Apache Maven

Build Automation Tool

Key Features

- simple project setup
  - project templates (named *archetypes*)

- dependency management

- central repository system
  - https://mvnrepository.com/

Project Object Model (POM)

```xml
<?xml version="1.0" encoding="UTF-8"?>
<project xmlns="http://maven.apache.org/POM/4.0.0"
         xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
         xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">
    <modelVersion>4.0.0</modelVersion>

    <groupId>at.htl</groupId>
    <artifactId>simple-lists</artifactId>
    <version>1.0-SNAPSHOT</version>

    <properties>
        <maven.compiler.source>14</maven.compiler.source>
        <maven.compiler.target>14</maven.compiler.target>
    </properties>

    <dependencies>
        <dependency>
            <groupId>org.junit.jupiter</groupId>
            <artifactId>junit-jupiter-api</artifactId>
            <version>5.6.2</version>
            <scope>test</scope>
        </dependency>
        <dependency>
            <groupId>org.assertj</groupId>
            <artifactId>assertj-core</artifactId>
            <version>3.17.0</version>
            <scope>test</scope>
        </dependency>
    </dependencies>
</project>
```
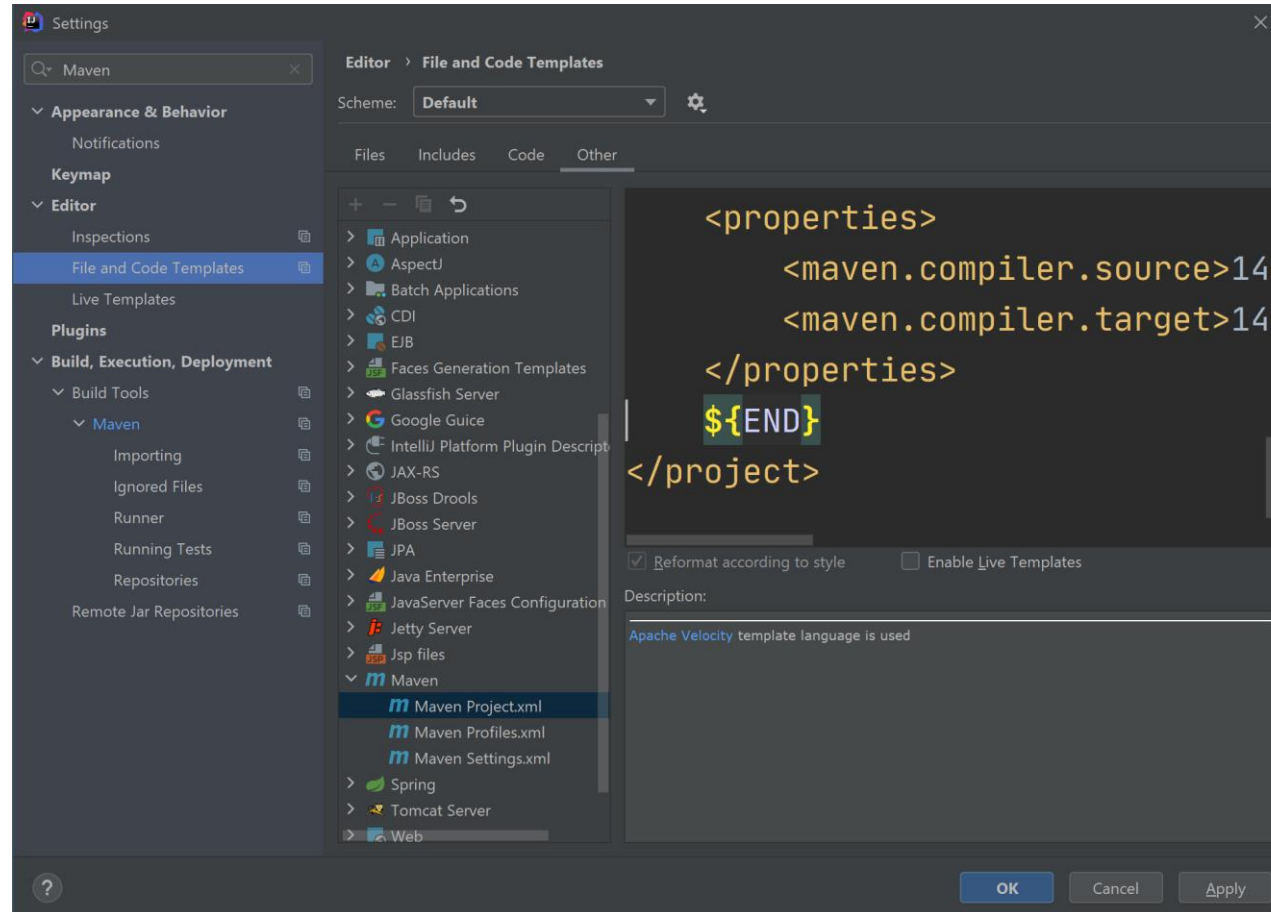
Project Identifiers

- *<groupId>*
  - unique name of project creator
  - follows Java's package name rules
  - e.g. *at.htl_leonding*

- *<artifactId>*
  - unique name of project
  - e.g. *hello-world*

- *<version>*

Dependencies

- external libraries that a project uses

- Maven ensures automatic download from a central repository

```xml
<dependency>
    <groupId>org.junit.jupiter</groupId>
    <artifactId>junit-jupiter-api</artifactId>
    <version>5.6.2</version>
    <scope>test</scope>
</dependency>
```

IntelliJ: How to edit *pom.xml* template

Resources

- https://www.baeldung.com/maven

- https://maven.apache.org/

- http://maven.apache.org/guides/mini/guide-naming-conventions.html