

Practical Exercise: Build and Run a Java Application with Maven, Then Migrate to Gradle

Step 1: Create a Maven Project

Run the following command in your terminal to generate a Maven project:

```
mvn archetype:generate -  
DgroupId=com.example -  
DartifactId=maven-example -  
DarchetypeArtifactId=maven-  
archetype-quickstart -  
DinteractiveMode=false
```

Step 2: Modify the pom.xml File

Navigate to the project folder:

```
cd maven-example
```

Open and edit pom.xml:

Replace its contents with:

```
<project  
    xmlns="http://maven.apache.org/POM/  
        4.0.0"  
  
    xmlns:xsi="http://www.w3.org/2001/XM  
    LSchema-instance"  
  
    xsi:schemaLocation="http://maven.apac  
        he.org/POM/4.0.0  
        http://maven.apache.org/xsd/maven-  
        4.0.0.xsd">  
  
<modelVersion>4.0.0</modelVersion>  
  
<groupId>com.example</groupId>  
  
<artifactId>maven-example</artifactId>
```

```
<version>1.0-SNAPSHOT</version>
```

```
<dependencies>
```

```
  <dependency>
```

```
    <groupId>junit</groupId>
```

```
    <artifactId>junit</artifactId>
```

```
    <version>4.12</version>
```

```
    <scope>test</scope>
```

```
  </dependency>
```

```
</dependencies>
```

```
<build>
```

```
  <plugins>
```

```
    <plugin>
```

```
      <groupId>org.apache.maven.plugins</groupId>
```

```
<artifactId>maven-compiler-
plugin</artifactId>

    <version>3.8.1</version>

    <configuration>
        <source>1.8</source>
        <target>1.8</target>
    </configuration>
</plugin>
</plugins>
</build>
</project>
```

Step 3: Write the Java Code

Open App.java inside
src/main/java/com/example/ and
replace its contents with:

```
package com.example;

public class App {
    public static void main(String[] args) {
        System.out.println("Hello, Maven");
        System.out.println("This is a simple
maven to Gradle migration");
    }
}
```

Step 4: Build and Run the Maven Project

Run the following commands:

```
mvn clean install
```

```
mvn exec:java -
Dexec.mainClass="com.example.App"
```

Expected Output:

Hello, Maven

This is a simple maven to Gradle migration

Step 5: Migrate the Project to Gradle

1. Navigate to the project folder:

`cd maven-example`

2. Initialize Gradle:

`gradle init`

- Select **Yes** when prompted to convert from Maven.
- Choose **Groovy** as the DSL.
- Select **No** for new API behavior.

3. Open build.gradle and replace its contents with:

`plugins {`

```
    id 'java'  
}
```

```
group = 'com.example'  
version = '1.0-SNAPSHOT'
```

```
repositories {  
    mavenCentral()  
}
```

```
dependencies {  
    testImplementation 'junit:junit:4.12'  
}
```

```
task run(type: JavaExec) {  
    main = 'com.example.App'
```

```
    classpath =  
    sourceSets.main.runtimeClasspath  
}
```

Step 6: Build and Run the Gradle Project

`./gradlew build`

`./gradlew run`

Step 7: Verify Output

Ensure the output is the same for both Maven and Gradle:

Hello, Maven

This is a simple maven to Gradle migration