FROM-CACHE:

$ ./gradlew compileJava --build-cache

> Task :buildSrc:generateExternalPluginSpecBuilders UP-TO-DATE

> Task :buildSrc:extractPrecompiledScriptPluginPlugins UP-TO-DATE

> Task :buildSrc:compilePluginsBlocks UP-TO-DATE

> Task :buildSrc:generatePrecompiledScriptPluginAccessors UP-TO-DATE

> Task :buildSrc:generateScriptPluginAdapters UP-TO-DATE

> Task :buildSrc:compileKotlin UP-TO-DATE

> Task :buildSrc:compileJava NO-SOURCE

> Task :buildSrc:compileGroovy NO-SOURCE

> Task :buildSrc:pluginDescriptors UP-TO-DATE

> Task :buildSrc:processResources UP-TO-DATE

> Task :buildSrc:classes UP-TO-DATE

> Task :buildSrc:jar UP-TO-DATE

> Task :list:compileJava FROM-CACHE

> Task :utilities:compileJava FROM-CACHE

> Task :app:compileJava FROM-CACHE

BUILD SUCCESSFUL in 364ms

12 actionable tasks: 3 from cache, 9 up-to-date

After the next execution, the FROM-CACHE will be populated in the local directory, and if u build further, the task will be marked as UP-TO-DATE