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**Maven**

# Apache Maven

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**Maven**

## Agenda

- What is Maven?
- Simple web application mavenized
- Maven configuration details
- dLibra – multi-tier application mavenized
- Summary

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**Maven**

## What is Maven?

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- Written in Java
- Open-source
- Java project development tool
- Java project quality assurance tool
- Java project management tool

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## Development tool

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- Well defined project structure
- Uniform build system
- Ant functionality...
- ... and something more with **Jelly**

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## Development tool

Jelly example:

```
<echo>You have folowing releases: </echo>
<fileScanner var="releases">
  <fileset dir="${basedir}/${releaseHome}">
    <patternset>
      <include name="*" />
    </patternset>
  </fileset>
</fileScanner>
<j:forEach var="releaseL" items="${releases.directories()}">
  <j:if
test="${!releaseL.getName().equals(releaseHome.getExpressionT
ext())}">
    <echo>${releaseL.getName()}</echo>
  </j:if>
</j:forEach>
<input message="Please enter name for a new release:"
addproperty="release.name"/>
<echo>
  Thank :- )
</echo>
```

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**Quality assurance tool**

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- Helps in testing practices
- Prepares reports from automatic code inspections
- Provides various code metrics

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**Management tool**

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- Provides general project information
- Provides project progress information
- Helps in configuration management

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# Maven

**External dependencies**

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**External dependencies**

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### Simple web application...

- List of movies, 1 developer :-)
- Simple Velocity servlet which reads and writes data from database
- Using Ant (82 lines of build.xml) to:
  - Compiling, cleaning
  - Running tests
  - Building WAR
  - Generating JavaDocs

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### ...mavenized

- 2 hours of work
- Project structure modified
- 122 lines in 2 config files
- Full previous Ant functionality + ...

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### Configuration details

- Project Object Model** (project.xml)
  - Basic project information (version, company, description, ...)
  - Teamwork information (team members, repository, issue tracking, ...)
  - Dependencies description
  - Build description
  - Project reports list

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### Configuration details

- project.properties
  - Project specific file
  - Maven configuration
  - Plugins configuration
- build.properties
  - Developer specific file
  - Local paths, usernames, passwords etc.

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### Project structure

- src/
  - src/java/, src/xsl/, ...
  - src/test/
  - src/webapp/
- xdocs/
  - xdocs/changes.xml
  - xdocs/navigation.xml
- project.properties
- build.properties
- LICENSE.txt
- target/

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## dLibra

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- Digital library framework from PSNC
  - <http://dlibra.psnc.pl/>
- Wielkopolska Biblioteka Cyfrowa
  - <http://www.wbc.poznan.pl/>
- About 44 KLOC, 4 developers

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## Architecture

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- dLibra server
- Librarian application
  - used to manage library, add new publications etc.
- Reader application (WWW)
  - used to search and view publications in library
- Database

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## Used technologies

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- Server:
  - RMI
  - JDBC
  - Lucene
- Librarian application:
  - Swing
- Reader application:
  - Servlets
  - Velocity
  - XML, Digester

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## Used software

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- Eclipse
- Maven
- LuntBuild
- Jira
- FishEye

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## Maven in dLibra project

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- Initial work: 1-2 weeks
- With Maven: 0,5h/week (Maven + configuration management)
- 1397 lines in 4 files
- Local jars repository

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## Maven in dLibra project

- Cleans, compiles, runs tests
- Builds all jars, war and project .exe installers
- Makes releases
- Creates and drops system database
- Generates per developer config files from templates

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## Maven in dLibra project

- Generates JavaDocs, project documentation and user manuals (from XDoc and DocBook)
- Generates internal and external project site
- And a lot of other simpler functionalities

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## Multiproject

- Ability to work with multiple projects through one interface
- Project information inheritance
- Easy module separation
- Summary multiproject overview reports

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## Any bad sides?

- Long time in beta/RC version
- Problems with migration between releases - with complicated Jelly scripts
- Short command line buffer

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## Other software

- Eclipse plug-ins
- External companies Maven plug-ins

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## Maven 2

- Transitive dependencies
- Faster and smaller
- Defined build lifecycle
- Better multiproject support
- Improved repository layout
- No more Jelly scripts

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## Links

- Maven
  - <http://maven.apache.org/>
- Maven plug-ins
  - <http://maven-plugins.sourceforge.net/>

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## Questions?

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## Thank you