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Politecnico di Milano

A.A. 2015-2016

Software Engineering 2: “MyTaxi”

Code inspection

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# 1. Assigned classes

All the code that was assigned to us belongs to the same class, that is the class **ExtensionValidator**, located in:

**appserver/web/web-core/src/main/java/org/apache/catalina/util/ExtensionValidator.java**

The code lines we had to check are the following ones:

* **Section 1** (lines **169 to 190**): *if* statement;
* **Section 2** (lines **215 to 292**): *validateApplication* method;
* **Section 3** (lines **317 to 385**): *validateManifestResources* method.

# 2. Functional role

The class has to check the resources extentions, to ensures that all the needed resources are available.



The class uses two lists, that contains the manifest resources, from which we can extract the extensions of the needed resources, and the available extentions. These lists are declared as attribiutes in the following code:



*Section 1* is part of the static initializer. It contains an *if* statement that get the files of the extension directory. For every directory listed in system properties it checks if it actually is a directory and add the manifest resources of the contained jar files in *containerManifestResources* using *addSystemResource* private static method.

*Section 2* is the *ValidateAppication* method. It validates at runtime the application and it returns true if all the required extensions are satisfied.

*Section 3* is the *ValidateManifestResources* method. It checks if for all manifest resource, it exists an available resource that has a compatible extension.

# 3. Found issues (from checklist)

## 3.1 Section 0

**3.1.1 Description**

Attributes and imports.

**3.1.2 Lines**

From 59 to 128.

**3.1.3 Location**

appserver/web/web-core/src/main/java/org/apache/catalina/util/ExtensionValidator.java

**3.1.4 Issues**

#### 3.1.4.1

* **Lines:** 103 to 104
* **Rule (Kind of rule):** 7 (Naming conventions)
* **Description:** Static and final attributes should be all capitals
* **Code:**

****

## 3.2 Section 1

**3.2.1 Description**

if(extensionsDir != null) {---}

**3.2.2 Lines**

From 169 to 190.

**3.2.3 Location**

appserver/web/web-core/src/main/java/org/apache/catalina/util/ExtensionValidator.java

**3.2.4 Issues**

#### 3.2.4.1

* **Lines:** 103 to 104
* **Rule (Kind of rule):** 7 (Naming conventions)
* **Description:** Static and final attributes should be all capitals
* **Code:**

****

#### 3.2.4.2

* **Lines:** 170 to 171
* **Rule (Kind of rule):** 15 (Line Break)
* **Description:** Static and final attributes should be all capitals
* **Code:**

## 3.3 Section 2

**3.3.1 Description**

ValidateApplication(DirContext dirContext, StandardContext context) method.

This method start when there will be a runtime validation of a Web Application.

This method uses JNDI to look up the resources located under a **DirContext**. It locates Web Application MANIFEST.MF file in the */META-INF/* directory of the application and all MANIFEST.MF files in each JAR file located in the *WEB-INF/lib* directory and creates an **ArrayList** of **ManifestResorce** objects. These objects are passed then to the **validateManifestResources** method for validation.

**3.3.2 Lines**

From 215 to 292.

**3.3.3 Location**

appserver/web/web-core/src/main/java/org/apache/catalina/util/ExtensionValidator.java

**3.3.4 Issues**

#### 3.3.4.1

* **Lines:** 217
* **Rule (Kind of rule):** 1 (Name)
* **Description:** Incorrect name
* **Code:**

#### 3.3.4.2

* **Lines:** 230
* **Rule (Kind of rule):** 1 (Name)
* **Description:** Incorrect name
* **Code:**

#### 3.3.4.3

* **Lines:** 242
* **Rule (Kind of rule):** 1 (Name)
* **Description:** Incorrect name (mre -> manifestResource)
* **Code:**

#### 3.3.4.4

* **Lines:** 262
* **Rule (Kind of rule):** 1 (Name)
* **Description:** Incorrect name (ne-> namingEnumeration)
* **Code:**

#### 3.3.4.5

* **Lines:** 277
* **Rule (Kind of rule):** 1 (Name)
* **Description:** Incorrect name
* **Code:**

#### 3.3.4.6

* **Lines:** 226
* **Rule (Kind of rule):** 11 (Braces)
* **Description:** If without braces
* **Code:**

****

#### 3.3.4.7

* **Lines:** 215 – 242 - 279
* **Rule (Kind of rule):** 15 (Line Break)
* **Description:** Incorrect Line Breack
* **Code:**

#### 3.3.4.8

* **Lines:** 240
* **Rule (Kind of rule):** 18 (Comments)
* **Description:** Useless Comment (//Can we do like this?)
* **Code:**

#### 3.3.4.9

* **Lines:** 250
* **Rule (Kind of rule):** 52 (Exception)
* **Description:** Missing Exception (IndexOutOfBoundsException and IOException)
* **Code:** FileReader.readLine throwing an IOException

#### 3.3.4.9

* **Lines:** 290
* **Rule (Kind of rule):** 52 (Exception)
* **Description:** Missing Exception (IndexOutOfBoundsException and IOException)
* **Code:** FileReader.readLine throwing an IOException

**Other:**

Line 240 String resourceName = "Web Application Manifest" dovrebbe esserci un binding.getName()

## 3.3 Section 3

**3.3.1 Description**

ValidateManifestResources(String appName, ArrayList<ManifestResource> resources) method.

**3.3.2 Lines**

From 317 to 385.

**3.3.3 Location**

appserver/web/web-core/src/main/java/org/apache/catalina/util/ExtensionValidator.java

**3.3.4 Issues**

#### 3.3.4.1

* **Lines:** 349 to 350
* **Rule (Kind of rule):** 15 (Wrapping lines)
* **Description:** The break is before an operator (&&) instead of being after it.
* **Code:**



#### 3.3.4.2

* **Lines:** 351 to 352
* **Rule (Kind of rule):** 15 (Wrapping lines)
* **Description:** The break is after a casting instead of being between the operator (=) and the casting.
* **Code:**



#### 3.3.4.3

* **Lines:** 357 to 358
* **Rule (Kind of rule):** 15 (Wrapping lines)
* **Description:** The break is before an operator (&&) instead of being after it.
* **Code:**



# 4. Other problems