

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