

1. Add a gradle dependency and its related repository url.

```
dependencies {  
    testCompile group: 'junit', name: 'junit', version: '4.12'  
  
    // Answer 1  
  
    // https://mvnrepository.com/artifact/com.google.code.gson/gson  
  
    compile group: 'com.google.code.gson', name: 'gson', version: '2.8.6'  
}
```



```
dependencies {  
    testCompile group: 'junit', name: 'junit', version: '4.12'  
    // Answer 1  
    // https://mvnrepository.com/artifact/com.google.code.gson/gson  
    compile group: 'com.google.code.gson', name: 'gson', version: '2.8.6'  
}
```

2. Using java plugin, make changes in the manifest to make the jar executable. Using java -jar JAR_NAME, the output should be printed as "Hello World"

```
apply plugin: 'java'  
  
sourceSets {  
    main {  
        java {  
            srcDirs = ["src/main/java"]  
        }  
    }  
}  
  
jar {  
    manifest {  
        attributes(  
            "Main-Class": 'Application',  
            "Class-Path": configurations.compile.collect { it.getName() }.join(' ')  
        )  
    }  
}
```

Main Class Snapshot:

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

Output Snapshot:

```
shubham@shubham:~/IdeaProjects/Gradle_Exercise$ java -jar build/libs/Gradle_Exercise-1.0-SNAPSHOT.jar
Hello World
shubham@shubham:~/IdeaProjects/Gradle_Exercise$
```

3. Differentiate between the different dependency scopes: compile, runtime, testCompile, testRuntime using different dependencies being defined in your build.gradle.

Compile is used for production, to be more clear compile is the group that is used to build the applications main file while testCompile is the group of dependencies used for testing. In short compile is for our main class and testCompile is for our testing classes.

Runtime: This scope indicates that the dependency is not required for compilation, but is for execution. It is in the runtime and test classpaths, but not the compile classpath.

testRuntime: The dependencies required to run the tests. By default, it includes runtime and test compile dependencies.

4. Create a custom plugin which contains a custom task which prints the current date-time. Using that plugin in your project, execute that task after the jar task executes.

```
task showDate{
    dependsOn(build)

    doLast {
        println 'Current Date'+new Date()
    }
}
```

```
shubham@shubham:~/IdeaProjects/Gradle_Exercise$ gradle showDate

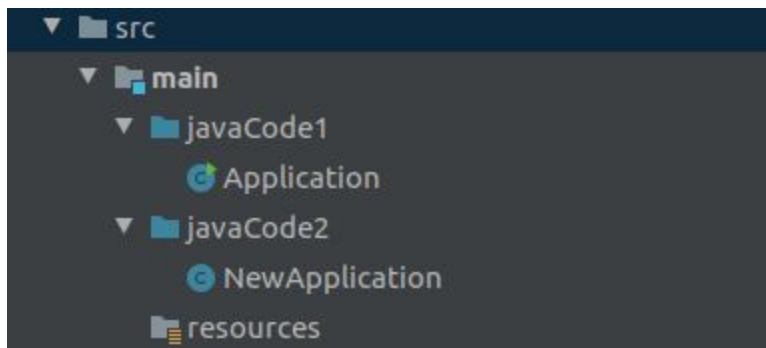
Current DateWed Feb 26 10:00:04 IST 2020
:showDate UP-TO-DATE

BUILD SUCCESSFUL in 0s
```

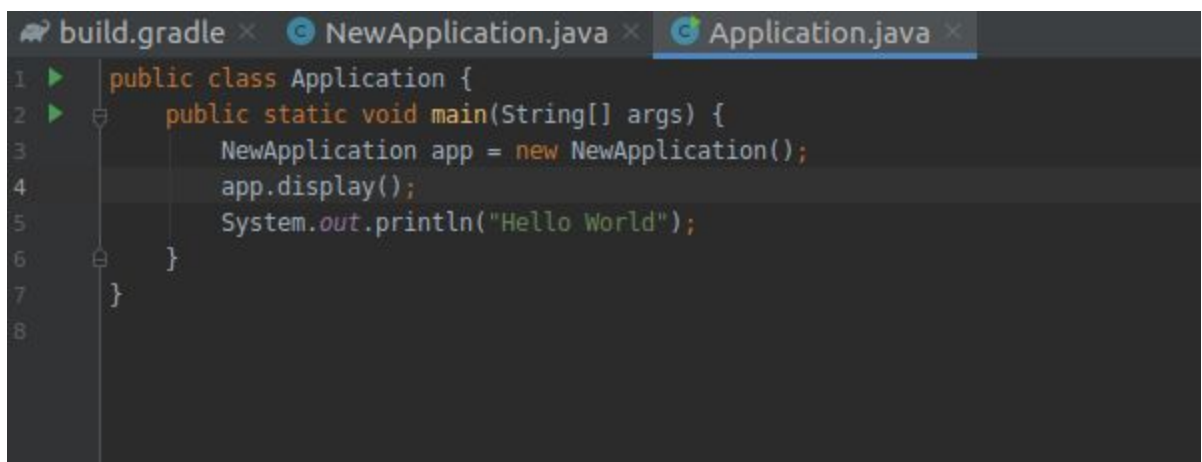
5. Instead of using default source set, use `src/main/javaCode1`, `src/main/javaCode2` to be taken as code source. Make sure that the JAR created contains files from both the directories and not from `src/main/java`.

```
sourceSets{  
    main{  
        java{  
            srcDirs = ["src/main/javaCode1","src/main/javaCode2"]  
        }  
    }  
}
```

2 Directories Created as source snapshot/Project Structure



Main file snapshot



Output snapshot

```

BUILD SUCCESSFUL in 0s
2 actionable tasks: 2 executed
shubham@shubham:~/IdeaProjects/Gradle_Exercise$ java -jar build/libs/Gradle_Exercise-1.0-SNAPSHOT.jar
Printing from Other Class
Hello World
shubham@shubham:~/IdeaProjects/Gradle_Exercise$ 

```

6. Override the Gradle Wrapper task to install a different version of gradle. Make sure that the task written in Q4 also executes with it.

Before running the command the version of wrapper being used is 4.4.1

```

distributionBase=GRADLE_USER_HOME
distributionPath=wrapper/dists
distributionUrl=https\://services.gradle.org/distributions/gradle-4.4.1-bin.zip
zipStoreBase=GRADLE_USER_HOME
zipStorePath=wrapper/dists

```

Command Snapshot

```

shubham@shubham:~/IdeaProjects/Gradle_Exercise$ gradle wrapper --gradle-version 6.2.1

> Configure project :

Current DateWed Feb 26 11:43:15 IST 2020

Deprecated Gradle features were used in this build, making it incompatible with Gradle 7.0.
Use '--warning-mode all' to show the individual deprecation warnings.
See https://docs.gradle.org/6.2.1/userguide/command\_line\_interface.html#sec:command\_line\_warnings

BUILD SUCCESSFUL in 725ms
1 actionable task: 1 executed

```

After running the command the version of wrapper being used is 6.2.1

```

distributionBase=GRADLE_USER_HOME
distributionPath=wrapper/dists
distributionUrl=https\://services.gradle.org/distributions/gradle-6.2.1-bin.zip
zipStoreBase=GRADLE_USER_HOME
zipStorePath=wrapper/dists

```

Checking if the task works

```
shubham@shubham:~/IdeaProjects/Gradle_Exercise$ gradle showDate  
  
> Configure project :  
  
Current DateWed Feb 26 11:46:17 IST 2020
```

7. Run the gradle profile command and attach the resulting files.

file:///home/shubham/IdeaProjects/Gradle_Exercise/build/reports/profile/profile-2020-02-26-11-53-33.html

Output in Idea

```
<!DOCTYPE html>  
  
<html>  
  
<head>  
  
<meta http-equiv="Content-Type" content="text/html; charset=utf-8"/>  
  
<meta http-equiv="x-ua-compatible" content="IE=edge"/>  
  
<title>Profile report</title>  
  
<link href="css/base-style.css" rel="stylesheet" type="text/css"/>  
<link href="css/style.css" rel="stylesheet" type="text/css"/>  
<script src="js/report.js" type="text/javascript"></script>  
  
</head>  
  
<body>  
  
<div id="content">  
  
<h1>Profile report</h1>  
  
<div id="header">  
  
<p>Profiled build: help </p>  
  
<p>Started on: 2020/02/26 - 11:53:33</p>  
  
</div>  
  
<div id="tabs">  
  
<ul class="tabLinks">  
  
<li>
```

```
<a href="#tab0">Summary</a>
</li>
<li>
<a href="#tab1">Configuration</a>
</li>
<li>
<a href="#tab2">Dependency Resolution</a>
</li>
<li>
<a href="#tab3">Artifact Transforms</a>
</li>
<li>
<a href="#tab4">Task Execution</a>
</li>
</ul>
<div class="tab" id="tab0">
<h2>Summary</h2>
<table>
<thead>
<tr>
<th>Description</th>
<th class="numeric">Duration</th>
</tr>
</thead>
<tr>
<td>Total Build Time</td>
<td class="numeric">0.645s</td>
</tr>
<tr>
<td>Startup</td>
<td class="numeric">0.580s</td>
</tr>
```

```
<tr>
<td>Settings and buildSrc</td>
<td class="numeric">0.021s</td>
</tr>
<tr>
<td>Loading Projects</td>
<td class="numeric">0.006s</td>
</tr>
<tr>
<td>Configuring Projects</td>
<td class="numeric">0.023s</td>
</tr>
<tr>
<td>Artifact Transforms</td>
<td class="numeric">0s</td>
</tr>
<tr>
<td>Task Execution</td>
<td class="numeric">0.002s</td>
</tr>
</table>
</div>
<div class="tab" id="tab1">
<h2>Configuration</h2>
<table>
<thead>
<tr>
<th>Project</th>
<th class="numeric">Duration</th>
</tr>
</thead>
<tr>
```

```
<td>All projects</td>
<td class="numeric">0.023s</td>
</tr>
<tr>
<td>:</td>
<td class="numeric">0.023s</td>
</tr>
</table>
</div>
```

```
<div class="tab" id="tab2">
<h2>Dependency Resolution</h2>
```

```
<table>
<thead>
<tr>
<th>Dependencies</th>
<th class="numeric">Duration</th>
</tr>
</thead>
<tr>
<td>All dependencies</td>
<td class="numeric">0s</td>
</tr>
<tr>
<td>:compile</td>
<td class="numeric">0s</td>
</tr>
</table>
</div>
```

```
<div class="tab" id="tab3">
<h2>Artifact Transforms</h2>
<table>
<thead>
```



```
<tr>
<th>Transform</th>
<th class="numeric">Duration</th>
</tr>
</thead>
<tr>
<td>All transforms</td>
<td class="numeric">0s</td>
</tr>
</table>
</div>
<div class="tab" id="tab4">
<h2>Task Execution</h2>
<table>
<thead>
<tr>
<th>Task</th>
<th class="numeric">Duration</th>
<th>Result</th>
</tr>
</thead>
<tr>
<td>:</td>
<td class="numeric">0.002s</td>
<td>(total)</td>
</tr>
<tr>
<td class="indentPath">:help</td>
<td class="numeric">0.002s</td>
<td></td>
</tr>
</table>
```

```

</div>
</div>
<div id="footer">
<p>
<div>
<label class="hidden" id="label-for-line-wrapping-toggle" for="line-wrapping-toggle">Wrap lines
<input id="line-wrapping-toggle" type="checkbox" autocomplete="off"/>
</label>
</div>Generated by
<a href="http://www.gradle.org">Gradle 6.2.1</a> at 26 Feb, 2020 11:53:33 AM</p>
</div>
</div>
</body>
</html>

```

Gradle --profile

```

BUILD SUCCESSFUL in 642ms
1 actionable task: 1 executed

See the profiling report at: file:///home/shubham/IdeaProjects/Gradle Exercise/build/reports/profile/profile-2020-02-26-11-53-33.html
A fine-grained performance profile is available; use the --scan option.
shubham@shubham: ~/IdeaProjects/Gradle Exercise

```

Profile report

Profiled build: help

Started on: 2020/02/26 - 11:53:33

Summary

Configuration

Dependency Resolution

Artifact Transforms

Task Execution

Description	Duration
Total Build Time	0.645s
Startup	0.580s
Settings and buildSrc	0.021s
Loading Projects	0.006s
Configuring Projects	0.023s
Artifact Transforms	0s
Task Execution	0.002s

