

Program 3: Build and Run a Java Application with Maven, migrate the same application to Gradle.

Step 1: Create a New Maven Project. (in Eclipse)

- Go to **File -> New -> Project**.
- Under Maven, select **Maven Project** and click **Next**.
- Check **Create a simple project** (skip archetype selection), and click **Next**.
- Enter **Group Id** (e.g., com.example), **Artifact Id** (e.g., HelloWorld), and **Version** if necessary.
- Click **Finish**. (*Eclipse will create a new Maven project with a standard directory structure.*)

Step 2: Add Java Code

- Navigate to `src/main/java` in the Project Explorer.
- Right-click on the package, choose **New -> Class**.

```
package com.example;

public class HelloWorld {

    public static void main(String[] args) {
        System.out.println("Hello, World!");
    }
}
```

Step 3: Build and Run the Application

- Right-click on the project in the Project Explorer.
- Select **Run As -> Maven build....**
- In the **Goals** field, type `clean install` to build the project.
- Click **Run** to build the project. Maven will compile the code and create a `.jar` file.
- To run the application, right-click the project again, go to **Run As**, and select **Java Application**. Choose your `HelloWorld` class if prompted.

Step 4: Migrating the Maven Project to Gradle Using Command Line

Install Gradle:

- Make sure Gradle is installed on your Windows machine. If not, download and install it from Gradle's official website.

Prepare for Migration:

- Open Command Prompt (CMD).
- Navigate to your project's directory in Eclipse's workspace.

```
cd C:\path\to\eclipse-workspace\HelloWorld
```

Migrate to Gradle:

- Run the following command in CMD:

```
gradle init --type pom
```

(This command converts the existing Maven project to a Gradle project by analyzing the pom.xml and creating the corresponding build.gradle file.)

Step 5: Build and Run with Gradle

- Still in CMD, you can build the project using:

```
gradle build
```

- Run the application using:

```
gradle run
```