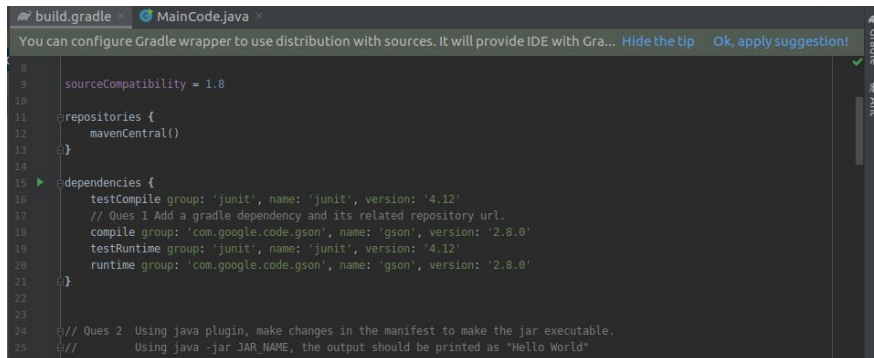


1. Add a gradle dependency and its related repository url.

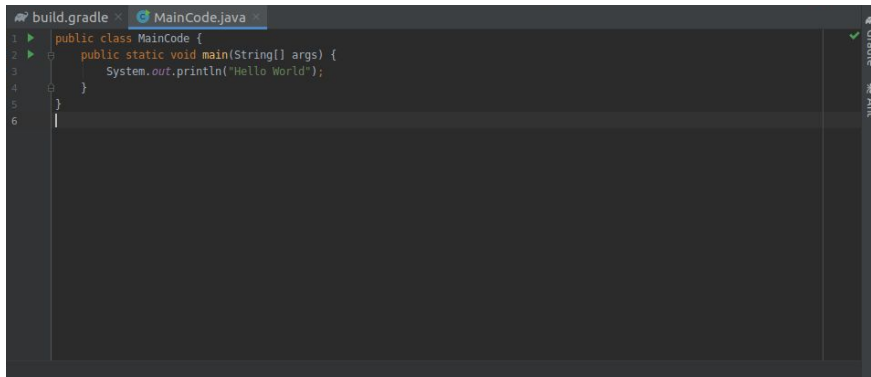
Sol.



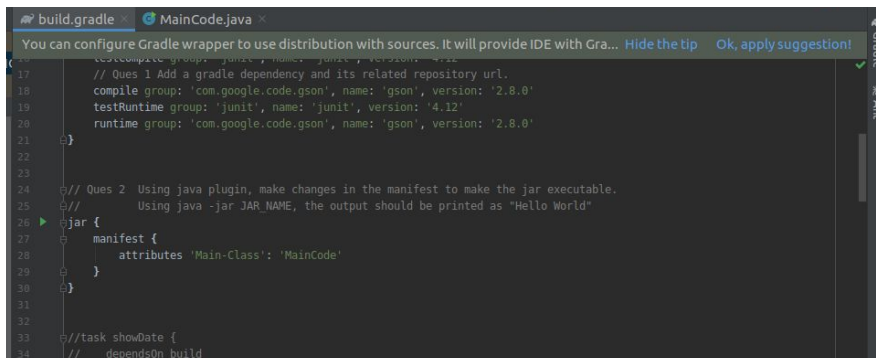
```
8 sourceCompatibility = 1.8
9
10 repositories {
11     mavenCentral()
12 }
13
14 dependencies {
15     testCompile group: 'junit', name: 'junit', version: '4.12'
16     // Ques 1 Add a gradle dependency and its related repository url.
17     compile group: 'com.google.code.gson', name: 'gson', version: '2.8.0'
18     testRuntime group: 'junit', name: 'junit', version: '4.12'
19     runtime group: 'com.google.code.gson', name: 'gson', version: '2.8.0'
20 }
21
22
23
24 // Ques 2 Using java plugin, make changes in the manifest to make the jar executable.
25 // Using java -jar JAR NAME, the output should be printed as "Hello World"
```

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"

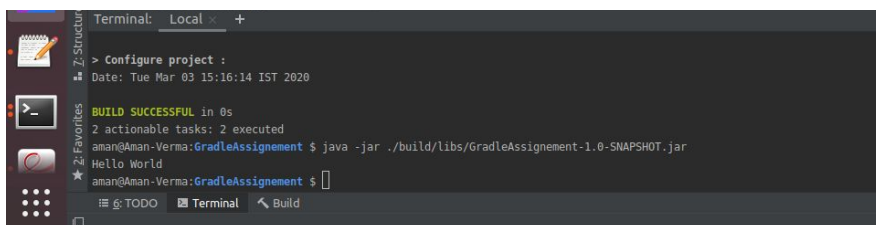
Sol.



```
build.gradle x MainCode.java x
1 public class MainCode {
2     public static void main(String[] args) {
3         System.out.println("Hello World");
4     }
5 }
6
```



```
build.gradle x MainCode.java x
You can configure Gradle wrapper to use distribution with sources. It will provide IDE with Gra... Hide the tip Ok, apply suggestion!
17 // Ques 1 Add a gradle dependency and its related repository url.
18 compile group: 'com.google.code.gson', name: 'gson', version: '2.8.0'
19 testRuntime group: 'junit', name: 'junit', version: '4.12'
20 runtime group: 'com.google.code.gson', name: 'gson', version: '2.8.0'
21 }
22
23 // Ques 2 Using java plugin, make changes in the manifest to make the jar executable.
24 // Using java -jar JAR_NAME, the output should be printed as "Hello World"
25
26 jar {
27     manifest {
28         attributes 'Main-Class': 'MainCode'
29     }
30 }
31
32
33 //task showDate {
34 //    dependsOn build
35 }
```



```
Terminal: Local x +
> Configure project :
Date: Tue Mar 03 15:16:14 IST 2020

BUILD SUCCESSFUL in 0s
2 actionable tasks: 2 executed
aman@Aman-Verma:GradleAssignment $ java -jar ./build/libs/GradleAssignment-1.0-SNAPSHOT.jar
Hello World
aman@Aman-Verma:GradleAssignment $
```

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

Sol.

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

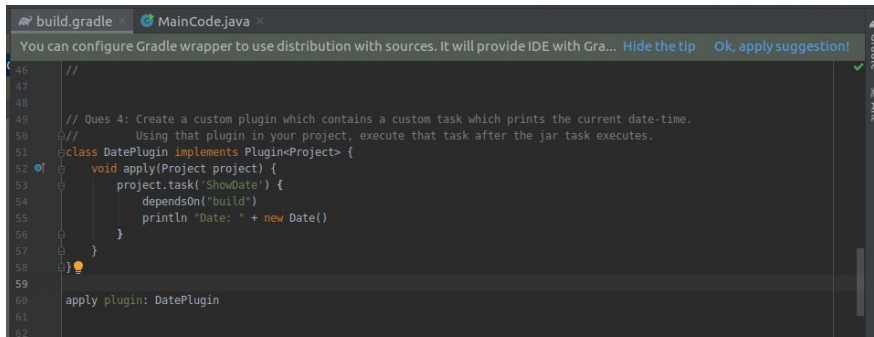
Runtime: We use the runtime scope for dependencies that are not needed at compile time, like when we're compiling against an API and only need the implementation of that API at runtime. An example is SLF4J where we include slf4j-api to the compile scope and an implementation of that API (like slf4j-log4j12 or logback-classic) to the runtime scope.

TestCompile: Similar to compileOnly, but dependencies declared with testCompileOnly are only available during compilation of tests and not at runtime. I can't think of a specific example, but there may be some annotation processors similar to **Lombok** that are only relevant for tests.

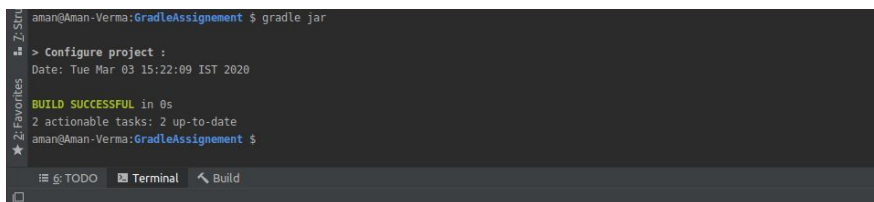
TestRuntime: Similar to runtimeOnly, but dependencies declared with testRuntimeOnly are only available during runtime of tests and not at compile time. An example would be declaring a dependency to the JUnit Jupiter Engine, which runs our unit tests, but which we don't compile against.

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.

Sol.



```
16 //
17
18 // Ques 4: Create a custom plugin which contains a custom task which prints the current date-time.
19 // Using that plugin in your project, execute that task after the jar task executes.
20 class DatePlugin implements Plugin<Project> {
21     void apply(Project project) {
22         project.task('ShowDate') {
23             dependsOn('build')
24             println "Date: " + new Date()
25         }
26     }
27 }
28
29 apply plugin: DatePlugin
```



```
aman@Aman-Verma:GradleAssignment $ gradle jar
> Configure project :
Date: Tue Mar 03 15:22:09 IST 2020
BUILD SUCCESSFUL in 0s
2 actionable tasks: 2 up-to-date
aman@Aman-Verma:GradleAssignment $
```

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`.

Sol.

```
build.gradle x Java1.java x MainCode.java x
You can configure Gradle wrapper to use distribution with sources. It will provide IDE with Gra... Hide the tip Ok, apply suggestion!

59
60
61
62
63 // Ques 5: Instead of using default source set, use src/main/javaCode1,
64 // src/main/javaCode2 to be taken as code source. Make sure that the JAR created contains
65 // files from both the directories and not from src/main/java.
66
67 sourceSets {
68     main {
69         java.srcDirs = ['src/main/javaCode1', 'src/main/javaCode2']
70     }
71 }

jar {
    manifest {
```

```
build.gradle x Java1.java x MainCode.java x
public class Java1 {
    public static void main(String[] args) {
        System.out.println("Hey");
    }
}
```

```
build.gradle x Java1.java x MainCode.java x
You can configure Gradle wrapper to use distribution with sources. It will provide IDE with Gra... Hide the tip Ok, apply suggestion!

15
16 dependencies {
17     testCompile group: 'junit', name: 'junit', version: '4.12'
18     // Ques 1 Add a gradle dependency and its related repository url.
19     compile group: 'com.google.code.gson', name: 'gson', version: '2.8.0'
20     testRuntime group: 'junit', name: 'junit', version: '4.12'
21     runtime group: 'com.google.code.gson', name: 'gson', version: '2.8.0'
22 }
23
24 // Ques 2 Using java plugin, make changes in the manifest to make the jar executable.
25 // Using java -jar JAR_NAME, the output should be printed as "Hello World"
26 jar {
27     manifest {
28         attributes 'Main-Class': 'Java1'
29     }
30 }
31
32
```

```
Terminal: Local x +
> Configure project :
Date: Tue Mar 03 15:26:58 IST 2020

BUILD SUCCESSFUL in 0s
2 actionable tasks: 2 executed
aman@Aman-Verma:GradleAssignment $ java -jar ./build/libs/GradleAssignment-1.0-SNAPSHOT.jar
Hey
aman@Aman-Verma:GradleAssignment $
```

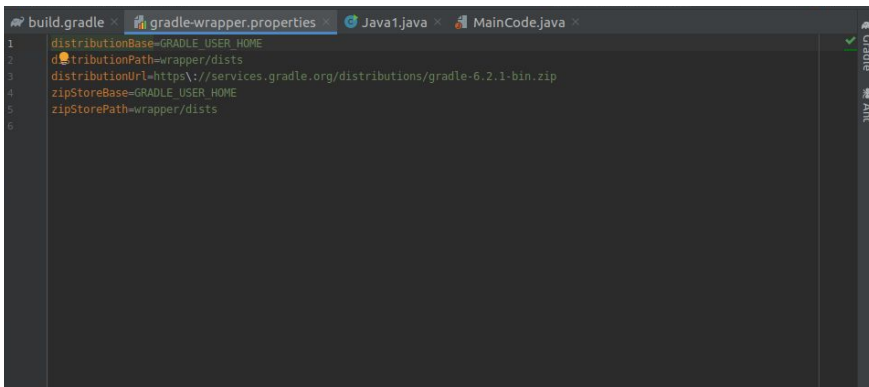
6. Override the Gradle Wrapper task to install a different version of gradle. Make sure that the task written in Q4 also executes with it.

Sol.

```
2 actionable tasks: 2 executed
aman@Aman-Verma:GradleAssignment $ java -jar ./build/libs/GradleAssignment-1.0-SNAPSHOT.jar
Hey
aman@Aman-Verma:GradleAssignment $ gradle wrapper --gradle-version 6.2.1

> Configure project :
Date: Tue Mar 03 15:50:24 IST 2020

BUILD SUCCESSFUL in 0s
```



The screenshot shows an IDE with several tabs open: build.gradle, gradle-wrapper.properties, Java1.java, and MainCode.java. The gradle-wrapper.properties file is selected and displays the following configuration:

```
1 distributionBase=GRADLE_USER_HOME
2 distributionPath=wrapper/dists
3 distributionUrl=https://services.gradle.org/distributions/gradle-6.2.1-bin.zip
4 zipStoreBase=GRADLE_USER_HOME
5 zipStorePath=wrapper/dists
```

On the right side of the IDE, there is a vertical toolbar with icons for Gradle (a green checkmark), Ant, and a trash can icon.

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

Sol.

```
Terminal: Local +
aman@Aman-Verma:GradleAssignment $ gradle build --profile

> Configure project :
Date: Tue Mar 03 15:58:37 IST 2020

BUILD SUCCESSFUL in 0s
2 actionable tasks: 2 up-to-date

See the profiling report at: file:///home/aman/IdeaProjects/core-java/src/GradleAssignment/build/reports/profile/profile-2020-03-03-15-58-37.html
A fine-grained performance profile is available: use the --scan option.
aman@Aman-Verma:GradleAssignment $
```

file:///home/aman/IdeaProjects/core-java/src/GradleAssignment/build/reports/profile/prof

Profile report

Profiled build: build
Started on: 2020/03/03 - 15:58:37

Summary Configuration Dependency Resolution Task Execution

Description	Duration
Total Build Time	0.349s
Startup	0.314s
Settings and BuildSrc	0s
Loading Projects	0.001s
Configuring Projects	0.009s
Task Execution	0.008s

Generated by [Gradle 4.10.3](#) at 3 Mar, 2020 3:58:37 PM