工程化专题之Maven

1. 认识Maven

2. 优势

1. 约定优于配置
2. 简单
3. 测试支持
4. 构建简单
5. CI
6. 插件丰富

3. 下载

1. https://maven.apache.org/download.cgi
2. 安装
3. 超级pom文件：maven-model-builder-3.3.9.jar/org/apache/maven/model
4. 配置 MVM_HOME

   1）Windows 设置 path

   2）Linux 设置 .bash_profile

   3）设置 MAVEN_OPTS 能够直接重复使用

   4）配置 setting.xml：

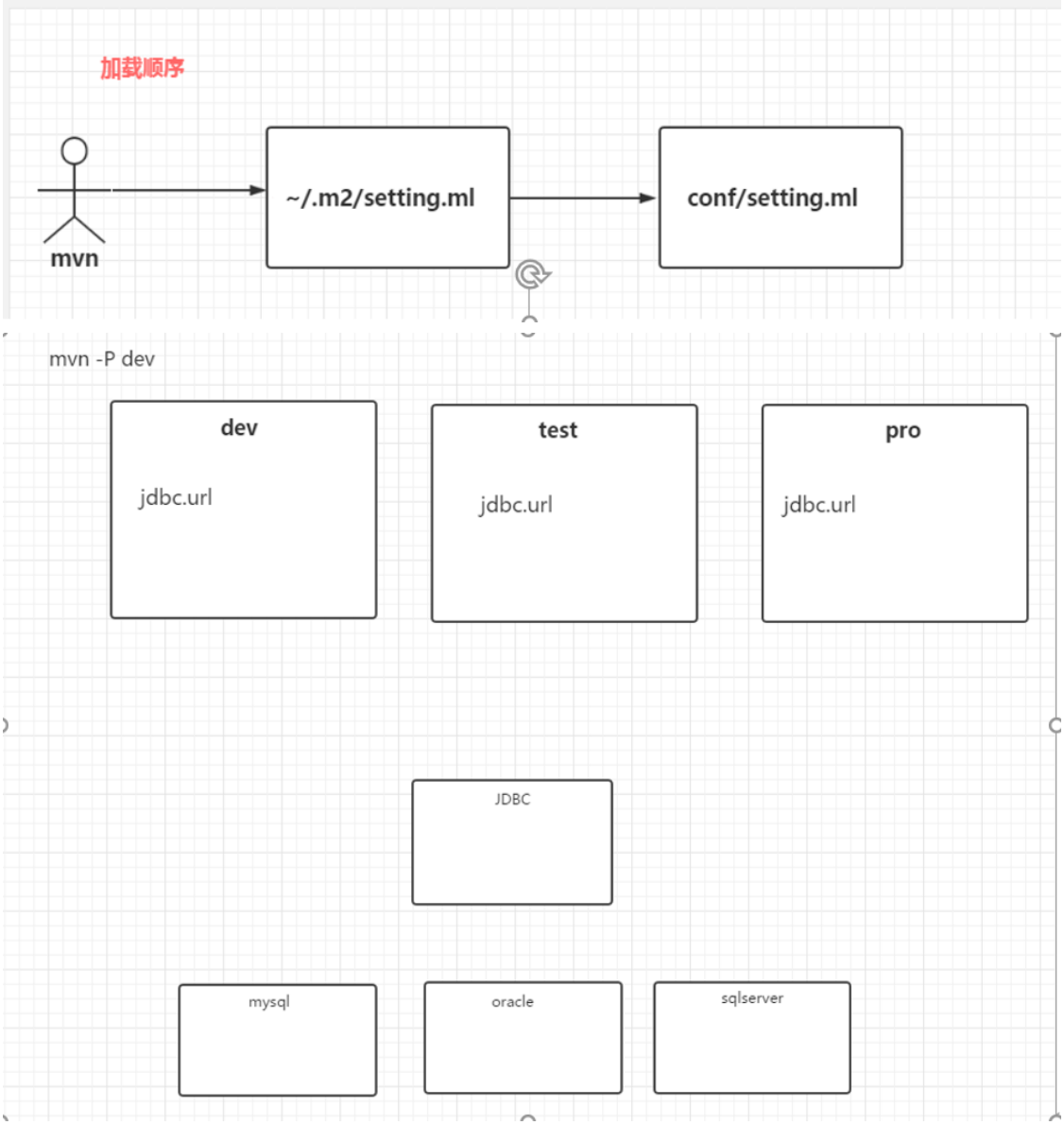
- 使用 mvn 命令时，默认先使用 `C:\Users\Allen\.m2` 路径下找到setting.xml文件配置，如果找不到，就回去找maven安装目录下的 conf文件夹下的 setting.xml 进行配置
- ```
  <mirror>
      <id>alimaven</id>
      <name>aliyun maven</name>
      <url>http://maven.aliyun.com/nexus/content/groups/public/</url>
      <mirrorOf>central</mirrorOf>
  </mirror>

  <mirror>
      <id>ui</id>
      <mirrorOf>central</mirrorOf>
      <name>Human Readable Name for this Mirror.</name>
      <url>http://uk.maven.org/maven2/</url>
  </mirror>

  <mirror>
      <id>osc</id>
      <mirrorOf>central</mirrorOf>
      <url>http://maven.oschina.net/content/groups/public/</url>
  </mirror>

  <mirror>
  ```
  ```

```
    <id>osc_thirdparty</id>
    <mirrorOf>thirdparty</mirrorOf>
    <url>http://maven.oschina.net/content/repositories/thirdparty/</url>
</mirror>
```

- 

maven 的 setting.xml 配置文件

- ```
  <?xml version="1.0" encoding="UTF-8"?>

  <!--
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  software distributed under the License is distributed on an
  "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY
  KIND, either express or implied.  See the License for the
  ```
  ```

```
specific language governing permissions and limitations
under the License.
-->

<!--
 | This is the configuration file for Maven. It can be specified at two
levels:
 |
 |  1. User Level. This settings.xml file provides configuration for a
single user,
 |                 and is normally provided in
${user.home}/.m2/settings.xml.
 |
 |                 NOTE: This location can be overridden with the CLI
option:
 |
 |                 -s /path/to/user/settings.xml
 |
 |  2. Global Level. This settings.xml file provides configuration for all
Maven
 |                 users on a machine (assuming they're all using the same
Maven
 |                 installation). It's normally provided in
 |                 ${maven.conf}/settings.xml.
 |
 |                 NOTE: This location can be overridden with the CLI
option:
 |
 |                 -gs /path/to/global/settings.xml
 |
 | The sections in this sample file are intended to give you a running start
at
 | getting the most out of your Maven installation. Where appropriate, the
default
 | values (values used when the setting is not specified) are provided.
 |
 |-->
<settings xmlns="http://maven.apache.org/SETTINGS/1.0.0"
          xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
          xsi:schemaLocation="http://maven.apache.org/SETTINGS/1.0.0
http://maven.apache.org/xsd/settings-1.0.0.xsd">
  <!-- localRepository
   | The path to the local repository maven will use to store artifacts.
   |
   | Default: ${user.home}/.m2/repository
  -->
  <localRepository>G:\blue_world\Documents\study-repository\repository-
springboot2.0.X</localRepository>


  <!-- 交互式模型 -->
  <!-- interactiveMode
   | This will determine whether maven prompts you when it needs input. If
set to false,
   | maven will use a sensible default value, perhaps based on some other
setting, for
   | the parameter in question.
   |
```

```
    | Default: true
  <interactiveMode>true</interactiveMode>
  -->

  <!-- offline
    | Determines whether maven should attempt to connect to the network when
executing a build.
    | This will have an effect on artifact downloads, artifact deployment,
and others.
    |
    | Default: false
  <offline>false</offline>
  -->

  <!-- maven的插件 -->
  <!-- pluginGroups
    | This is a list of additional group identifiers that will be searched
when resolving plugins by their prefix, i.e.
    | when invoking a command line like "mvn prefix:goal". Maven will
automatically add the group identifiers
    | "org.apache.maven.plugins" and "org.codehaus.mojo" if these are not
already contained in the list.
    |-->
  <pluginGroups>
    <!-- pluginGroup
      | Specifies a further group identifier to use for plugin lookup.
    <pluginGroup>com.your.plugins</pluginGroup>
    -->
  </pluginGroups>

  <!-- 配置代理 -->
  <!-- proxies
    | This is a list of proxies which can be used on this machine to connect
to the network.
    | Unless otherwise specified (by system property or command-line switch),
the first proxy
    | specification in this list marked as active will be used.
    |-->
  <proxies>
    <!-- proxy
      | Specification for one proxy, to be used in connecting to the network.
      |
    <proxy>
      <id>optional</id>
      <active>true</active>
      <protocol>http</protocol>
      <username>proxyuser</username>
      <password>proxypass</password>
      <host>proxy.host.net</host>
      <port>80</port>
      <nonProxyHosts>local.net|some.host.com</nonProxyHosts>
    </proxy>
    -->
  </proxies>

  <!-- 搭建私服 -->
  <!-- servers
```

```
   | This is a list of authentication profiles, keyed by the server-id used
within the system.
   | Authentication profiles can be used whenever maven must make a
connection to a remote server.
   |-->
  <servers>
    <!-- server
     | Specifies the authentication information to use when connecting to a
particular server, identified by
     | a unique name within the system (referred to by the 'id' attribute
below).
     |
     | NOTE: You should either specify username/password OR
privateKey/passphrase, since these pairings are
     |       used together.
     |
    <server>
      <id>deploymentRepo</id>
      <username>repouser</username>
      <password>repopwd</password>
    </server>
    -->

    <!-- Another sample, using keys to authenticate.
    <server>
      <id>siteServer</id>
      <privateKey>/path/to/private/key</privateKey>
      <passphrase>optional; leave empty if not used.</passphrase>
    </server>
    -->
  </servers>

  <!-- mirrors
   | This is a list of mirrors to be used in downloading artifacts from
remote repositories.
   |
   | It works like this: a POM may declare a repository to use in resolving
certain artifacts.
   | However, this repository may have problems with heavy traffic at times,
so people have mirrored
   | it to several places.
   |
   | That repository definition will have a unique id, so we can create a
mirror reference for that
   | repository, to be used as an alternate download site. The mirror site
will be the preferred
   | server for that repository.
   |-->
  <mirrors>
    <!-- mirror
     | Specifies a repository mirror site to use instead of a given
repository. The repository that
     | this mirror serves has an ID that matches the mirrorOf element of
this mirror. IDs are used
     | for inheritance and direct lookup purposes, and must be unique across
the set of mirrors.
     |
    <mirror>
```

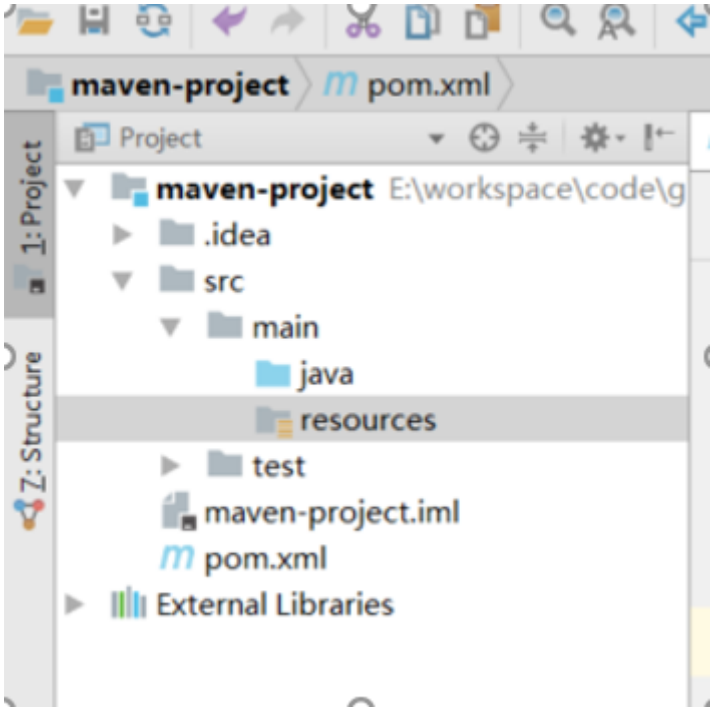
```
      <id>mirrorId</id>
      <mirrorOf>repositoryId</mirrorOf>
      <name>Human Readable Name for this Mirror.</name>
      <url>http://my.repository.com/repo/path</url>
    </mirror>
     -->

    <mirror>
        <id>alimaven</id>
        <name>aliyun maven</name>
        <url>http://maven.aliyun.com/nexus/content/groups/public/</url>
        <mirrorOf>central</mirrorOf>
    </mirror>

    <mirror>
        <id>alimaven</id>
        <mirrorOf>central</mirrorOf>
        <name>aliyun maven</name>

 <url>http://maven.aliyun.com/nexus/content/repositories/central/</url>
    </mirror>

  </mirrors>

  <!-- 用于配置环境的切换 -->
  <!-- profiles
   | This is a list of profiles which can be activated in a variety of ways,
and which can modify
   | the build process. Profiles provided in the settings.xml are intended
to provide local machine-
   | specific paths and repository locations which allow the build to work
in the local environment.
   |
   | For example, if you have an integration testing plugin - like cactus -
that needs to know where
   | your Tomcat instance is installed, you can provide a variable here such
that the variable is
   | dereferenced during the build process to configure the cactus plugin.
   |
   | As noted above, profiles can be activated in a variety of ways. One way
- the activeProfiles
   | section of this document (settings.xml) - will be discussed later.
Another way essentially
   | relies on the detection of a system property, either matching a
particular value for the property,
   | or merely testing its existence. Profiles can also be activated by JDK
version prefix, where a
   | value of '1.4' might activate a profile when the build is executed on a
JDK version of '1.4.2_07'.
   | Finally, the list of active profiles can be specified directly from the
command line.
   |
   | NOTE: For profiles defined in the settings.xml, you are restricted to
specifying only artifact
   |       repositories, plugin repositories, and free-form properties to be
used as configuration
   |       variables for plugins in the POM.
   |
```

```
   |-->
  <profiles>
    <!-- profile
     | Specifies a set of introductions to the build process, to be
activated using one or more of the
     | mechanisms described above. For inheritance purposes, and to activate
profiles via <activatedProfiles/>
     | or the command line, profiles have to have an ID that is unique.
     |
     | An encouraged best practice for profile identification is to use a
consistent naming convention
     | for profiles, such as 'env-dev', 'env-test', 'env-production', 'user-
jdcasey', 'user-brett', etc.
     | This will make it more intuitive to understand what the set of
introduced profiles is attempting
     | to accomplish, particularly when you only have a list of profile id's
for debug.
     |
     | This profile example uses the JDK version to trigger activation, and
provides a JDK-specific repo.
    <profile>
      <id>jdk-1.4</id>

      <activation>
        <jdk>1.4</jdk>
      </activation>

      <repositories>
        <repository>
          <id>jdk14</id>
          <name>Repository for JDK 1.4 builds</name>
          <url>http://www.myhost.com/maven/jdk14</url>
          <layout>default</layout>
          <snapshotPolicy>always</snapshotPolicy>
        </repository>
      </repositories>
    </profile>
    -->

    <!--
     | Here is another profile, activated by the system property 'target-
env' with a value of 'dev',
     | which provides a specific path to the Tomcat instance. To use this,
your plugin configuration
     | might hypothetically look like:
     |
     | ...
     | <plugin>
     |   <groupId>org.myco.myplugins</groupId>
     |   <artifactId>myplugin</artifactId>
     |
     |   <configuration>
     |     <tomcatLocation>${tomcatPath}</tomcatLocation>
     |   </configuration>
     | </plugin>
     | ...
     |
```

```
     | NOTE: If you just wanted to inject this configuration whenever
someone set 'target-env' to
     |       anything, you could just leave off the <value/> inside the
activation-property.
     |
    <profile>
      <id>env-dev</id>

      <activation>
        <property>
          <name>target-env</name>
          <value>dev</value>
        </property>
      </activation>

      <properties>
        <tomcatPath>/path/to/tomcat/instance</tomcatPath>
      </properties>
    </profile>
    -->
  </profiles>

  <!-- activeProfiles
   | List of profiles that are active for all builds.
   |
  <activeProfiles>
    <activeProfile>alwaysActiveProfile</activeProfile>
    <activeProfile>anotherAlwaysActiveProfile</activeProfile>
  </activeProfiles>
  -->
</settings>
```

4. 新建一个Maven项目

4.1项目结构



4.2 pom.xml

1. groupId ： com.gupaoedu
2. artfactId ： 功能命名
3. version ： 版本号
4. packaging： 打包方式，默认是jar
5. **dependencyManagement：**

    a. 只能出现在父pom (约定，不是必须的)

    b. 统一版本号

    c. **声明 (子POM里用到再引)，在父pom文件中使用dependencyManagement 管理的依赖，其子项目不会直接拥有这个依赖；如果想在子项目中使用该依赖，需要在子pom中重新引用**

6. dependency：

    a. Type 默认jar

    b. scope：

    1) compile ： 默认的，编译时使用，会将管理的此包打到项目的包中，例如spring的spring-core

    2) test ： 测试时使用该包

    3) provided：编译时使用，但是打包项目时，不会讲此包导入到项目包，例如tomcat的servlet

    4) runtime： 运行时使用，编译无效，例如JDBC驱动实现

    5) system ： 本地一些jar包（或自己私服的jar包），不需要放入到中央仓库中管理，例如短信jar

    6) scope是有 **依赖传递** 性的：

- ◦ 第一列表示直接依赖的scope，第一行表示间接依赖的scope

	compile	test	provided	runtime
compile	compile	-	-	runtime
test	test	-	-	test
provided	provided	-	provided	provided
runtime	runtime	-	-	runtime

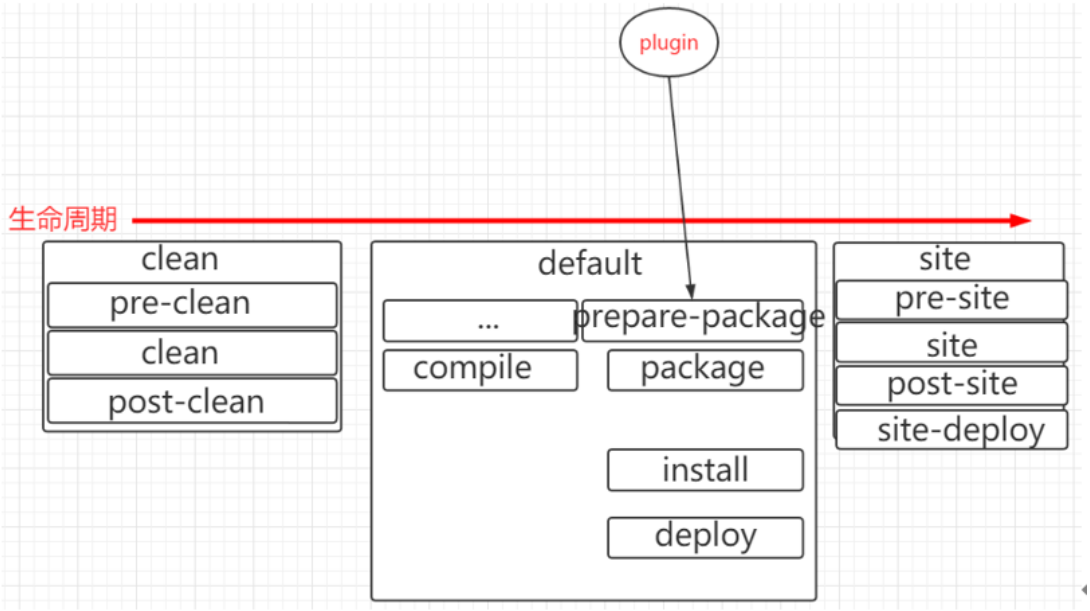
7) 依赖仲裁

i. 最短路径原则：

ii. 加载先后原则：在路径上是一样时，根据pom文件中书写顺序进行加载先后排序

8) exclusions：排除包

7. 生命周期 lifecycle/phase/goal



- A Build Lifecycle is Made Up of Phases
- A Build Phase is Made Up of Plugin Goals

Clean Lifecyle
pre-clean
clean
post-clean

Default Lifecyle	
validate	test-compile
initialize	process-test-classes
generate-sources	test
process-sources	prepare-package
generate-resources	**package**
process-resources	pre-integration-test
compile	integration-test
process-classes	post-integration-test
generate-test-sources	verify
process-test-sources	**install**
generate-test-resources	**deploy**
processs-test-resources	

Site Lifecyle
pre-site
site
post-site
site-deploy

- 一个生命周期可以有很多phase(阶段)，每个阶段又有许多的插件的运行
- 流程化、责任链可以参考maven，将生命周期抽象出来

5. 版本管理

1. 1.0-SNAPSHOT （maven默认的版本号，不稳定的版本）

- repository 删除
- **mvn clean package -U** (不管本地仓库是否有这个jar包，都会强制拉取一次)
- SNAPSHOP版本的jar包上传私服可以重复上传，RELEASE版本不可以

2. 主版本号.次版本号.增量版本号-<里程碑版本>

- 1.0.0-RELAESE

6. 常用命令

1. compile： 编译
2. clean ： 删除 target/
3. test ： test case，包括 junit 和 testNG
4. package：打包
5. install ： 把项目 install 到 local repo
6. deploy ： 把本地 jar 发布到 remote（私服）

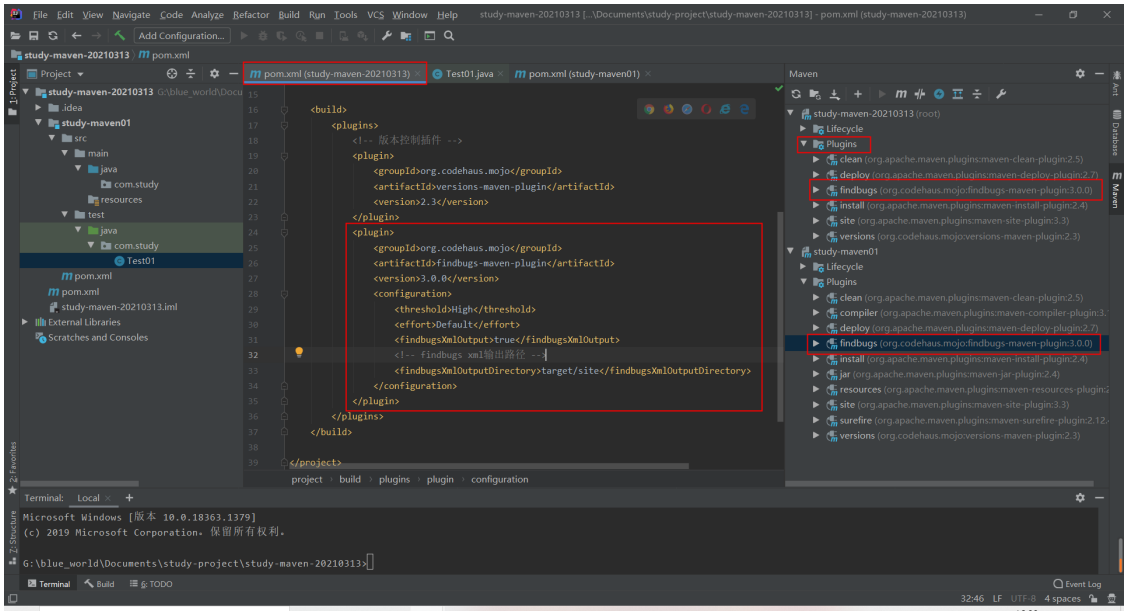
7. 插件

1. 常用插件下载地址

- maven：https://maven.apache.org/plugins/
- majohaus：http://www.mojohaus.org/plugins.html

2. 常用的插件：

- findbugs：静态代码检查



```
<plugin>
    <groupId>org.codehaus.mojo</groupId>
    <artifactId>findbugs-maven-plugin</artifactId>
    <version>3.0.0</version>
    <configuration>
        <threshold>High</threshold>
        <effort>Default</effort>
        <findbugsXmlOutput>true</findbugsXmlOutput>
        <!-- findbugs xml输出路径 -->
        <findbugsXmlOutputDirectory>target/site</findbugsXmlOutputDirectory>
    </configuration>
</plugin>
```

- versions：统一升级版本号

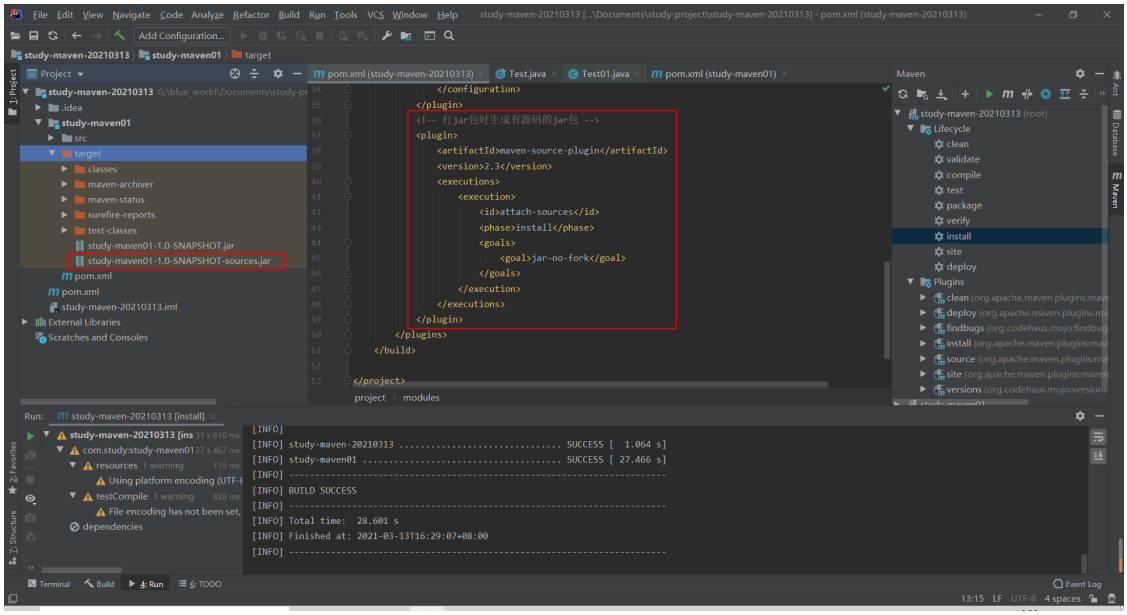
  命令：`mvn versions:set -DnewVersion=1.1`

```
<plugin>
    <groupId>org.codehaus.mojo</groupId>
    <artifactId>versions-maven-plugin</artifactId>
    <version>2.3</version>
</plugin>
```

- source 打包源代码

  命令：`source 打包源代码`

```
<!-- 打jar包时生成有源码的jar包 -->
<plugin>
    <artifactId>maven-source-plugin</artifactId>
    <version>2.3</version>
    <executions>
        <execution>
        <id>attach-sources</id>
        <phase>install</phase>
        <goals>
            <goal>jar-no-fork</goal>
        </goals>
        </execution>
    </executions>
</plugin>
```



- assembly 打包zip、war
- tomcat7

8. 自定义插件

- https://maven.apache.org/guides/plugin/guide-java-plugin-development.html

1. pom中配置：`<packaging>maven-plugin</packaging>`

```
<?xml version="1.0" encoding="UTF-8"?>
<project xmlns="http://maven.apache.org/POM/4.0.0"
         xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
         xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
http://maven.apache.org/xsd/maven-4.0.0.xsd">
    <modelVersion>4.0.0</modelVersion>

    <groupId>com.study</groupId>
    <artifactId>study-maven-plugin</artifactId>
    <version>1.0-SNAPSHOT</version>
    <packaging>maven-plugin</packaging>

    <dependencies>
        <dependency>
            <groupId>org.apache.maven</groupId>
            <artifactId>maven-plugin-api</artifactId>
            <version>3.5.0</version>
        </dependency>
        <dependency>
            <groupId>org.apache.maven.plugin-tools</groupId>
            <artifactId>maven-plugin-annotations</artifactId>
            <version>3.5</version>
            <scope>provided</scope>
        </dependency>
    </dependencies>

</project>
```

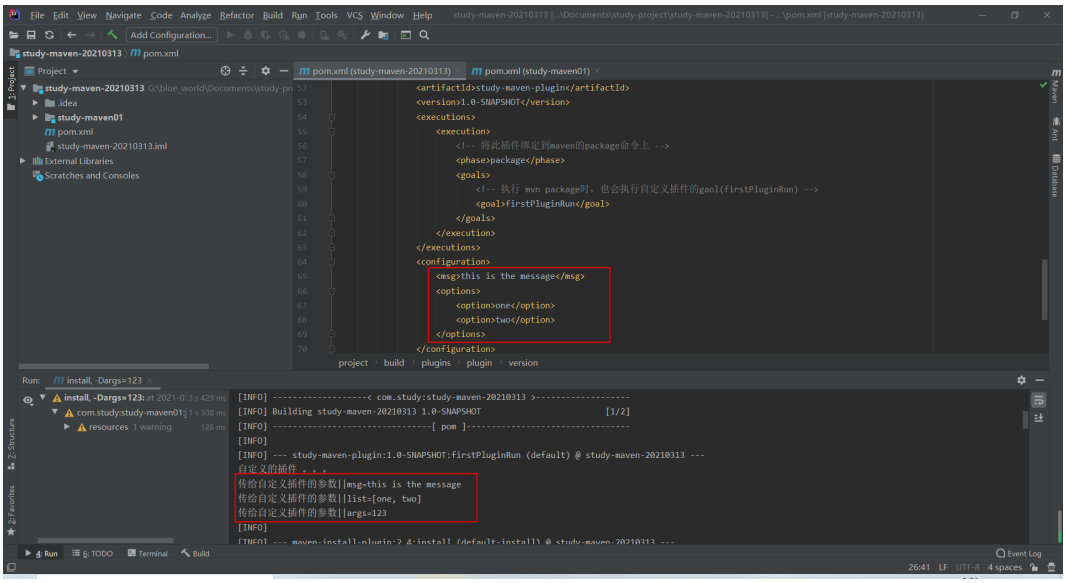
2. 自定义的插件类需要 **extends AbstractMojo**

```
package com.study;

import org.apache.maven.plugin.AbstractMojo;
import org.apache.maven.plugin.MojoExecutionException;
import org.apache.maven.plugin.MojoFailureException;
import org.apache.maven.plugins.annotations.LifecyclePhase;
import org.apache.maven.plugins.annotations.Mojo;
import org.apache.maven.plugins.annotations.Parameter;

import java.util.List;

/**
 * 自定义插件需要继承 AbstractMojo 类
 * 使用 name的值 来运行这个插件
 */
@Mojo(name = "firstPluginRun", defaultPhase = LifecyclePhase.PACKAGE)
public class GroupMojo extends AbstractMojo {

    @Parameter
    private String msg;

    @Parameter
    private List<String> options;

    @Parameter(property = "args")
    private String args;

    public void execute() throws MojoExecutionException,
MojoFailureException {
        System.out.println("自定义的插件 。。。 ");
        System.out.println("传给自定义插件的参数||msg=" + msg);
        System.out.println("传给自定义插件的参数||list=" + options);
        System.out.println("传给自定义插件的参数||args=" + args);
    }

}
```

3. 使用插件的项目中进行配置`<plugin>`

```
<!-- 使用自定义的插件 -->
<plugin>
    <groupId>com.study</groupId>
    <artifactId>study-maven-plugin</artifactId>
    <version>1.0-SNAPSHOT</version>
    <executions>
        <execution>
            <!-- 将此插件绑定到maven的package命令上 -->
            <phase>package</phase>
            <goals>
                <!-- 执行 mvn package时，也会执行自定义插件的
gaol(firstPluginRun) -->
                <goal>firstPluginRun</goal>
            </goals>
        </execution>
```

```
    </executions>
    <configuration>
        <msg>this is the message</msg>
        <options>
            <option>one</option>
            <option>two</option>
        </options>
    </configuration>
</plugin>
```

4. 执行 mvn package 查看控制台中自定义插件是否执行
5. 参数传递
    - 执行maven命令：`mvn package -Dargs=123`
    - 

9. Profile

1. 使用场景 dev/test/pro
2. setting.xml 家和公司两套

settings.xml

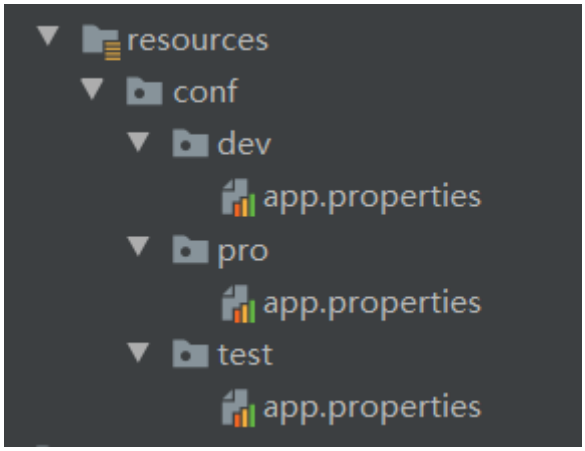
```
265       </properties>
266     </profile>
267     -->
268
269     <!-- 公司私服仓库地址配置-->
270     <profile>
271       <id>companyEnvironment</id>
272       <repositories>
273         <repository>
274             <id>repo-mirro</id>
275             <url>http://uk.maven.org/maven/</ur/>
276         </repository>
277       </repositories>
278       <pluginRepositories>
279         <pluginRepositorie>
280             <id>plugin-repo-mirror</id>
281             <url>http://uk.maven.org.maven</url>
282         </pluginRepositorie>
283       </pluginRepositories>
284     </profile>
285     <!-- 家庭办公时仓库地址配置-->
286     <profile>
287       <id>homeEnvironment</id>
288       <repositories>
289         <repository>
290             <id>repo-mirro</id>
291             <url>http://x'x'x/maven/</ur/>
292         </repository>
293       </repositories>
294       <pluginRepositories>
295         <pluginRepositorie>
296             <id>plugin-repo-mirror</id>
297             <url>http://xxx.maven</url>
298         </pluginRepositorie>
299       </pluginRepositories>
300     </profile>
301
302   </profiles>
303
304   <activeProfiles>
305     <activeProfile>homeEnvironment</activeProfile>
306   </activeProfiles>
307
308   <!-- activeProfiles
```

3. 使用方法：
   - 配置Pom文件

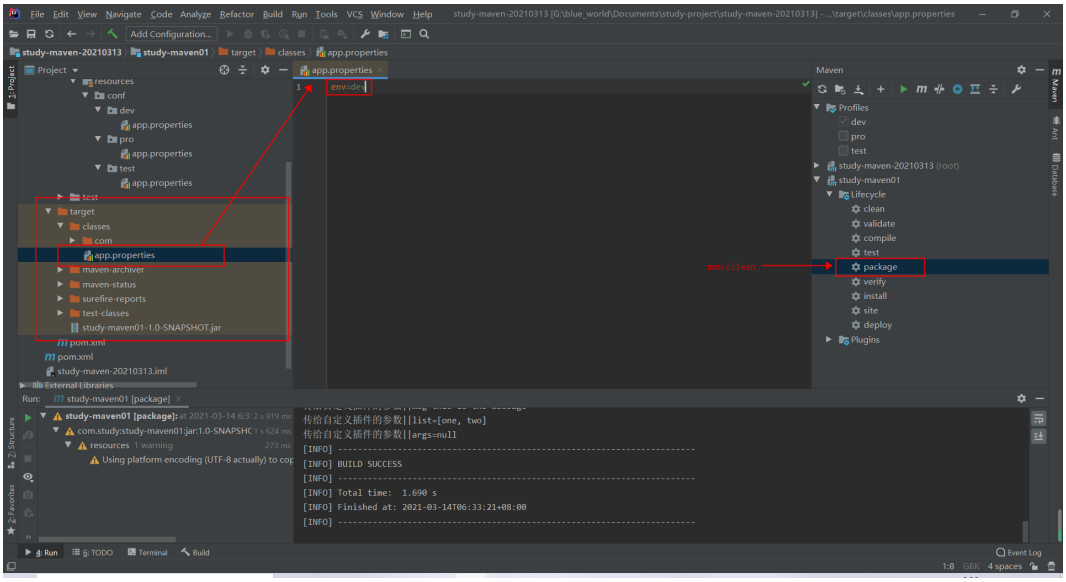
```
<?xml version="1.0" encoding="UTF-8"?>
<project xmlns="http://maven.apache.org/POM/4.0.0"
         xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
         xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
http://maven.apache.org/xsd/maven-4.0.0.xsd">
    <parent>
        <artifactId>study-maven-20210313</artifactId>
        <groupId>com.study</groupId>
        <version>1.0-SNAPSHOT</version>
    </parent>
    <modelVersion>4.0.0</modelVersion>
    <packaging>jar</packaging>

    <artifactId>study-maven01</artifactId>

    <!-- 设置profile属性 -->
```

```
    <profiles>
        <!-- 开发环境配置文件所在位置 -->
        <profile>
            <id>dev</id>
            <properties>
                <profiles.active>dev</profiles.active>
            </properties>
            <activation>
                <!-- 默认激活环境为dev -->
                <activeByDefault>true</activeByDefault>
            </activation>
        </profile>
        <!-- 测试环境配置文件所在位置 -->
        <profile>
            <id>test</id>
            <properties>
                <profiles.active>test</profiles.active>
            </properties>
        </profile>
        <!-- 生产环境配置文件所在位置 -->
        <profile>
            <id>pro</id>
            <properties>
                <profiles.active>pro</profiles.active>
            </properties>
        </profile>
    </profiles>

    <!-- 在build中使用profile属性-->
    <build>
        <resources>
            <resource>
                 <!--${basedir}就是工程的主目录-->
                <directory>${basedir}/src/main/resources</directory>
                <excludes>
                    <!-- 将主目录下所有conf文件夹下的文件都去除掉-->
                    <exclude>conf/**</exclude>
                </excludes>
            </resource>
            <resource>
                <!-- 保留下面路径的文件 -->
                <directory>src/main/resources/conf/${profiles.active}
</directory>
            </resource>
        </resources>
    </build>

</project>
```

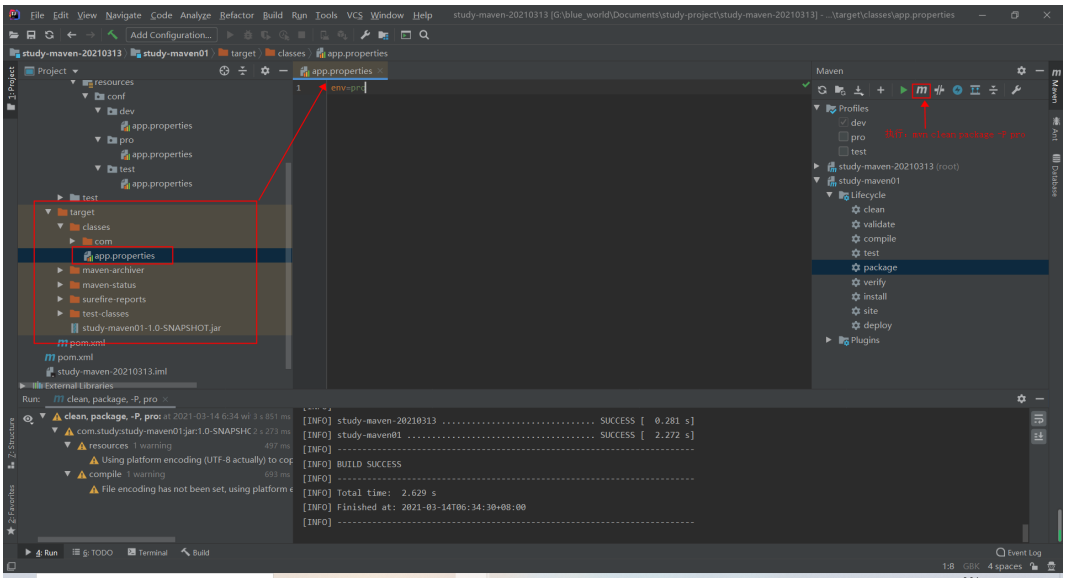
- 设置配置文件文件



- 执行命令：
  - **mvn clean package**



  - **mvn clean package -P pro**



10. 仓库（配置私服）

1. 下载 https://www.sonatype.com/nexus-repository-oss
2. 安装 解压
3. 使用

- 本地启动nexus（或者服务器上启动nexus）

    - cmd中执行：`nexus.exe /run` 指令
    - 第一次需要，安装服务：
        - 以管理员权限进入cmd，执行 `nexus.exe /install`
        - 接着启动服务 `net start nexus`
        - 然后停止服务 `net stop nexus`
    - 以后启动服务，只要执行 `nexus.exe /run` 指令 即可
- 登录 http://192.168.1.6:8081/nexus 查看 nexus服务

4. 发布

- 在pom.xml中配置，上传资源到nexus

```
<distributionManagement>
    <repository>
        <id>nexus-release</id>
        <name>Nexus Release Repository</name>
        <!-- 登录nexus,从上面获取url地址 -->
        <url>http://localhost:8081/repository/maven-releases/</url>
    </repository>
    <snapshotRepository>
        <id>nexus-snapshots</id>
        <name>Nexus Snapshot Repository</name>
        <url>http://localhost:8081/repository/maven-snapshots/</url>
    </snapshotRepository>
</distributionManagement>
```

- 在maven的settings.xml配置文件中配置上传权限

```
<servers>
    <server>
        <id>nexus-release</id>
        <username>admin</username>
        <password>sw19941021</password>
    </server>
    <server>
        <id>nexus-snapshots</id>
        <username>admin</username>
        <password>sw19941021</password>
    </server>
</servers>
```

5. 从私服上拉取 jar

- 配置 mirror

```
 <mirror>
     <id>nexus</id>
     <mirrorOf>*</mirrorOf>
     <url>http://localhost:8081/repository/maven-public/</url>
 </mirror>
```

- 配置 Profile

```
<profile>
```

```
    <id>nexus</id>
    <repositories>
        <repository>
            <id>central</id>
            <url>https://repo1.maven.org/maven2</url>
            <releases><enabled>true</enabled></releases>
            <snapshots><enabled>true</enabled></snapshots>
        </repository>
    </repositories>
    <pluginRepositories>
        <pluginRepository>
            <id>central</id>
            <url>https://repo1.maven.org/maven2</url>
            <releases>
                <enabled>true</enabled>
            </releases>
            <snapshots>
                <enabled>true</enabled>
            </snapshots>
        </pluginRepository>
    </pluginRepositories>
</profile>
```

- setting.xml 中生效 profile 配置

```
<activeProfiles>
    <activeProfile>nexus</activeProfile>
</activeProfiles>
```

11. archetype 模版化

1. 生成一个archetype

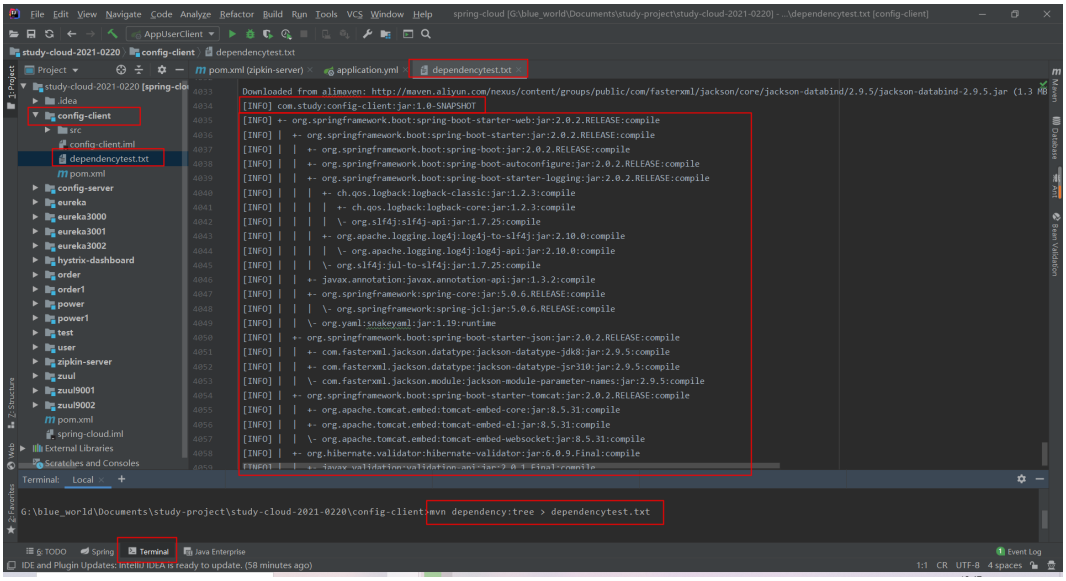
- mvn archetype:create-from-project
- cd /target/generated-sources/archetype
- mvn install

2. 从archetype创建项目

- mvn archetype:generate -DarchetypeCatalog=local

知识点：

1. maven 查看项目依赖关系命令：
    - `mvn dependency:tree > 文件名.txt`



2. 查看系统变量：
    - `mvn help:system`

课后作业：

1. 实战插件：
    - 给自己的 js\css 文件做处理防止缓存
    - 统计项目里面有多少个 java 文件
2. 实战archtype
3. 配置自己的私服