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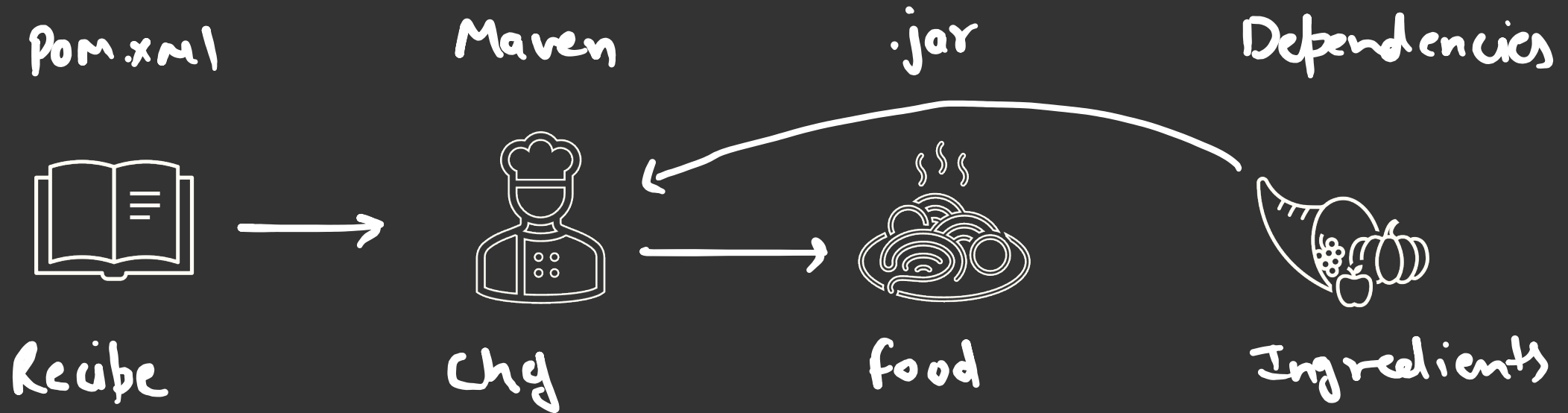
Maven

Maven

Maven is a build automation tool and project management tool primarily used for Java projects. It plays a crucial role in the development, build, and dependency management of Spring applications, including those using Spring Framework's component scanning and annotation-driven configuration.

In the upcoming slides, let's learn how Maven fits into the Spring Framework ecosystem and the development process:

Maven As the Chef

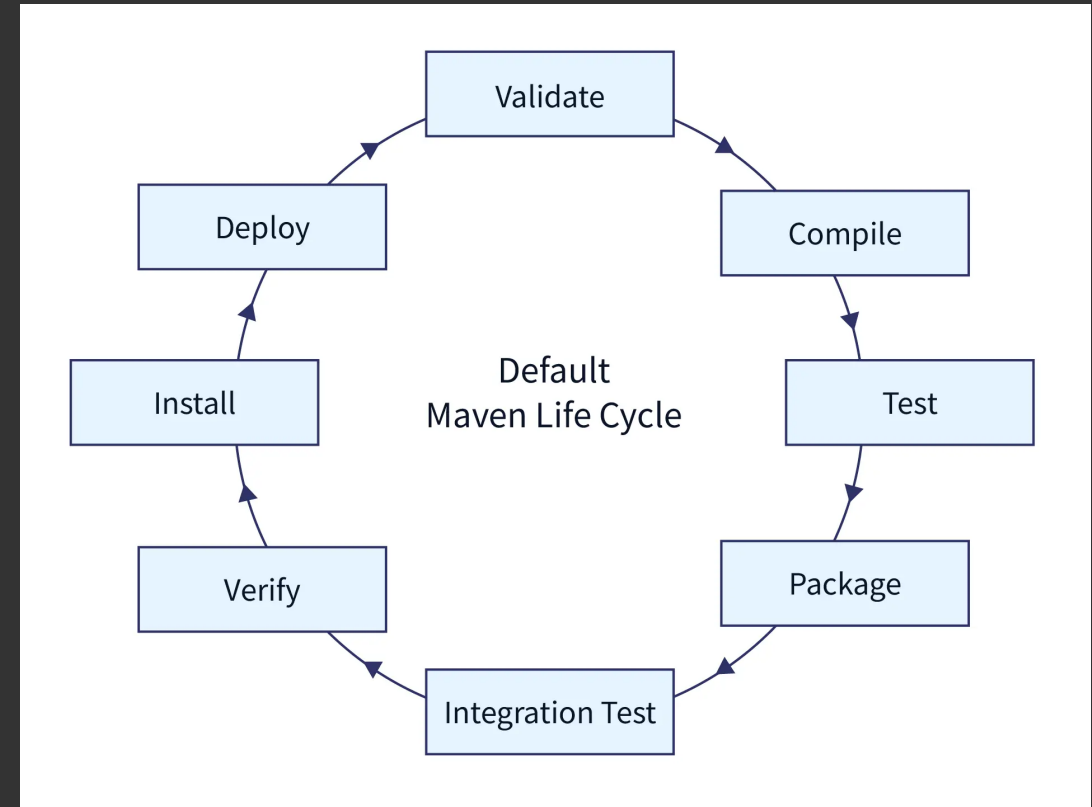


Project & Dependency Management

- Maven provides a standardized way to manage Java projects by defining project structure, dependencies, and build configurations using a declarative XML-based format (pom.xml).
- Developers use Maven to specify project metadata, dependencies, plugins, repositories, and other project-related configurations.
- Spring Framework and its various modules (e.g., Spring Core, Spring MVC, Spring Boot) are managed as dependencies in Maven projects. Developers specify the Spring dependencies in the pom.xml, and Maven handles the rest.

Build Automation

- Maven automates the build process, including compilation, testing, packaging, and deployment, using predefined build lifecycle phases (e.g., clean, compile, test, package, install).
- Maven facilitates the building and packaging of Spring applications into deployable artifacts (e.g., JAR files, WAR files) for deployment in production environments.



Maven Commands

Maven Commands	Description
mvn compile	We compile the project's source code Using the mvn compile command.
mvn clean	Using the mvn clean command, All previous-build files are removed from the project.
mvn test	We execute project testing steps with the mvn test command.
mvn install	The mvn install command aids in deploying packaged WAR or JAR files by storing them in the local repository as classes.
mvn package	The mvn package command generates a WAR or JAR file for the project so that it can be distributed.
mvn deploy	The mvn deploy command is used after compilation, project testing, and project building. The packaged WAR or JAR files are copied to the remote repository so other developers can use them.

Maven Commands

Maven Commands	Description
<code>mvn spring-boot:run</code>	Runs a Spring Boot application directly from the source code without packaging it into a JAR or WAR file.
<code>mvn spring-boot:build-image</code>	Builds a Docker image of the Spring Boot application using the Spring Boot Maven plugin.

