



# **WEEK6 - Feedbacks**

Mathias COUSTÉ  
18.03.2020

**All teams compete !**

# No

teams had runtime errors... (*GenericClientError*)

## 1 Time-out

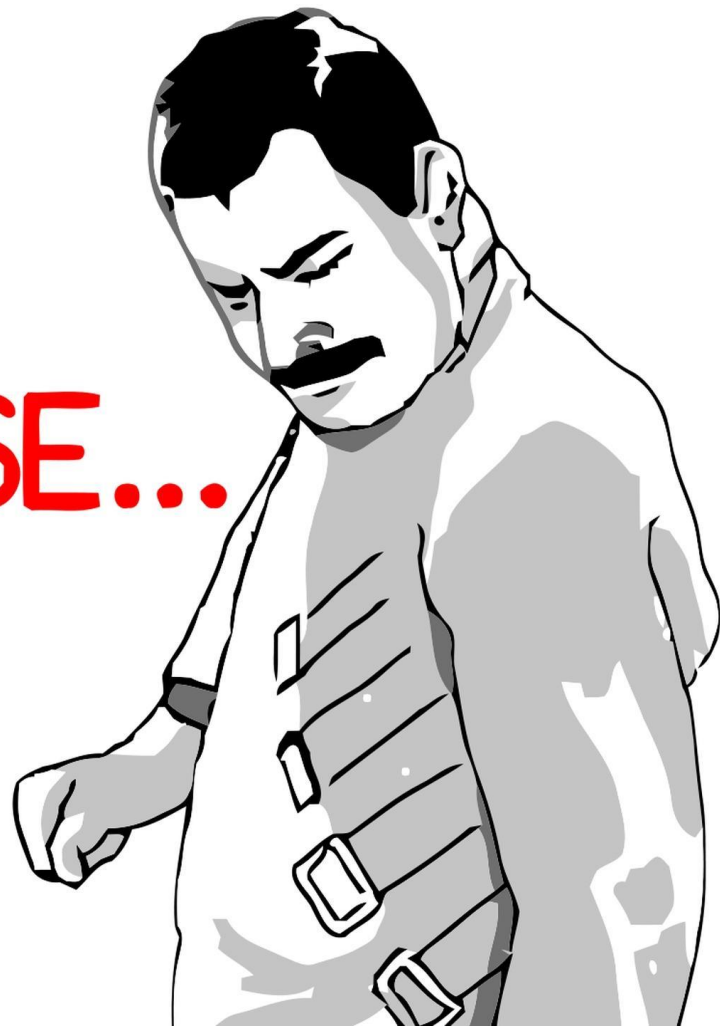
## 2 Ships destroyed :/

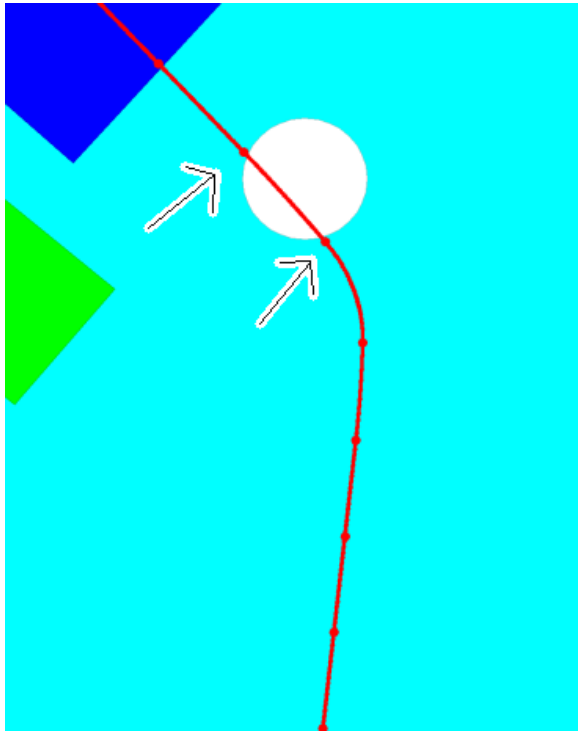
**14** *(out of 18)*

**team finished the race**

**\o/**

SO  
CLOSE...





SO  
CLOSE...





*Smartware*

**Week's champions**



*#2 onmkgf*



*#1 Gottagofast*



*#3 DirectionMiage*

# Championship leaders



## NEXT WEEK

- Same complexity

Deliver with tag **WEEK7** the *25th of March at 10PM.*

## NEXT NEXT WEEK

- Polygone
- Reefs (in your path)



# QGL News

Mathias COUSTÉ  
12.03.2020

# Technical interviews



# **Technical interviews**

**From 25.03 to 01.04**





**Technical interviews**


**13 minutes presentation  
+ 5 minutes question**

**From 25.03 to 01.04**

# **Technical interviews**

**13 minutes presentation  
+ 5 minutes question**

**From 25.03 to 01.04**

- 
- 1. Explain your winning solutions: how to win the race?**
  - 2. Present and defend the architecture/division of your project.**
  - 3. Why the quality of your project is the best?**
  - 4. 1 Extra question per team member**



**Write your team  
report**





# 1



## Maven basics

# Pom.xml

```
1<project xmlns="http://maven.apache.org/POM/4.0.0"
2  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
3  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">
4  <modelVersion>4.0.0</modelVersion>
5
6  <groupId>fr.unice.polytech.si3.qgl</groupId>
7  <artifactId>frigates-engine</artifactId>
8  <version>1.0-SNAPSHOT</version>
9  <packaging>jar</packaging>
10
11
12
13<properties>
14  <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
15  <java.version>11</java.version>
16  <maven.compiler.source>${java.version}</maven.compiler.source>
17  <maven.compiler.target>${java.version}</maven.compiler.target>
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target/frigates-engine-1.0-SNAPSHOT.jar

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26      <version>0.1-SNAPSHOT</version>
27    </dependency>
```

# Dependencies

```
<dependencies>
  <!-- Geometry API -->
  <dependency>
    <groupId>fr.unice.polytech.si3.qgl</groupId>
    <artifactId>geometry-api</artifactId>
    <version>1.0-SNAPSHOT</version>
  </dependency>

  <!-- Unit tests -->
  <dependency>
    <groupId>junit</groupId>
    <artifactId>junit</artifactId>
    <version>4.12</version>
    <scope>test</scope>
  </dependency>
</dependencies>
```

# Dependencies

```
<dependencies>
  <!-- Geometry API -->
  <dependency>
    <groupId>fr.unice.polytech.si3.qgl</groupId>
    <artifactId>geometry-api</artifactId>
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  <dependency>
    <groupId>fr.unice.polytech.si3.qgl</groupId>
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    <version>4.12</version>
    <scope>test</scope>
  </dependency>
</dependencies>
```

● **compile**

● **runtime**

● **provided**

● **system**

● **test**

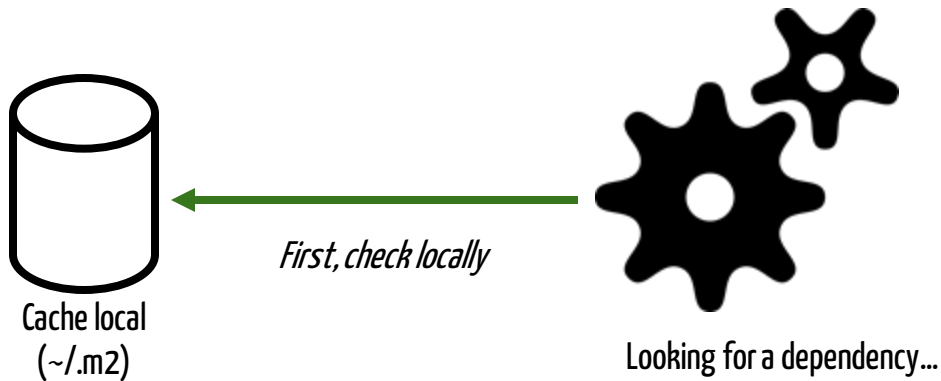
● **import**

# Dependencies

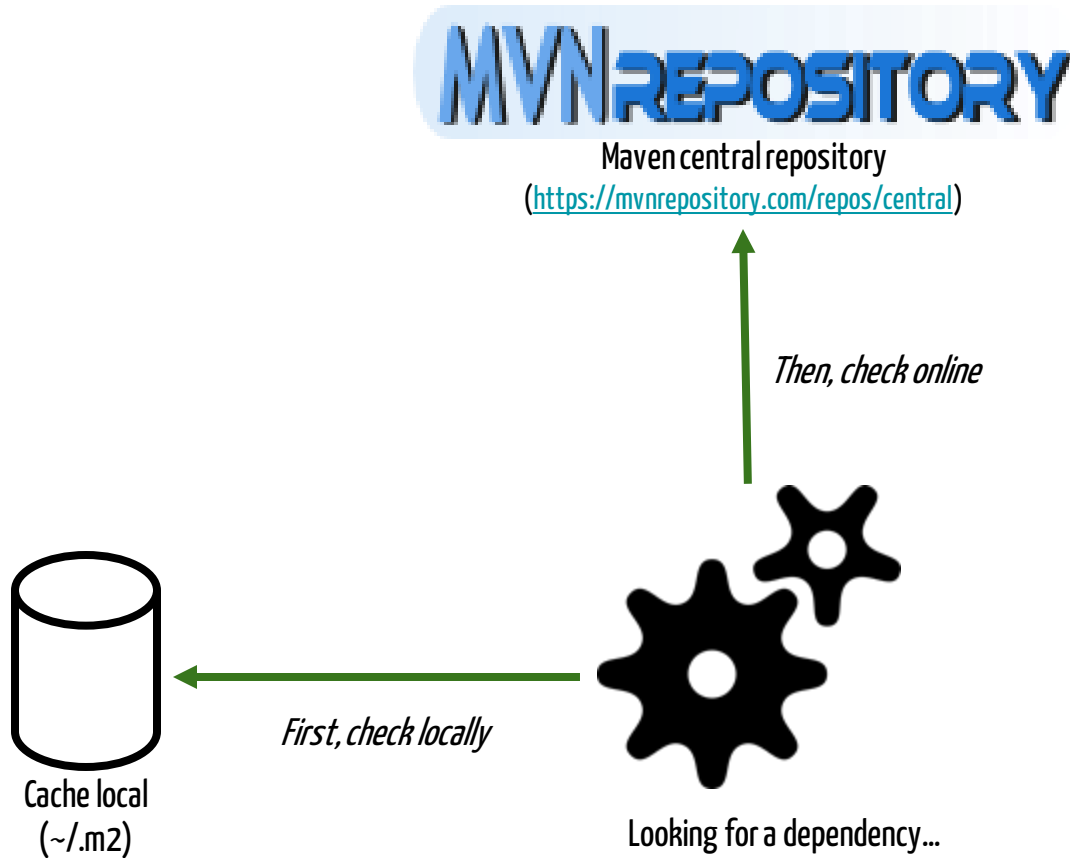


Looking for a dependency...

# Dependencies



# Dependencies





# Phases

- clean
- validate
- compile
- test
- package
- verify
- install
- deploy

# Phases

- clean

- validate

- compile

- test

- package

- verify

- install

- deploy

```
~ $ > mvn clean
```

# Phases

- clean
- validate
- compile
- test
- package
- verify
- install
- deploy

```
~ $ > mvn validate
```

# Phases

- clean

- validate

- compile

- test

- package

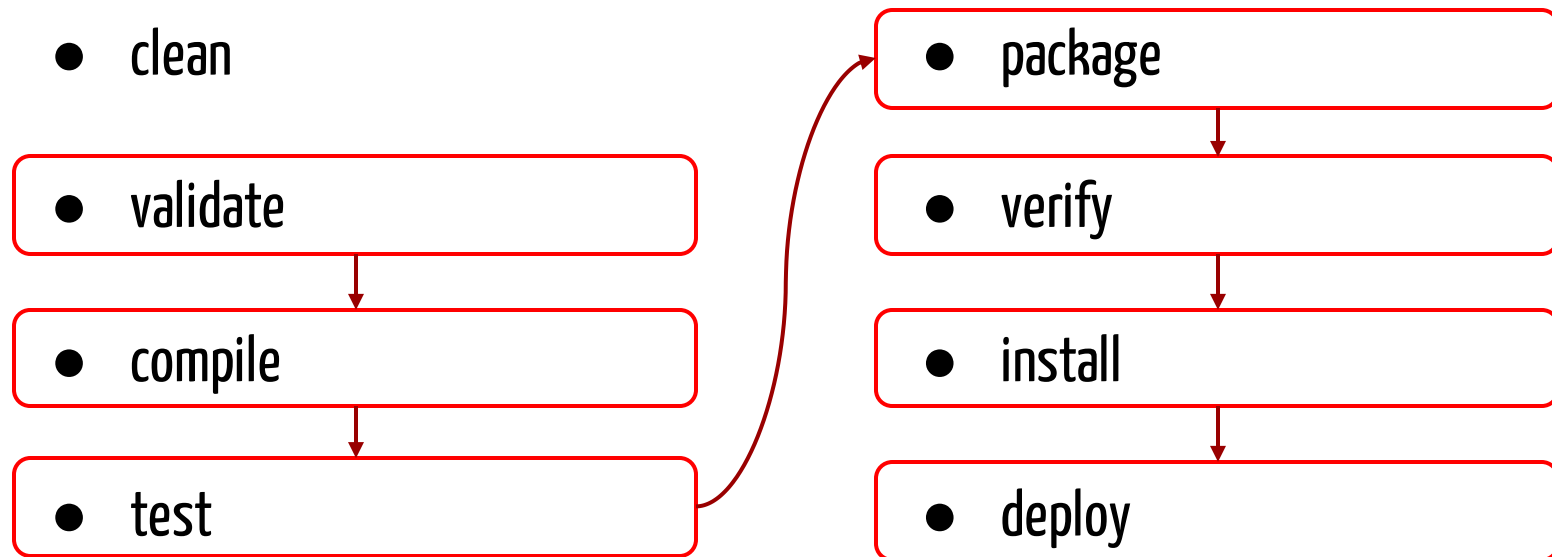
- verify

- install

- deploy

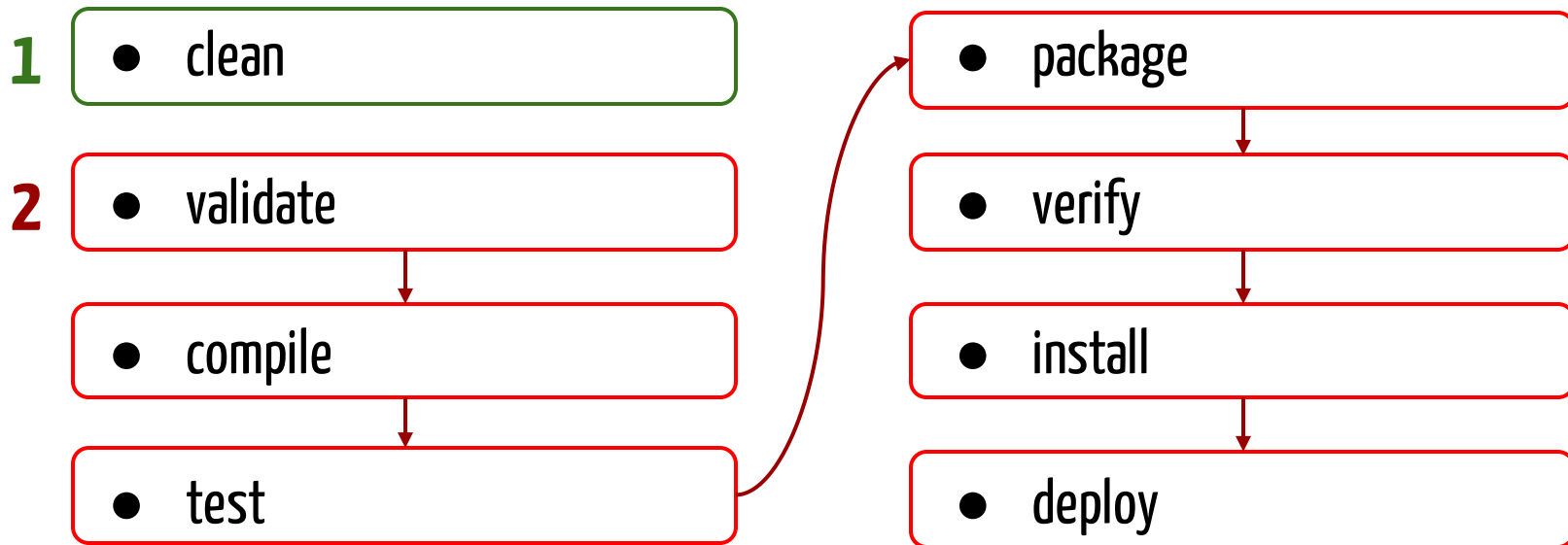
~ \$ > mvn package

# Phases



~ \$ > mvn deploy

# Phases



~ \$ > mvn clean deploy

# Plugins & executions

```
<build>
  <plugins>
    <plugin>
      <groupId>org.apache.maven.plugins</groupId>
      <artifactId>maven-assembly-plugin</artifactId>
      <executions>
        <execution>
          <phase>package</phase>
          <goals>
            <goal>single</goal>
          </goals>
          <configuration>
            <archive>
              <manifest>
                <mainClass>
                  fr.unice.polytech.si3.qgl.frigatesengine.App
                </mainClass>
              </manifest>
            </archive>
            <descriptorRefs>
              <descriptorRef>jar-with-dependencies</descriptorRef>
            </descriptorRefs>
          </configuration>
        </execution>
      </executions>
    </plugin>
    <plugin>
      <groupId>org.codehaus.mojo</groupId>
      <artifactId>exec-maven-plugin</artifactId>
      <version>1.2.1</version>
      <executions>
        <execution>
          <goals>
            <goal>java</goal>
          </goals>
        </execution>
      </executions>
      <configuration>
        <mainClass>fr.unice.polytech.si3.qgl.gamerunner.App</mainClass>
      </configuration>
    </plugin>
  </plugins>
</build>
```

# Plugins & executions

```
<build>
  <plugins>
    <plugin>
      <groupId>org.apache.maven.plugins</groupId>
      <artifactId>maven-assembly-plugin</artifactId>
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                </mainClass>
              </manifest>
            </archive>
            <descriptorRefs>
              <descriptorRef>jar-with-dependencies</descriptorRef>
            </descriptorRefs>
          </configuration>
        </execution>
      </executions>
    </plugin>
    <plugin>
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      <artifactId>exec-maven-plugin</artifactId>
      <version>1.2.1</version>
      <executions>
        <execution>
          <goals>
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        </execution>
      </executions>
      <configuration>
        <mainClass>fr.unice.polytech.si3.qgl.gamerunner.App</mainClass>
      </configuration>
    </plugin>
  </plugins>
</build>
```



# Plugins & executions

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            <descriptorRefs>
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          </configuration>
        </execution>
      </executions>
    </plugin>
    <plugin>
      <groupId>org.codehaus.mojo</groupId>
      <artifactId>exec-maven-plugin</artifactId>
      <version>1.1.1</version>
      <executions>
        <execution>
          <goals>
            <goal>java</goal>
          </goals>
        </execution>
      </executions>
      <configuration>
        <mainClass>fr.unice.polytech.si3.qgl.gamerunner.App</mainClass>
      </configuration>
    </plugin>
  </plugins>
</build>
```



mvn exec:java

# Plugins & executions

```
<plugin>
  <groupId>org.codehaus.mojo</groupId>
  <artifactId>exec-maven-plugin</artifactId>
  <version>1.2.1</version>
  <executions>
    <execution>
      <goals>
        <goal>java</goal>
      </goals>
      <configuration>
        <mainClass>fr.unice.polytech.si3.qgl.gamerunner.App</mainClass>
      </configuration>
    </execution>
    <execution>
      <goals>
        <goal>mytool</goal>
      </goals>
      <configuration>
        <mainClass>fr.unice.polytech.si3.qgl.gamerunner.MyTool</mainClass>
      </configuration>
    </execution>
  </executions>
</plugin>
```

Diagram illustrating the mapping of the `<goal>java</goal>` tag to the command `mvn exec:java`.

# Plugins & executions

```
<plugin>
  <groupId>org.codehaus.mojo</groupId>
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  <version>1.2.1</version>
  <executions>
    <execution>
      <goals>
        <goal>java</goal>
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      <configuration>
        <mainClass>fr.unice.polytech.si3.qgl.gamerunner.App</mainClass>
      </configuration>
    </execution>
    <execution>
      <goals>
        <goal>mytool</goal>
      </goals>
      <configuration>
        <mainClass>fr.unice.polytech.si3.qgl.gamerunner.MyTool</mainClass>
      </configuration>
    </execution>
  </executions>
</plugin>
```

A diagram illustrating the mapping from a Maven plugin configuration to a command. Two red boxes highlight the `<artifactId>exec-maven-plugin</artifactId>` and `<goal>mytool</goal>` elements in the XML. Arrows point from these boxes to the command `mvn exec:mytool`.

# 2



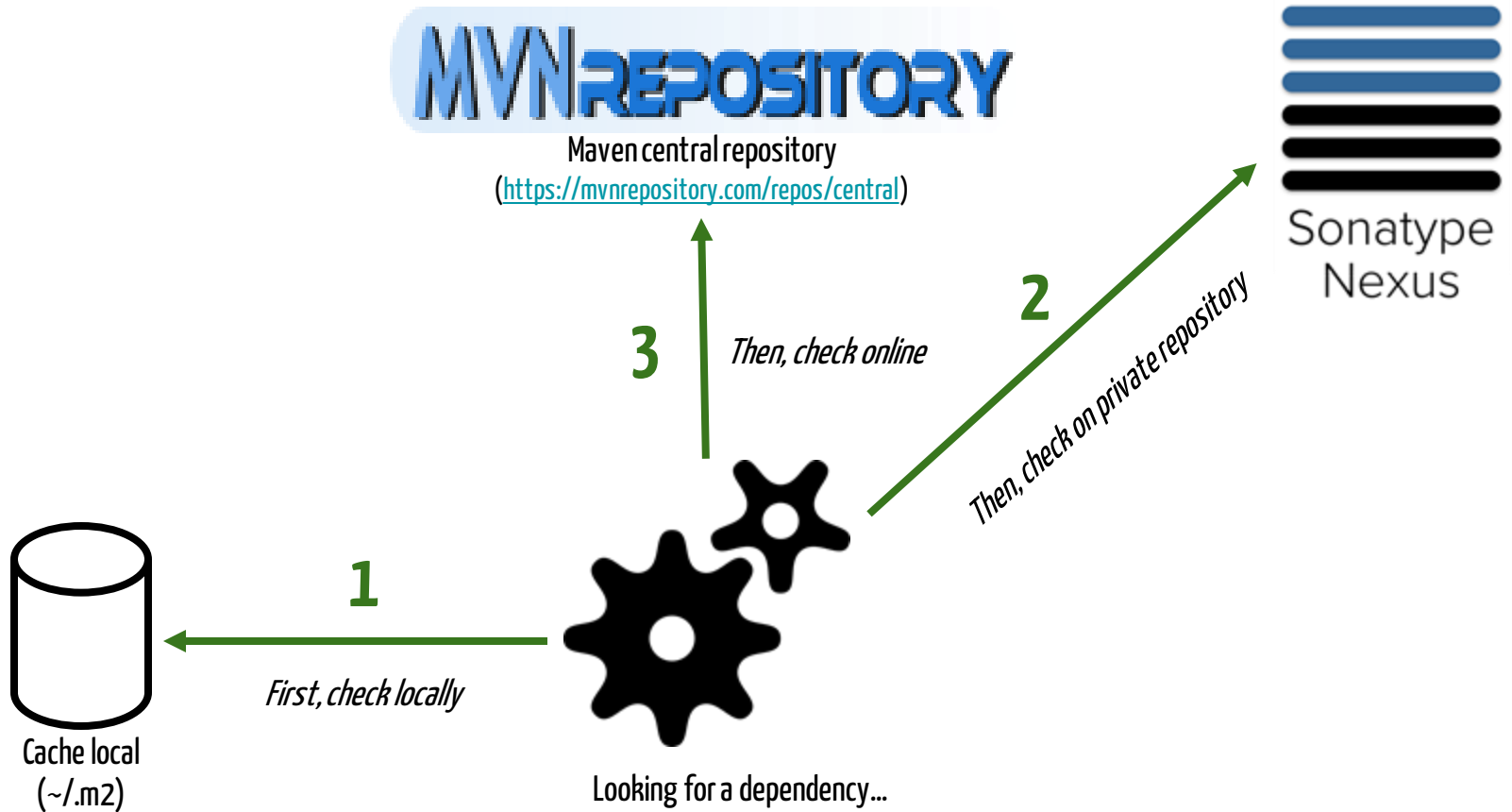
**Maven advanced**

# Add private repositories

In the pom.xml:

```
<repositories>
  <repository>
    <id>io-labs-snapshots</id>
    <url>https://nexus.io-labs.fr/repository/maven-snapshots/</url>
  </repository>
</repositories>
```

# Add private repositories



# Maven site

## frigates-core

Last Published: 2020-02-10 | Version: 1.0-SNAPSHOT

frigates-core

### Parent Project

[runners.aggregator](#)

### Project Documentation

#### ▼ Project Information

#### Dependencies

[Dependency Information](#)

[About](#)

[Plugin Management](#)

[Plugins](#)

[Summary](#)



## Project Dependencies

### compile

The following is a list of compile dependencies for this project. These dependencies are required to compile and run the application:

GroupId	ArtifactId	Version	Type	Licenses
com.fasterxml.jackson.core	<a href="#">jackson-databind</a>	2.10.1	jar	<a href="#">The Apache Software License, Version 2.0</a>
fr.unice.polytech.si3.qgl	<a href="#">geometry-api</a>	1.0-SNAPSHOT	jar	-

### test

The following is a list of test dependencies for this project. These dependencies are only required to compile and run unit tests for the application:

GroupId	ArtifactId	Version	Type	Licenses
junit	<a href="#">junit</a>	4.11	jar	<a href="#">Common Public License Version 1.0</a>

~ \$ > mvn site:site

# Javadoc

OVERVIEW PACKAGE CLASS USE TREE DEPRECATED INDEX HELP

SEARCH:  Search ✕

## frigates-core 1.0-SNAPSHOT API

### Packages

Package	Description
fr.unice.polytech.si3.qgl.core	
fr.unice.polytech.si3.qgl.core.domain.sea	
fr.unice.polytech.si3.qgl.core.domain.sea.entities	
fr.unice.polytech.si3.qgl.core.domain.shapes	
fr.unice.polytech.si3.qgl.core.domain.ship	
fr.unice.polytech.si3.qgl.core.domain.ship.entities	
fr.unice.polytech.si3.qgl.core.game	
fr.unice.polytech.si3.qgl.core.game.actions	
fr.unice.polytech.si3.qgl.core.interfaces	
fr.unice.polytech.si3.qgl.core.serialization	

```
~ $ > mvn Javadoc:Javadoc
```



# Javadoc

OVERVIEW PACKAGE **CLASS** USE TREE DEPRECATED INDEX HELP

SUMMARY: NESTED | FIELD | CONSTR | METHOD    DETAIL: FIELD | CONSTR | METHOD    SEARCH:

**Package** fr.unice.polytech.si3.qgl.core.domain.shapes

**Class Circle**

java.lang.Object  
fr.unice.polytech.si3.qgl.core.domain.shapes.Shape  
fr.unice.polytech.si3.qgl.core.domain.shapes.Circle

---

public class **Circle**  
extends Shape

---

**Field Summary**

**Fields**

Modifier and Type	Field	Description
protected double	radius	

**Fields inherited from class fr.unice.polytech.si3.qgl.core.domain.shapes.Shape**

type

---

**Constructor Summary**

**Constructors**

Constructor	Description
Circle()	

~ \$ > mvn JAVADOC:JAVADOC

# Pom parent

```
<?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>

  <parent>
    <artifactId>runners.aggregator</artifactId>
    <groupId>fr.unice.polytech.si3.qgl</groupId>
    <version>1.0</version>
  </parent>

  <artifactId>playertest</artifactId>
  <version>1.0-SNAPSHOT</version>

  <name>playertest</name>
```

# Pom parent

Pom parent allows you to inherit some definitions from another pom:

- Dependencies
- Distribution management
- Plugins
- Versions numbers
- Profiles
- Builds
- *not properties*

# Profiles

“A Build profile is a set of configuration values, which can be used to set or override default values of Maven build.

Using a build profile, you can customize build for different environments such as Production v/s Development environments.”

# Profiles declaration

```
<profiles>
  <profile>
    <id>develop</id>
    <activation>
      <activeByDefault>true</activeByDefault>
    </activation>
  </profile>
  <profile>
    <id>prod</id>
  </profile>
</profiles>
```

# Profiles activation

```
<profiles>
  <profile>
    <id>profileId</id>
    <activation>
      <activeByDefault>true</activeByDefault>

      <jdk>11</jdk>

      <property>
        <name>environment</name>
        <value>test</value>
      </property>
    </activation>
  </profile>
</profiles>
```

# Profiles activation

```
~ $ > mvn package -P myProfile,mySecondProfile
```

# Profiles usages

```
<profile>
  <id>develop</id>
  <activation>
    <activeByDefault>true</activeByDefault>
  </activation>
  <build>
    <plugins>
      <plugin>
        <groupId>org.codehaus.mojo</groupId>
        <artifactId>exec-maven-plugin</artifactId>
        <executions>
          <execution>
            <goals>
              <goal>exec</goal>
            </goals>
          </execution>
        </executions>
        <configuration>
          <arguments>
            <argument>--logs</argument>
            <argument>debug</argument>
          </arguments>
        </configuration>
      </plugin>
    </plugins>
  </build>
</profile>
```

```
<profile>
  <id>prod</id>
  <build>
    <plugins>
      <plugin>
        <groupId>org.codehaus.mojo</groupId>
        <artifactId>exec-maven-plugin</artifactId>
        <executions>
          <execution>
            <goals>
              <goal>exec</goal>
            </goals>
          </execution>
        </executions>
        <configuration>
          <arguments>
            <argument>--logs</argument>
            <argument>error</argument>
          </arguments>
        </configuration>
      </plugin>
    </plugins>
  </build>
</profile>
```



# Archetypes

How to generate a maven project from an existing template?

# Archetypes

```
~ $ > mvn archetype:generate
```

# Archetypes

Generate a simple jar project:

```
~ $ > mvn archetype:generate -DarchetypeGroupId=org.apache.maven.archetypes -DarchetypeArtifactId=maven-archetype-quickstart -DarchetypeVersion=1.4
```

Generate an executable jar project:

```
~ $ > mvn archetype:generate -DarchetypeGroupId=com.github.igor-petruk.archetypes -DarchetypeArtifactId=maven-archetype-executable -DarchetypeVersion=1.4
```

Generate a maven plugin project:

```
~ $ > mvn archetype:generate -DarchetypeGroupId=org.apache.maven.archetypes -DarchetypeArtifactId=maven-archetype-plugin -DarchetypeVersion=1.4
```

3



**Multi-modules projects**

# Why multiple-modules

**How to isolate my tools if I created more than just the required jar for QGL ?**

**How to run all by builds in one command ?**

**Can I isolate my geometry utils code from the rest of my project so I can reuse it later ?**

# How to define some modules?

```
1 <?xml version="1.0" encoding="UTF-8" standalone="no"?>
2 <project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema
3   <modelVersion>4.0.0</modelVersion>
4
5   <groupId>fr.unice.polytech.si3.qgl</groupId>
6   <artifactId>runners.aggregator</artifactId>
7   <version>1.0</version>
8   <packaging>pom</packaging>
9
10  <modules>
11    <module>geometry-api</module>
12    <module>frigates-core</module>
13    <module>frigates-dump-api</module>
14    <module>frigates-engine</module>
15    <module>player-test</module>
16    <module>weeklyrunner</module>
17    <module>frigates-dump-viewer</module>
18  </modules>
19 </project>
20
```

# How to define some modules?

```
1 <?xml version="1.0" encoding="UTF-8" standalone="no"?>
2 <project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema
3   <modelVersion>4.0.0</modelVersion>
4
5   <groupId>fr.unice.polytech.si3.qgl</groupId>
6   <artifactId>runners.aggregator</artifactId>
7   <version>1.0</version>
8   <packaging>pom</packaging>
9
10  <modules>
11    <module>geometry-api</module>
12    <module>frigates-core</module>
13    <module>frigates-dump-api</module>
14    <module>frigates-engine</module>
15    <module>player-test</module>
16    <module>weeklyrunner</module>
17    <module>frigates-dump-viewer</module>
18  </modules>
19 </project>
20
```

By convention, use “aggregator” in your name

# How to define some modules?

```
1 <?xml version="1.0" encoding="UTF-8" standalone="no"?>
2 <project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema
3   <modelVersion>4.0.0</modelVersion>
4
5   <groupId>fr.unice.polytech.si3.qgl</groupId>
6   <artifactId>runners.aggregator</artifactId>
7   <version>1.0</version>
8   <packaging>pom</packaging>
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12    <module>frigates-core</module>
13    <module>frigates-dump-api</module>
14    <module>frigates-engine</module>
15    <module>player-test</module>
16    <module>weeklyrunner</module>
17    <module>frigates-dump-viewer</module>
18  </modules>
19 </project>
20
```

Use pom as packaging



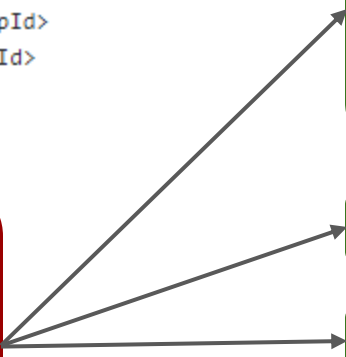
# How to define some modules?

```
1 <?xml version="1.0" encoding="UTF-8" standalone="no"?>
2 <project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema
3   <modelVersion>4.0.0</modelVersion>
4
5   <groupId>fr.unice.polytech.si3.qgl</groupId>
6   <artifactId>runners.aggregator</artifactId>
7   <version>1.0</version>
8   <packaging>pom</packaging>
9
10  <modules>
11    <module>geometry-api</module>
12    <module>frigates-core</module>
13    <module>frigates-dump-api</module>
14    <module>frigates-engine</module>
15    <module>player-test</module>
16    <module>weeklyrunner</module>
17    <module>frigates-dump-viewer</module>
18  </modules>
19 </project>
20
```

Declare your modules

# How to define some modules?

```
1 <?xml version="1.0" encoding="UTF-8" standalone="no"?>
2 <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">
3   <modelVersion>4.0.0</modelVersion>
4
5   <groupId>fr.unice.polytech.si3.qgl</groupId>
6   <artifactId>runners.aggregator</artifactId>
7   <version>1.0</version>
8   <packaging>pom</packaging>
9
10  <modules>
11    <module>geometry-api</module>
12    <module>frigates-core</module>
13    <module>frigates-dump-api</module>
14    <module>frigates-engine</module>
15    <module>player-test</module>
16    <module>weeklyrunner</module>
17    <module>frigates-dump-viewer</module>
18  </modules>
19 </project>
20
```



config	4 days ago
frigates-core	4 days ago
frigates-dump-api	4 days ago
frigates-dump-viewer	6 days ago
frigates-engine	4 days ago
geometry-api	4 days ago
git-retrieve	5 days ago
player-test	23 days ago
scripts	last month
weeklyrunner	New configs + actions logs 6 days ago
.gitignore	3 months ago
LICENSE	6 months ago
README.md	3 months ago
output.bump	last month
pom.xml	2 months ago

# Dependencies between modules

```
1  <?xml version="1.0" encoding="UTF-8" standalone="no"?>
2  <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">
3    <modelVersion>4.0.0</modelVersion>
4
5    <groupId>fr.unice.polytech.si3.qgl</groupId>
6    <artifactId>runners.aggregator</artifactId>
7    <version>1.0</version>
8    <packaging>pom</packaging>
9
10   <modules>
11     <module>geometry-api</module>
12     <module>frigates-core</module>
13     <module>frigates-dump-api</module>
14     <module>frigates-engine</module>
15     <module>player-test</module>
16     <module>weeklyrunner</module>
17     <module>frigates-dump-viewer</module>
18   </modules>
19 </project>
20
```



needs

# Dependencies between modules

```
1  <?xml version="1.0" encoding="UTF-8" standalone="no"?>
2  <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">
3    <modelVersion>4.0.0</modelVersion>
4
5    <groupId>fr.unice.polytech.si3.qgl</groupId>
6    <artifactId>runners.aggregator</artifactId>
7    <version>1.0</version>
8    <packaging>pom</packaging>
9
10   <modules>
11     <module>geometry-api</module>
12     <module>frigates-core</module>
13     <module>frigates-dump-api</module>
14     <module>frigates-engine</module>
15     <module>player-test</module>
16     <module>weeklyrunner</module>
17     <module>frigates-dump-viewer</module>
18   </modules>
19 </project>
20
```



needs

**Q&A**