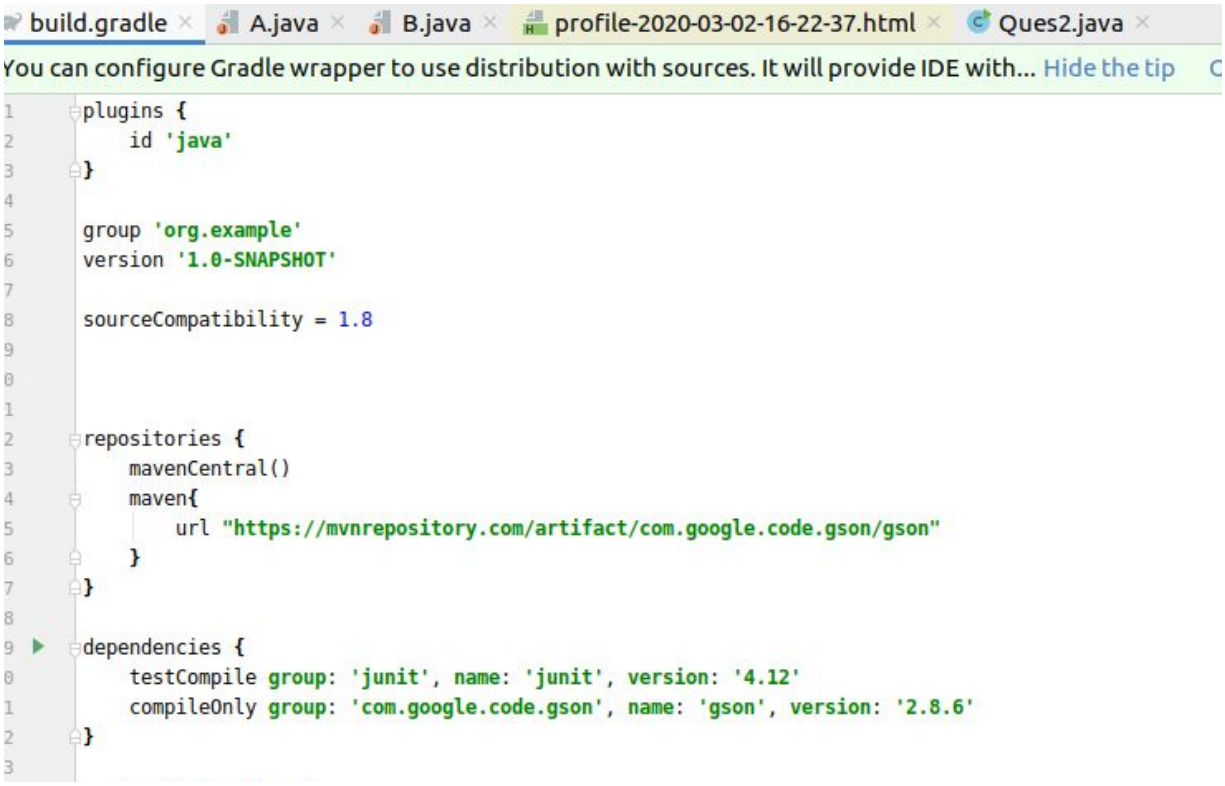
Dependency Management using Gradle

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

```
plugins {
  id 'java'
}

group 'org.example'
version '1.0-SNAPSHOT'
sourceCompatibility = 1.8
repositories {
  mavenCentral()
  maven{
     url "https://mvnrepository.com/artifact/com.google.code.gson/gson"
  }
}

dependencies {
  testCompile group: 'junit', name: 'junit', version: '4.12'
  compileOnly group: 'com.google.code.gson', name: 'gson', version: '2.8.6'
}
```

OUTPUT

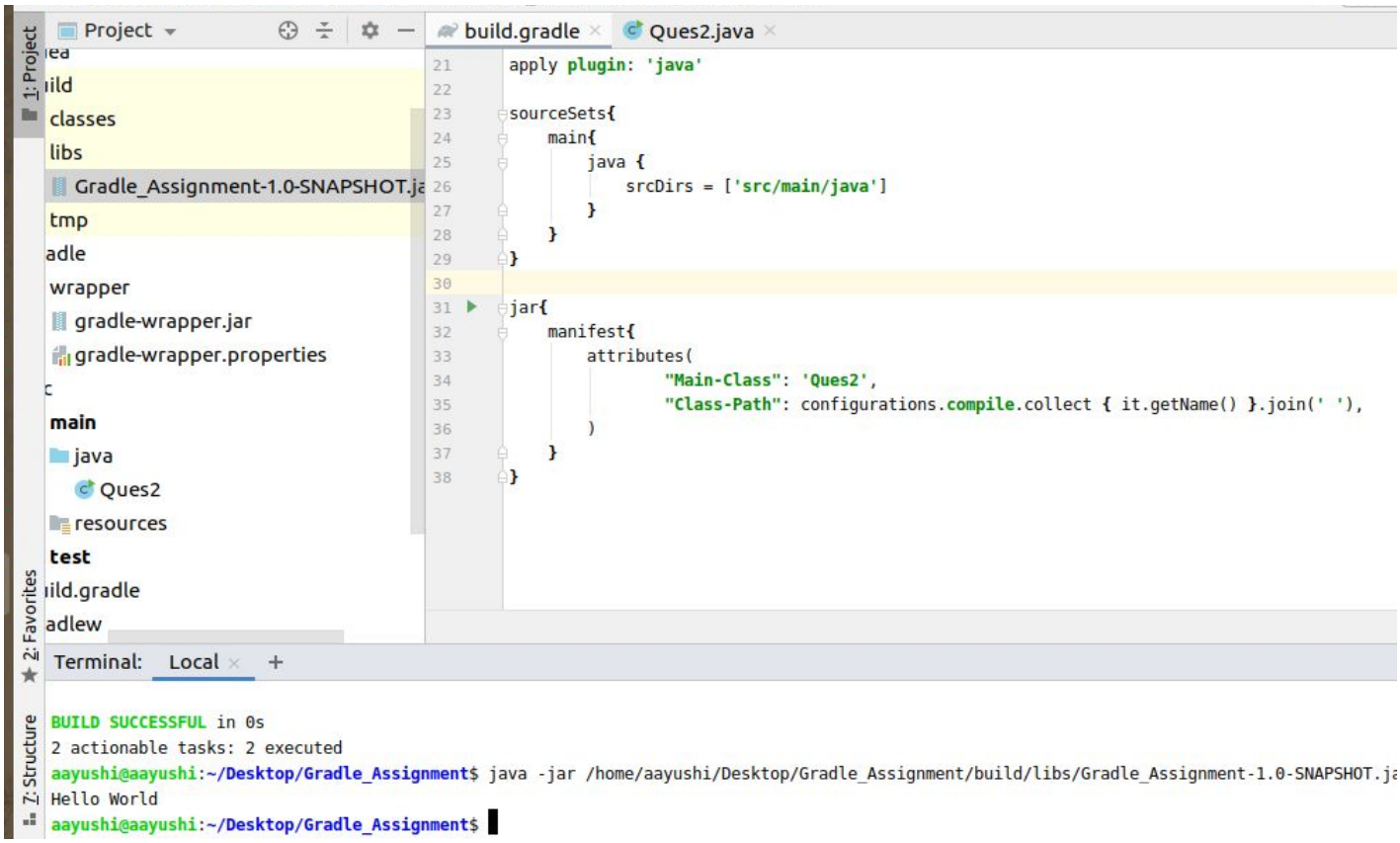


2. **Using java plugin, make changes in the manifest to make the jar executable. Using java -jar JAR_NAME, the output should be printed as "Hello World"**

```
plugins {
  id 'java'
}

group 'org.example'
version '1.0-SNAPSHOT'

sourceCompatibility = 1.8


sourceSets{
  main{
     java {
        srcDirs = ['src/main/java']
     }
  }
}

jar{
  manifest{
     attributes(
           "Main-Class": 'Ques2',
           "Class-Path": configurations.compile.collect { it.getName() }.join(' '),
     )
  }
}

repositories {
  mavenCentral()
  maven{
     url "https://mvnrepository.com/artifact/com.google.code.gson/gson"
  }
}

dependencies {
  testCompile group: 'junit', name: 'junit', version: '4.12'
  compileOnly group: 'com.google.code.gson', name: 'gson', version: '2.8.6'
}
```

OUTPUT


build.gradle
A.java
B.java
profile-2020-03-02-16-22-37.html
Ques2.java
You can configure Gradle wrapper to use distribution with sources. It will provide IDE with... Hide the tip
Ok, ap
plugins {
id 'java'
}
group 'org.example'
version '1.0-SNAPSHOT'
sourceCompatibility = 1.8
sourceSets{
main{
java {
srcDirs = ['src/main/java']
}
}
}
jar{
manifest{
attributes(
"Main-Class": 'Ques2',
"Class-Path": configurations.compile.collect { it.getName() }.join(' '),
)
}
}


Project
build.gradle
Ques2.java
classes
libs
Gradle_Assignment-1.0-SNAPSHOT.ja
tmp
wrapper
gradle-wrapper.jar
gradle-wrapper.properties
main
java
Ques2
resources
test
adlew
apply plugin: 'java'
sourceSets{
main{
java {
srcDirs = ['src/main/java']
}
}
}
jar{
manifest{
attributes(
"Main-Class": 'Ques2',
"Class-Path": configurations.compile.collect { it.getName() }.join(' '),
)
}
}
Terminal:
Local
BUILD SUCCESSFUL in 0s
2 actionable tasks: 2 executed
aayushi@aayushi:~/Desktop/Gradle_Assignment$ java -jar /home/aayushi/Desktop/Gradle_Assignment/build/libs/Gradle_Assignment-1.0-SNAPSHOT.ja
Hello World
aayushi@aayushi:~/Desktop/Gradle_Assignment$

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

Ans -

Compile: The compile scope is the default scope. We can use it when we have no special requirements for declaring a certain dependency.

Runtime: We use the runtime scope for dependencies that are not needed at compile time, like when we're compiling against an API and only need the implementation of that API at runtime.

testCompile: We can use the testCompile scope for dependencies that are only needed in tests compile time and that should not be available in production code.

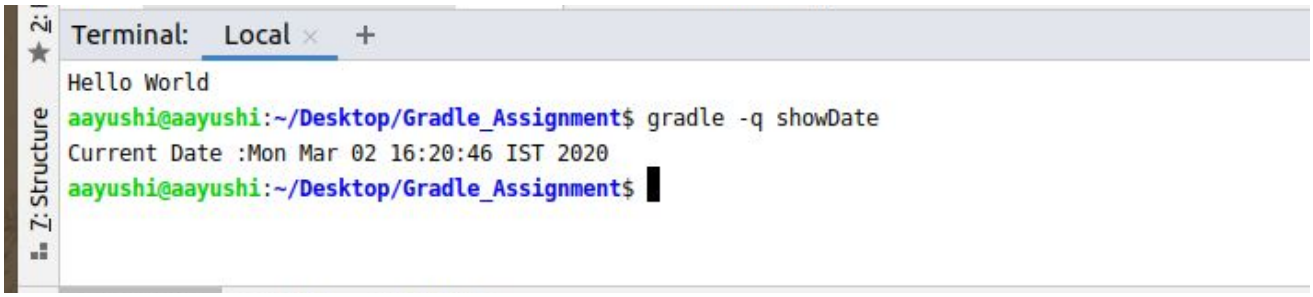
testRuntime: We use the runRuntime scope for dependencies that are not needed at compile time, like when we're compiling against an API and only need the implementation of that API at runtime.

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();
  }
}
```

OUTPUT

```
task showDate{
    dependsOn(build)
    doLast {
        println 'Current Date :' + new Date();
    }
}
```

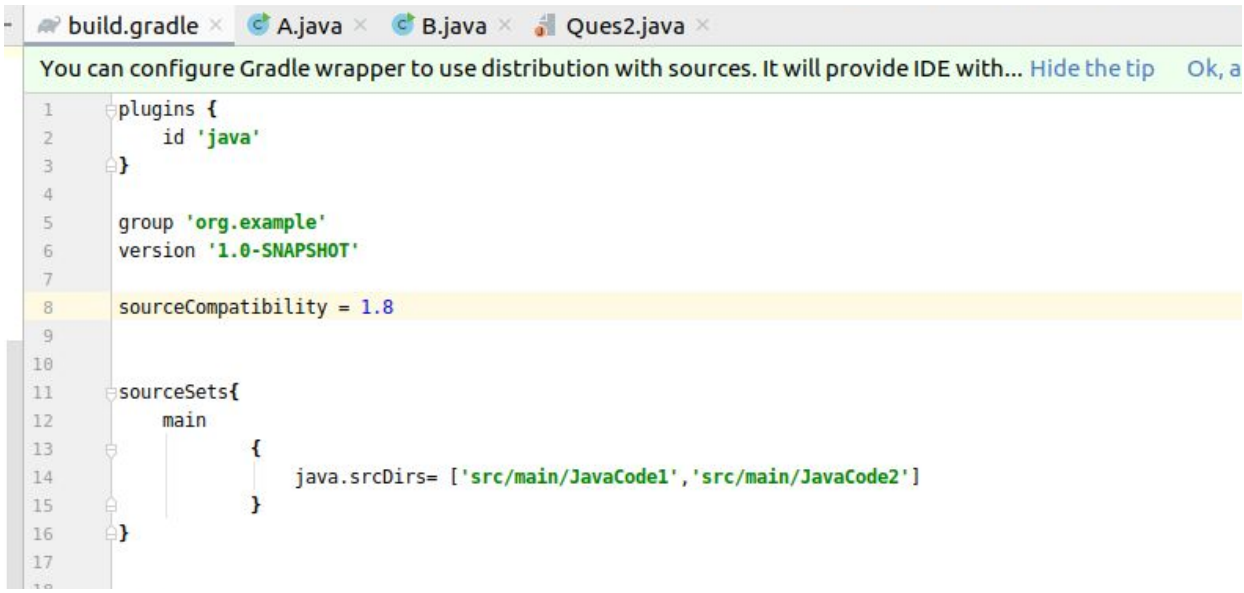


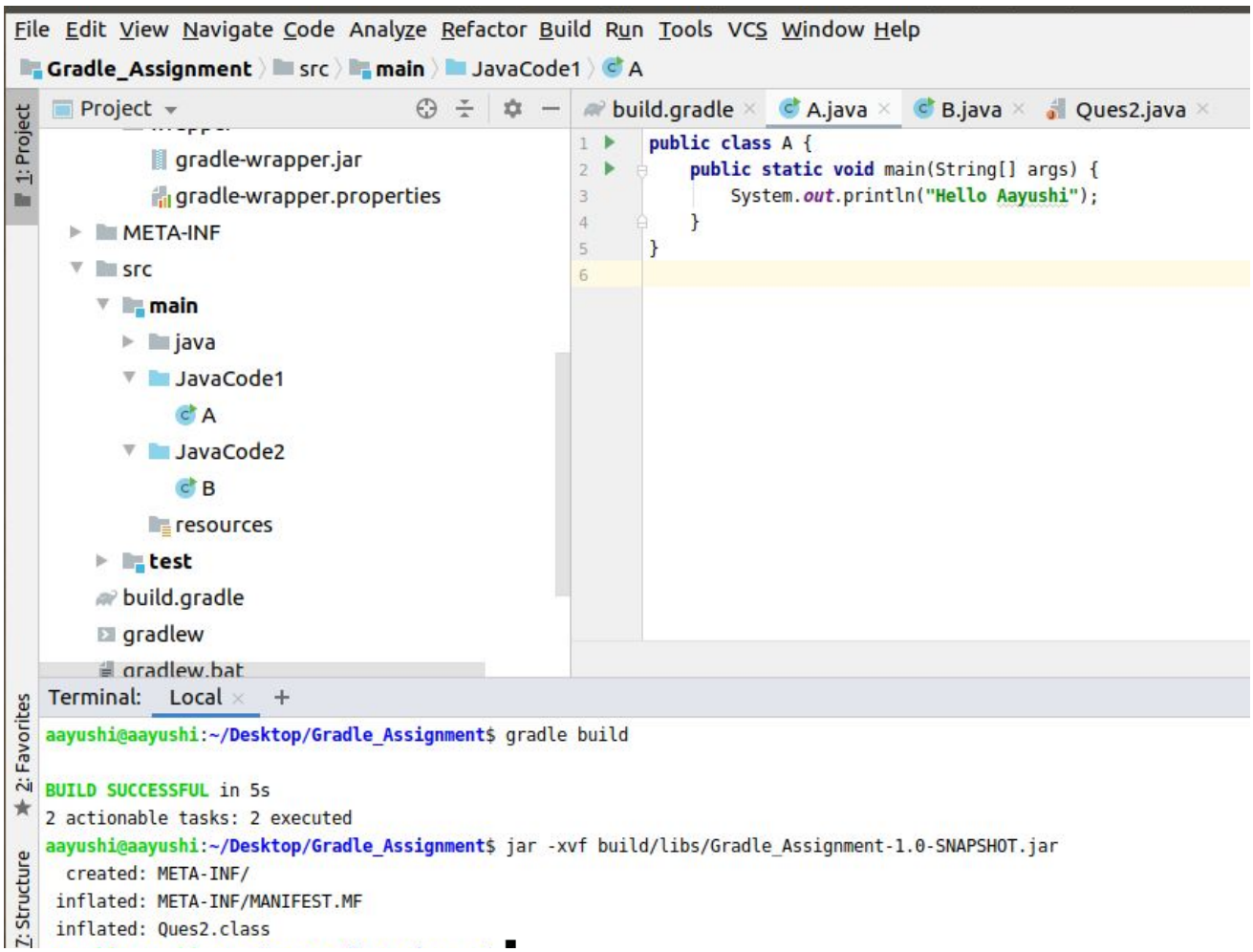
5. **Instead of using default source set, use src/main/javaCode1, src/main/javaCode2 to be taken as code source. Make sure that the JAR created contains files from both the directories and not from src/main/java.**

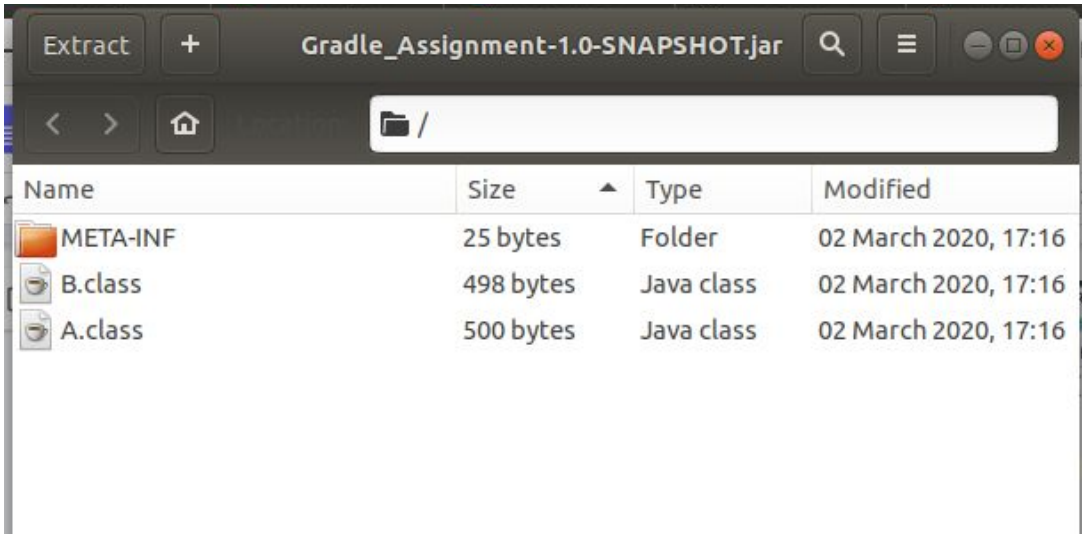
CODE

```
sourceSets{
  main
        {
           java.srcDirs= ['src/main/JavaCode1','src/main/JavaCode2']
        }
}
```

OUTPUT


build.gradle
A.java
B.java
Ques2.java
You can configure Gradle wrapper to use distribution with sources. It will provide IDE with... Hide the tip
Ok, a
plugins {
id 'java'
}
group 'org.example'
version '1.0-SNAPSHOT'
sourceCompatibility = 1.8
sourceSets{
main
{
java.srcDirs= ['src/main/JavaCode1','src/main/JavaCode2']
}
}

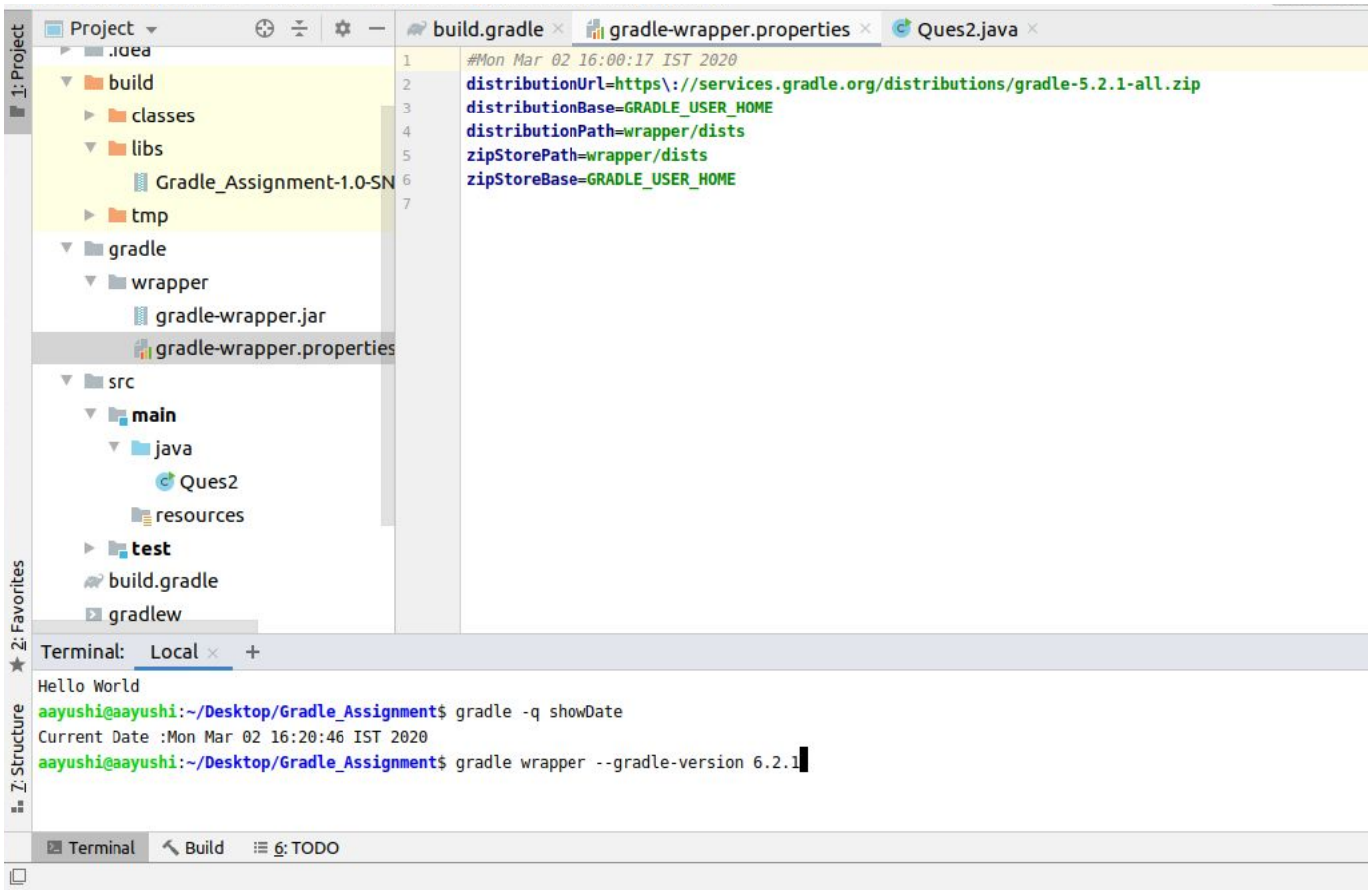

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
Gradle_Assignment
src
main
JavaCode1
A
Project
gradle-wrapper.jar
gradle-wrapper.properties
META-INF
src
main
java
JavaCode1
A
JavaCode2
B
resources
test
build.gradle
gradlew
gradlew.bat
public class A {
public static void main(String[] args) {
System.out.println("Hello Aayushi");
}
}
Terminal:
Local
aayushi@aayushi:~/Desktop/Gradle_Assignment$ gradle build
BUILD SUCCESSFUL in 5s
2 actionable tasks: 2 executed
aayushi@aayushi:~/Desktop/Gradle_Assignment$ jar -xvf build/libs/Gradle_Assignment-1.0-SNAPSHOT.jar
created: META-INF/
inflated: META-INF/MANIFEST.MF
inflated: Ques2.class

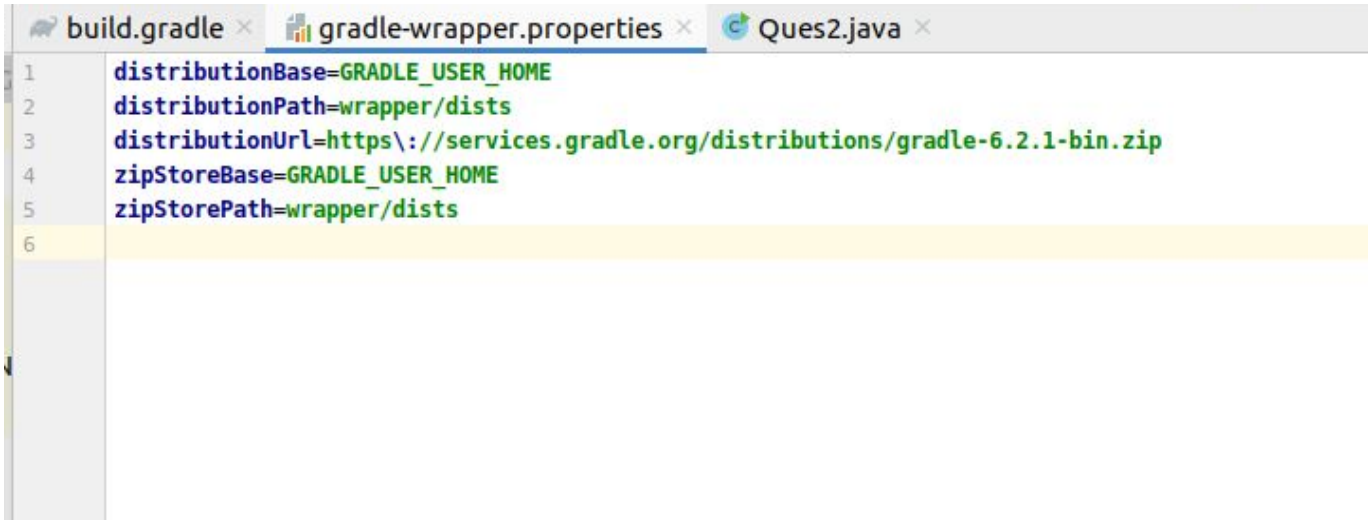


6. **Override the Gradle Wrapper task to install a different version of gradle. Make sure that the task written in Q4 also executes with it.**

Previous Version: gradle-5.2.1
Gradle wrapper --gradle-version 6.2.1
New Version: gradle-6.2.1

OUTPUT


Project
build.gradle
gradle-wrapper.properties
Ques2.java
#Mon Mar 02 16:00:17 IST 2020
distributionUrl=https\://services.gradle.org/distributions/gradle-5.2.1-all.zip
distributionBase=GRADLE_USER_HOME
distributionPath=wrapper/dists
zipStorePath=wrapper/dists
zipStoreBase=GRADLE_USER_HOME
build
classes
libs
Gradle_Assignment-1.0-SN
tmp
gradle
wrapper
gradle-wrapper.jar
gradle-wrapper.properties
src
main
java
Ques2
resources
test
build.gradle
gradlew
Terminal: Local
Hello World
aayushi@aayushi:~/Desktop/Gradle_Assignment$ gradle -q showDate
Current Date :Mon Mar 02 16:20:46 IST 2020
aayushi@aayushi:~/Desktop/Gradle_Assignment$ gradle wrapper --gradle-version 6.2.1
Terminal
Build
6: TODO


build.gradle
gradle-wrapper.properties
Ques2.java
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

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

CODE

Gradle --profile

Profile-2020-03-02-16-22-37.html

```
<!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: 2020/03/02 - 16:22:37</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">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">0.336s</td>
</tr>
<tr>
<td>Startup</td>
<td class="numeric">0.315s</td>
</tr>
<tr>
<td>Settings and BuildSrc</td>
<td class="numeric">0.001s</td>
</tr>
<tr>
<td>Loading Projects</td>
<td class="numeric">0.001s</td>
</tr>
<tr>
<td>Configuring Projects</td>
<td class="numeric">0.010s</td>
</tr>
<tr>
<td>Task Execution</td>
<td class="numeric">0.001s</td>
</tr>
</table>

<h2>Configuration</h2>
<table>
<thead>
<tr>
<th>Project</th>
<th class="numeric">Duration</th>
</tr>
</thead>
<tr>
<td>All projects</td>
<td class="numeric">0.010s</td>

</tr>
<tr>
<td>:</td>
<td class="numeric">0.010s</td>
</tr>
</table>

<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>

<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">0.001s</td>
<td>(total)</td>
</tr>
<tr>
<td class="indentPath">:help</td>

```
<td class="numeric">0.001s</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 4.10.3</a> at 2 Mar, 2020 4:22:37 PM</p>
</div>
</div>
</body>
</html>
```

OUTPUT


build.gradle
gradle-wrapper.properties
profile-2020-03-02-16-22-37.html
Ques2.java
<!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>

<h1>Profile report</h1>

Profiled build: help
Started on: 2020/03/02 - 16:22:37

<ul class="tabLinks">

Summary

html › body › div#content › div#header › p


localhost:63342/Gradle_Assignment/build/reports/profile/profile-2020-03-02-16-22-37.html?_ijt=vvvsnf7
Profile report
Profiled build: help
Started on: 2020/03/02 - 16:22:37
Summary
Configuration
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Duration
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Task Execution
0.001s
Generated by Gradle 4.10.3 at 2 Mar, 2020 4:22:37 PM