Gradle Notes for Beginners

2. 9 Reasons Why You Need Gradle for Efficient Build Automation

Why We Need Gradle

Gradle resolves many issues faced by other build tools like Maven and Ant. The tool focuses on **maintainability, usability, extendibility, performance, and flexibility**.

Key Reasons:

1. **Free and Open Source** – Gradle is completely free to use and supported by an active community.
2. **High Performance** – Gradle builds are very fast, often nearly twice as fast as Maven.
3. **Highly Customizable and Extensible** – You can easily define your own tasks, extend existing ones, and use plugins.
4. **Flexibility** – Works with many programming languages (Java, Kotlin, Groovy, Scala, C/C++, Android, etc.) and integrates with popular tools.
5. **Multi-Project Build Support** – Ideal for enterprise-level applications with many sub-projects or modules.
6. **Incremental Builds** – Gradle only rebuilds what has changed, saving time during development.
7. **Powerful Dependency Management** – Automatically downloads, updates, and manages libraries from repositories.
8. **Cross-Platform Compatibility** – Runs on Windows, macOS, and Linux without issue.
9. **Strong Community and Adoption** – Widely used in the industry, especially for Android app development and large-scale enterprise projects.

✅**In short:** You need Gradle because it is **fast, flexible, extensible, and reliable**, making it one of the best tools for efficient build automation compared to older tools like Ant and Maven.