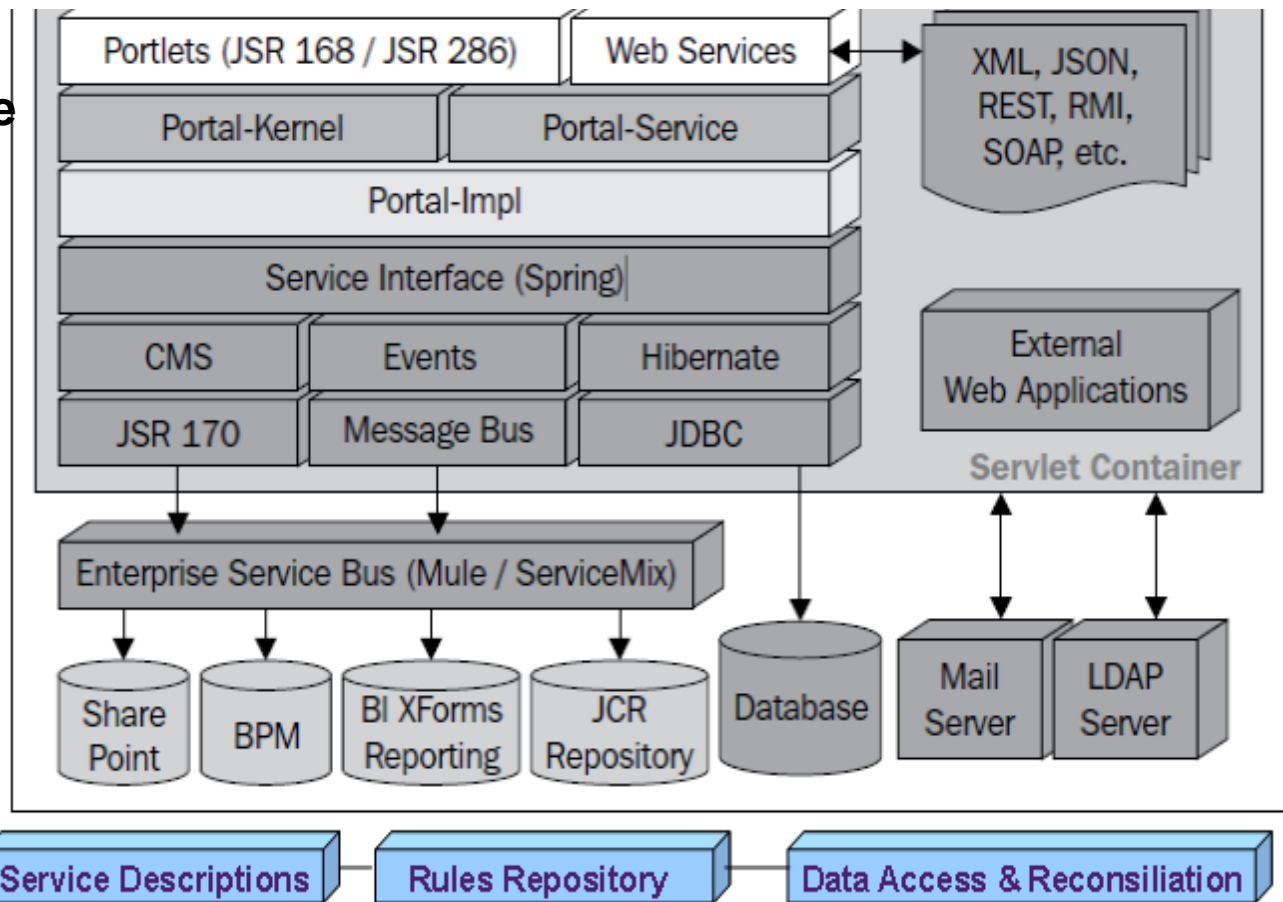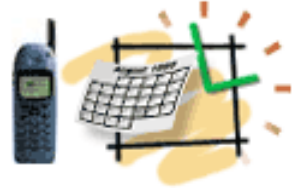# Liferay EXT Environment

- **Repetition:**

- **Liferay-Tomcat bundle**
- **MySQL DB Install**
- **Customize setenv.bat**
- **Connect to DB**

- **Liferay EXT:**

- **EXT Environment**
- **Ant**
- **Subversion**
- **Tomcat Plugin**
- **Get Portal Source**
- **Customize Properties**
- **Customize EXT Properties and Build EXT**

Portlets (JSR 168 / JSR 286) — Web Services — XML, JSON, REST, RMI, SOAP, etc.
Portal-Kernel — Portal-Service
Portal-Impl
Service Interface (Spring)
CMS — Events — Hibernate — External Web Applications
JSR 170 — Message Bus — JDBC
Servlet Container
Enterprise Service Bus (Mule / ServiceMix)
Share Point — BPM — BI XForms Reporting — JCR Repository — Database — Mail Server — LDAP Server
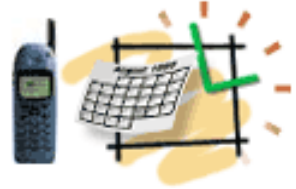Service Descriptions — Rules Repository — Data Access & Reconsiliation
Complementary Semantics (DataService) Frameworks: Data, Services, Rules & Scenarios

Basic Components

Liferay Platform Source & Library

Liferay-Tomcat Bundle

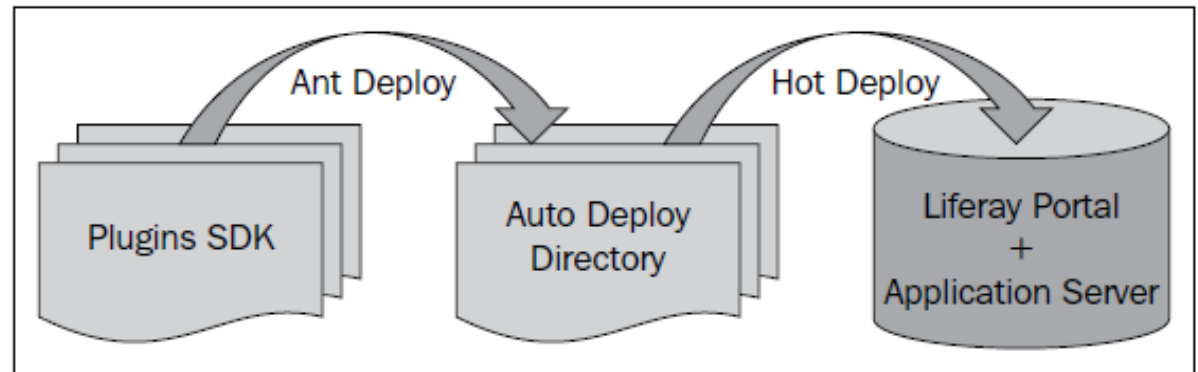Tomcat 6 Application Server

Development Environment: Eclipse & Ant

MySQL DB
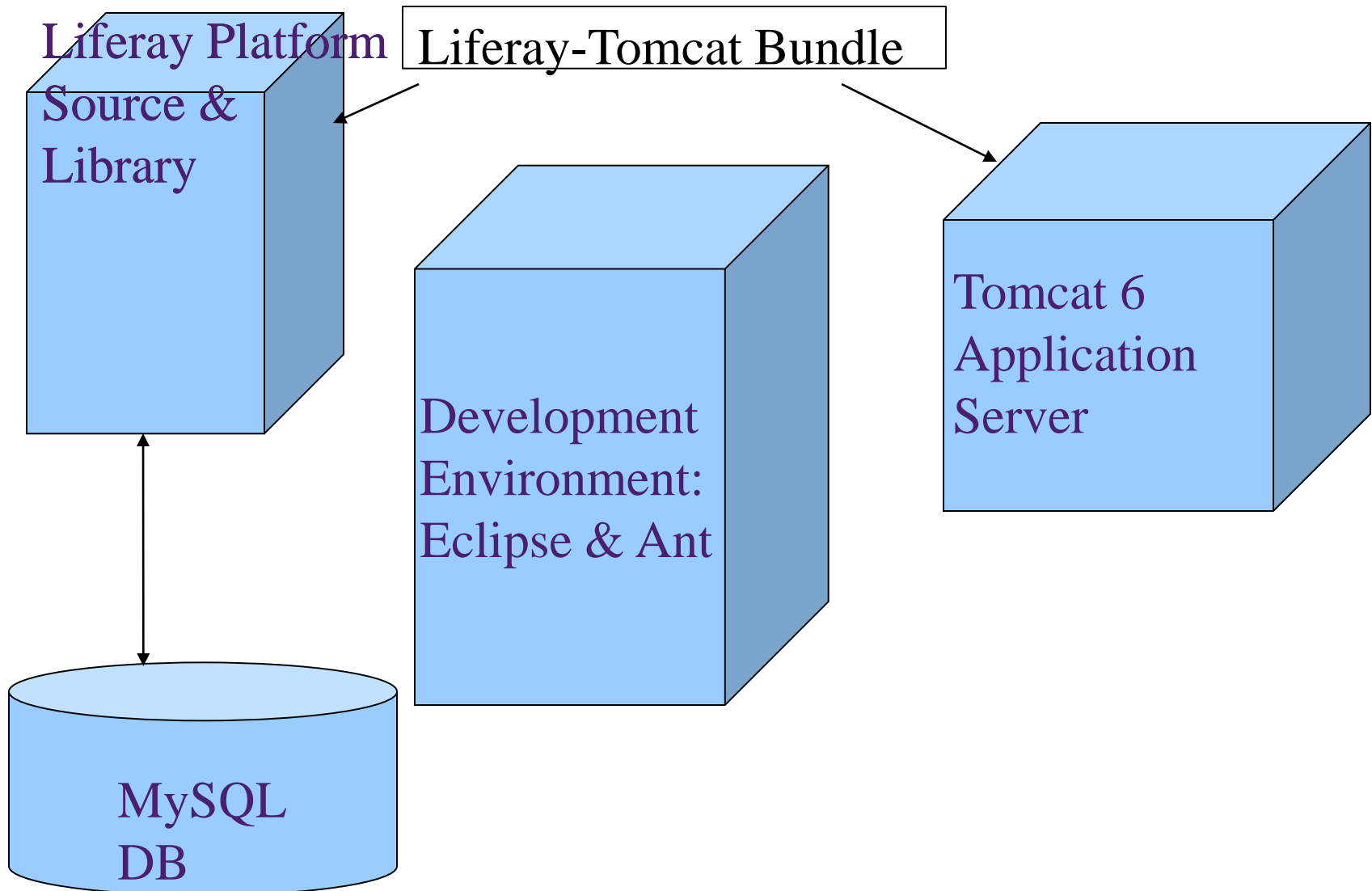
Plugins SDK and Extension Environment

Plugins SDK

- Plugins SDK → (Ant Deploy) → Auto Deploy Directory → (Hot Deploy) → Liferay Portal + Application Server

EXT Environment

- Custom Code → (override) → Liferay Portal Source Code → (merge) → Customized Liferay Portal → (deploy) → Application Server
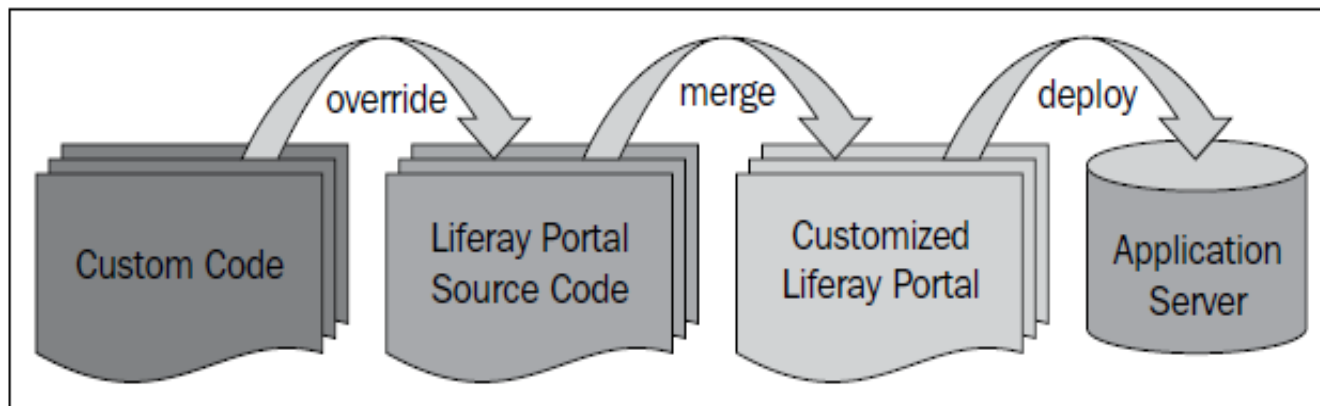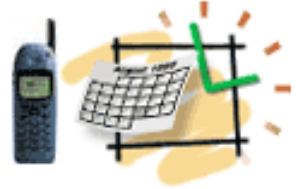
Plugins SDK

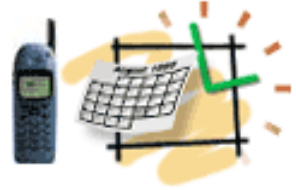```
□ 📁 sdk
    📁 clients
    📁 dist
    📁 hooks
 ⊞ 📁 layouttp
    📁 lib
    📁 misc
 □ 📁 portlets
    ⊞ 📁 bcd-portlet
    ⊞ 📁 dao-portlet
    ⊞ 📁 newportlet-portlet
    ⊞ 📁 osicdao-portlet
    ⊞ 📁 portlet.zip
 ⊞ 📁 themes
 ⊞ 📁 tools
```



Ant Deploy → Hot Deploy

Plugins SDK → Auto Deploy Directory → Liferay Portal + Application Server

# EXT Environment

```
ext
    classes
    ext-impl
    ext-lib
    ext-service
    ext-web
    lib
    modules
    output
    sql
    tools
    .classpat
    .project
    app.server.jeff.properties
```


Custom Code → override → Liferay Portal Source Code → merge → Customized Liferay Portal → deploy → Application Server
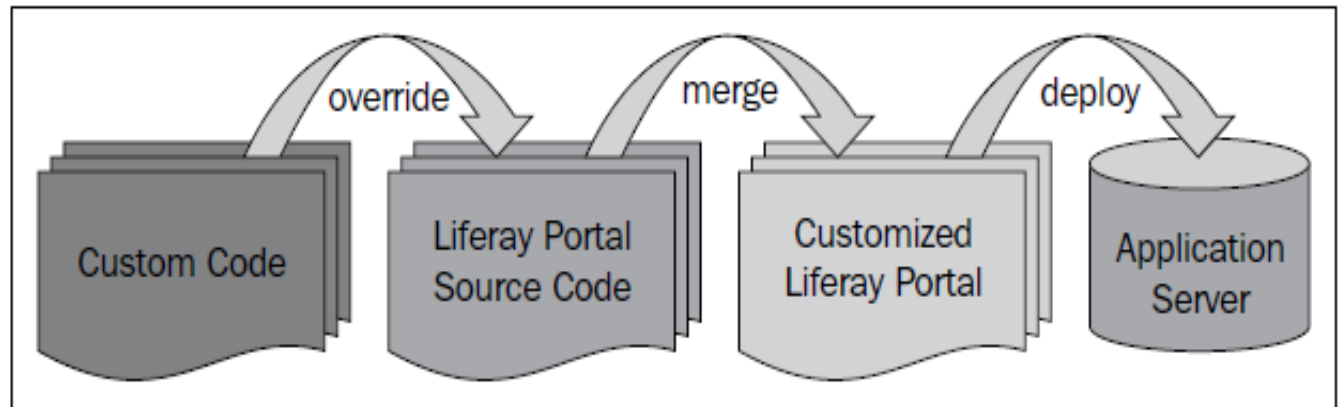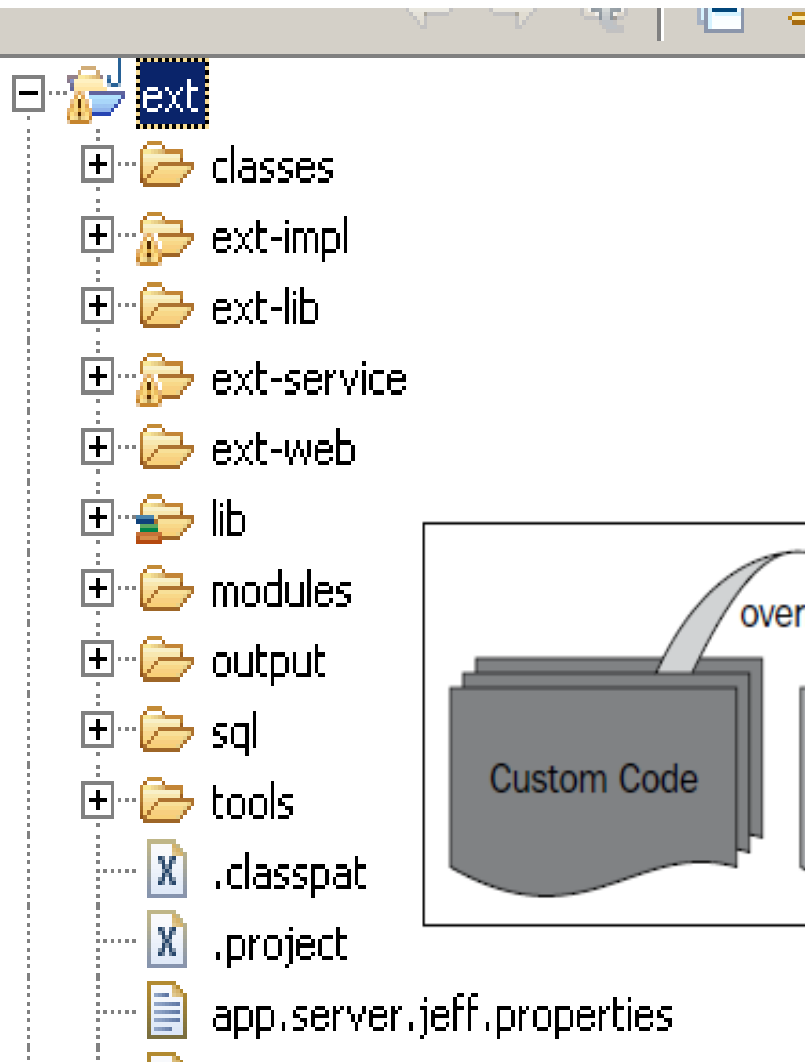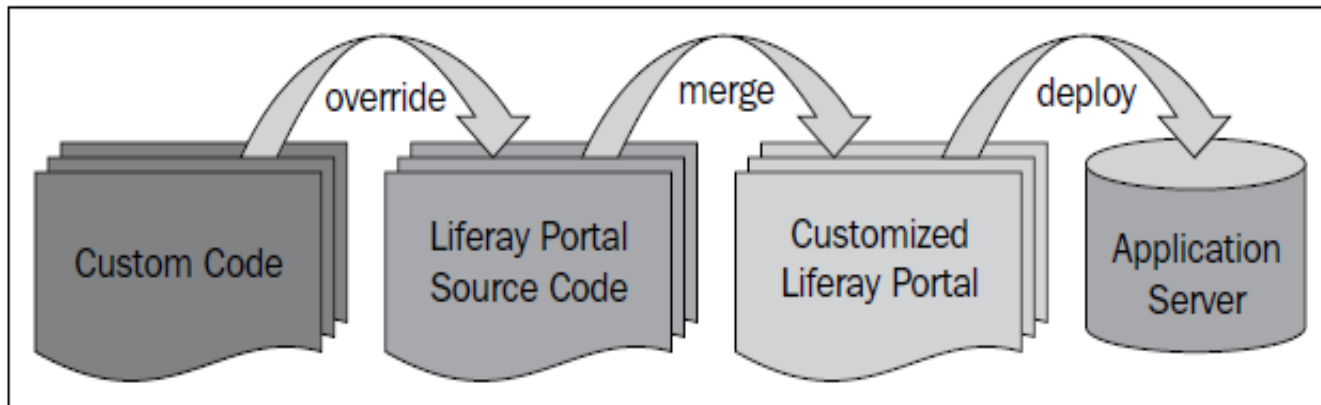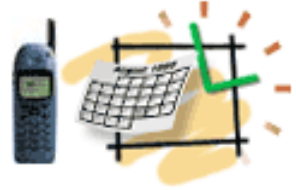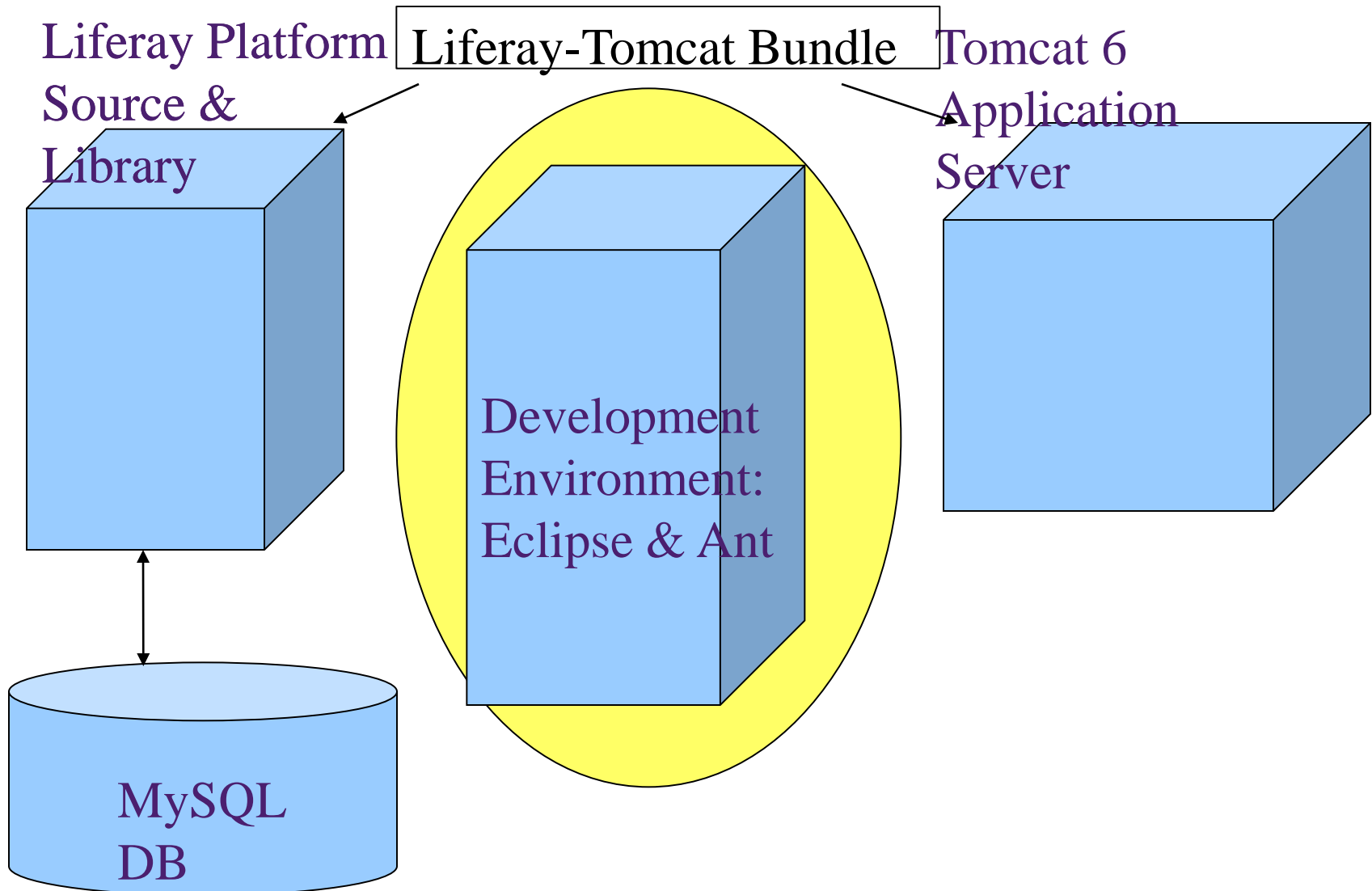
EXT Environment

What is EXT?

Ext is a wrapper for Liferay portal core source directories (that is, ext-impl/, ext-service/, and ext-web/).

EXT allows the users to develop on top of Liferay source

Basic Components

Liferay Platform Source & Library

Liferay-Tomcat Bundle

Tomcat 6 Application Server

Development Environment: Eclipse & Ant

MySQL DB

Install Ant and establish the workspace in Eclipse

Download and Install Ant from:

http://ant.apache.org

- set the ANT_HOME system variable
For example, c:\tools\ant (similar as JAVA_HOME)
- add to the PATH variable the location of <u>ant\bin</u>
For example, c:\tools\ant\bin

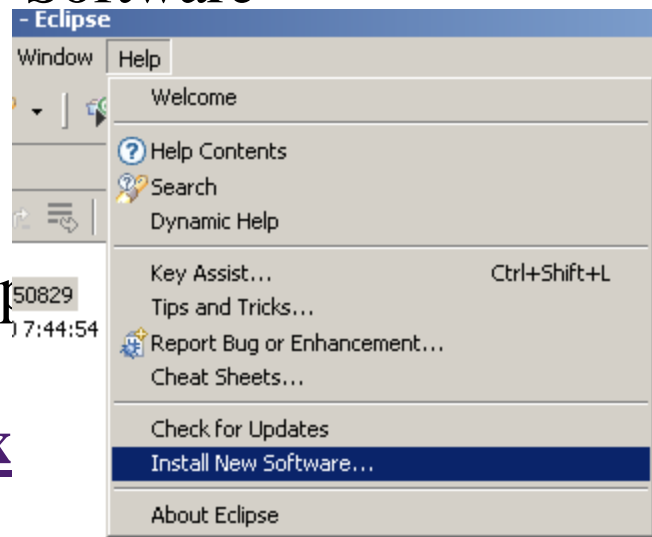**Start Eclipse and create a new workspace:**
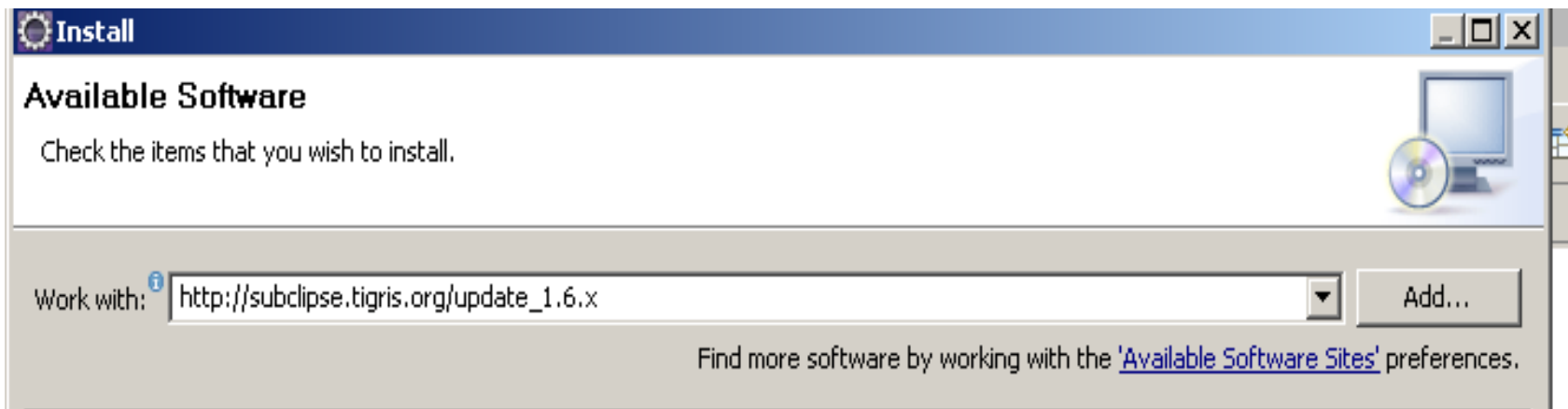**c:\liferay\workspace**
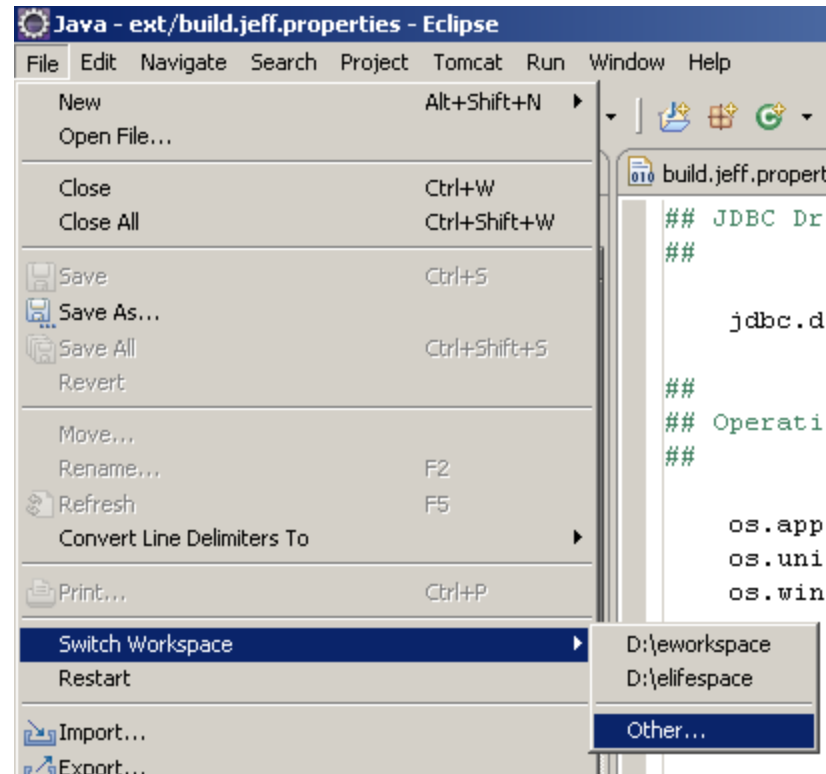
Install Subclipse (Subversion)

1. Open in Eclipse the Help – Install New Software window

2. Copy & paste the URL below for the u~50829

http://subclipse.tigris.org/update_1.6.x

Use the Subversion to get the Latest (Stable) Code from Liferay

After installation, open the Subclipse:

1. From the **Window** menu, select **Open Perspectives**.
2. Click on **Other…**
3. Select **SVN Repository Exploring**, and then click on the button **OK**.
4. Right-click on the **SVN Repositories** view.
5. Select **New** and the **Repository Location…**
6. Provide input as svn://svn.liferay.com/repos/public and click on **Finish**.
    User Name = "**guest**" (Leave the **password** field empty)

Expand the portal folders to see the Liferay portal source code

Download and unzip Tomcat Plugin

Download the tomcatPlugin.zip from the "share" directory:

$share/tomcatPlugin.zip

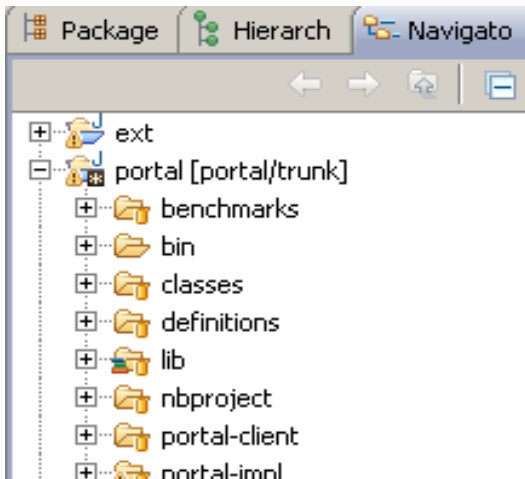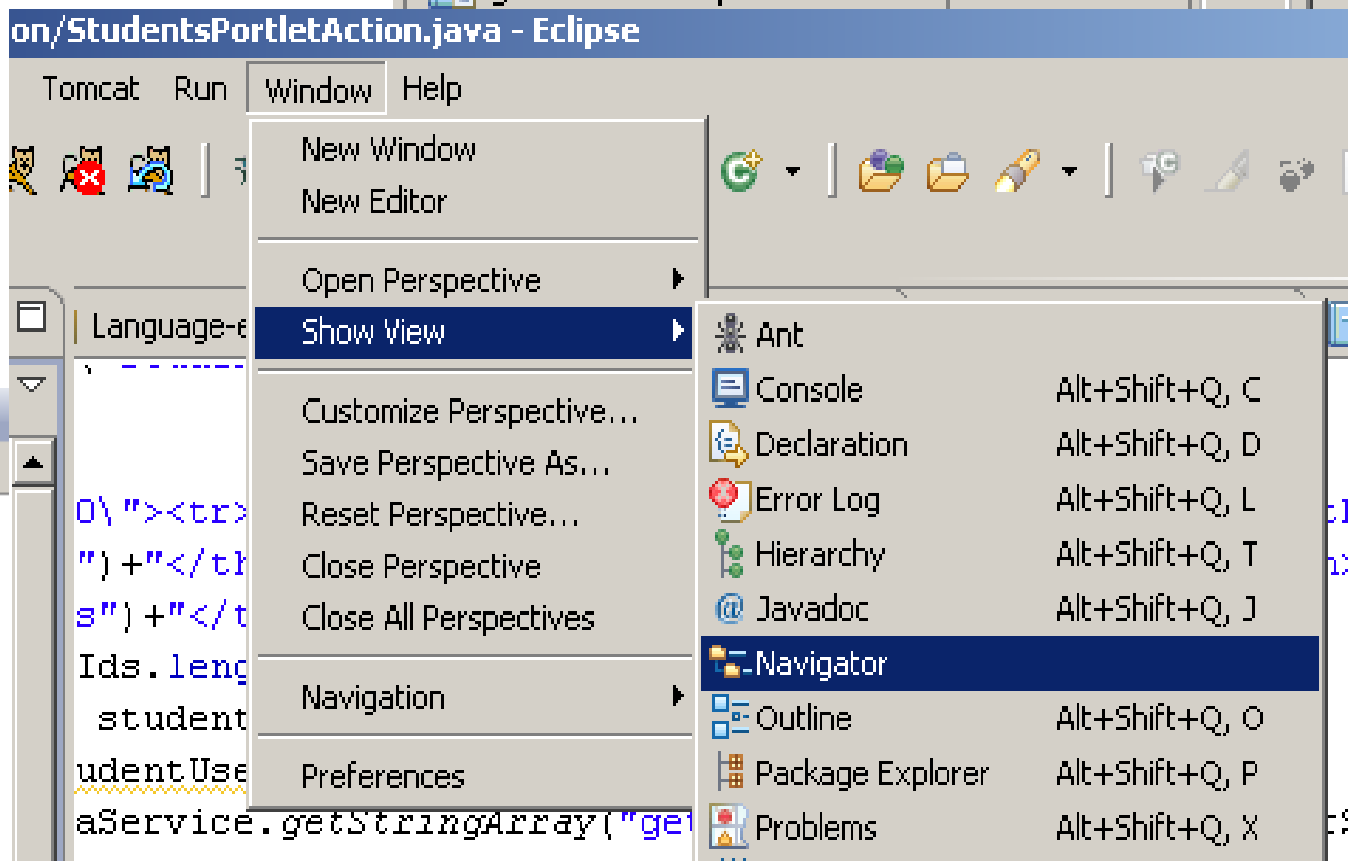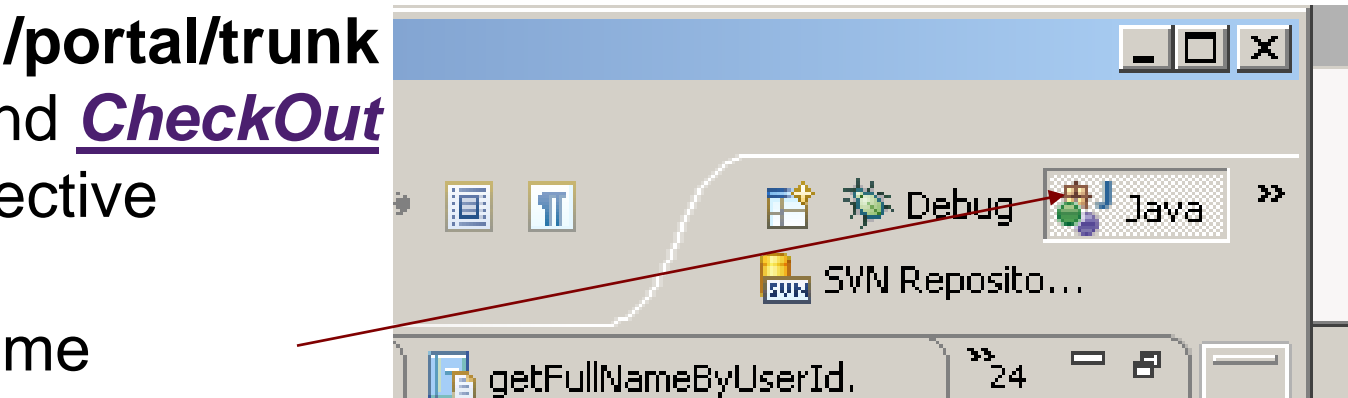Unzip its content into the folder:

c:\eclipse\dropins

Restart Eclipse and see the new Tomcat controls icons

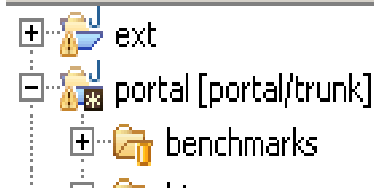# Checkout the Source and Prepare Eclipse for Building EXT

Right click on the **/portal/trunk** or other branch and ***CheckOut*** in the SVN Perspective
Use the default "portal" project name

Switch to Java Perspective and set the view, **Navigator**.

Prepare Eclipse-Ant for Building EXT

⊞ 🔒 ext
⊟ 🔒 portal [portal/trunk]
  ⊞ 📁 benchmarks

Add the view **Ant**
Window | Show View | Ant

build-test·
build-test·
build-test·
build-test·
build-test·
build-test·
build-test·
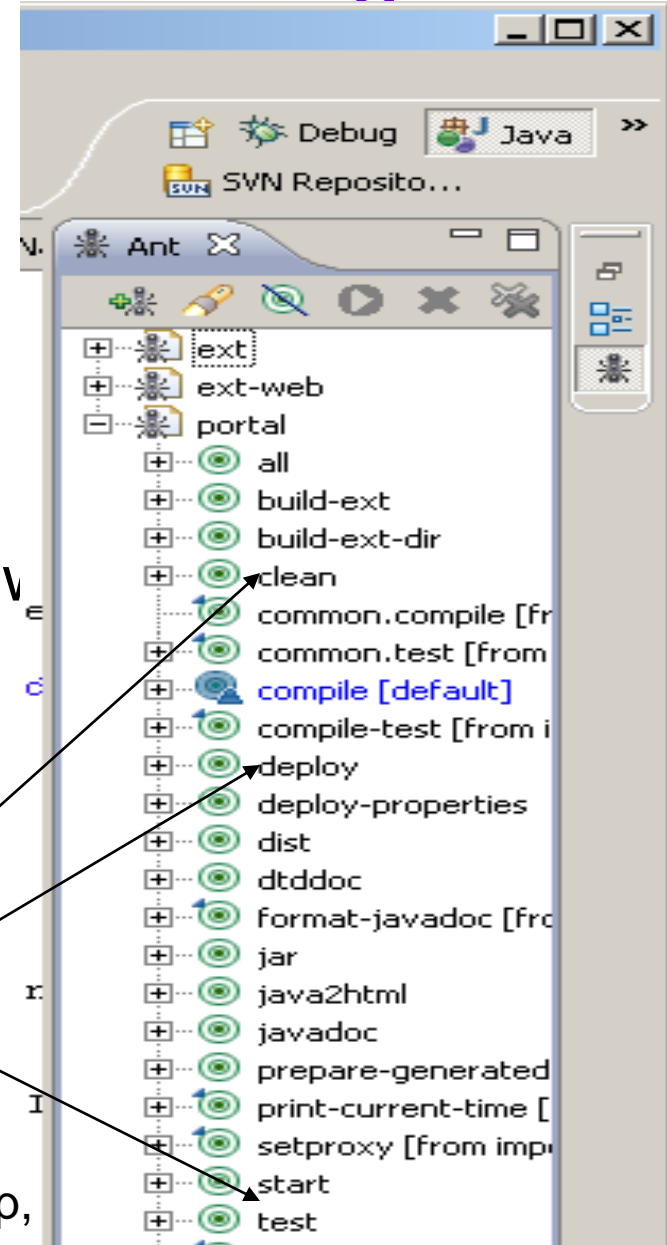build-test
build.jeff.
build.prop
build.xml·

Drag the build.xml under
the **/portal** folder into the **Ant** view

You will see all the build targets
for the portal in the **Ant** view

The most commonly used are:
clean, start, deploy

Example: the target *clean* will delete classes related to
/portal-impl, /portal-kernel, /portal-service, and delete /tmp,
/logs, /work and /webapps/ROOT in the Tomcat folder

🔲 Debug 🔲 Java »
SVN Reposito...

🐜 Ant ✕

⊞ 🐜 ext
⊞ 🐜 ext-web
⊟ 🐜 portal
  ⊞ ◉ all
  ⊞ ◉ build-ext
  ⊞ ◉ build-ext-dir
  ⊞ ◉ clean
  ⊞ ◉ common.compile [fr
  ⊞ ◉ common.test [from
  ⊞ ◉ compile [default]
  ⊞ ◉ compile-test [from i
  ⊞ ◉ deploy
  ⊞ ◉ deploy-properties
  ⊞ ◉ dist
  ⊞ ◉ dtddoc
  ⊞ ◉ format-javadoc [fro
  ⊞ ◉ jar
  ⊞ ◉ java2html
  ⊞ ◉ javadoc
  ⊞ ◉ prepare-generated
  ⊞ ◉ print-current-time [
  ⊞ ◉ setproxy [from imp
  ⊞ ◉ start
  ⊞ ◉ test

Show Tomcat folders in Eclipse

1. Create a Java Project named **Server**

Java - ext/ext-impl/src/com/jeffco/osicdao/action/StudentsPortlet.

File Edit Source Refactor Navigate Search Project Tomcat Run Wind

New   Alt+Shift+N ▶   Java Project
Open File...   Project...
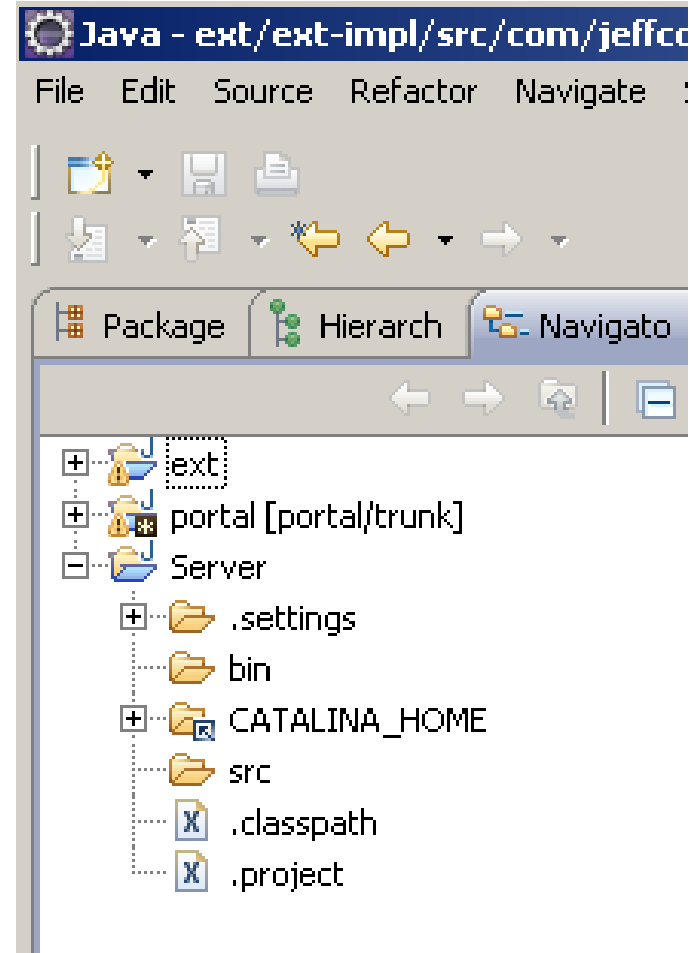Close   Ctrl+W   Package
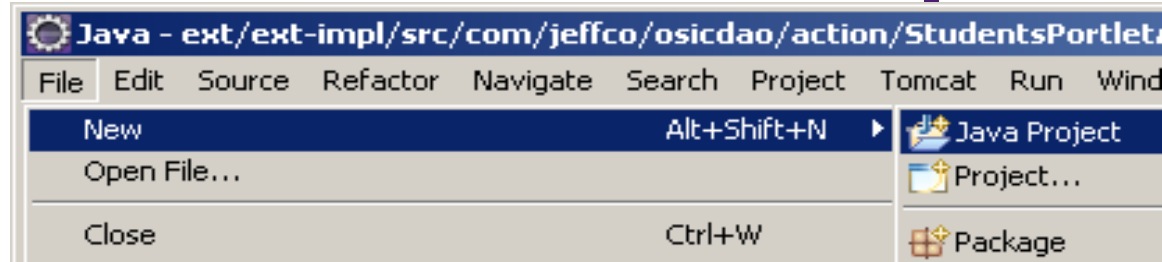
2. Right-click on the project **Server** and select **New | Folder**

3. Enter the **Folder** name**: CATALINA_HOME**
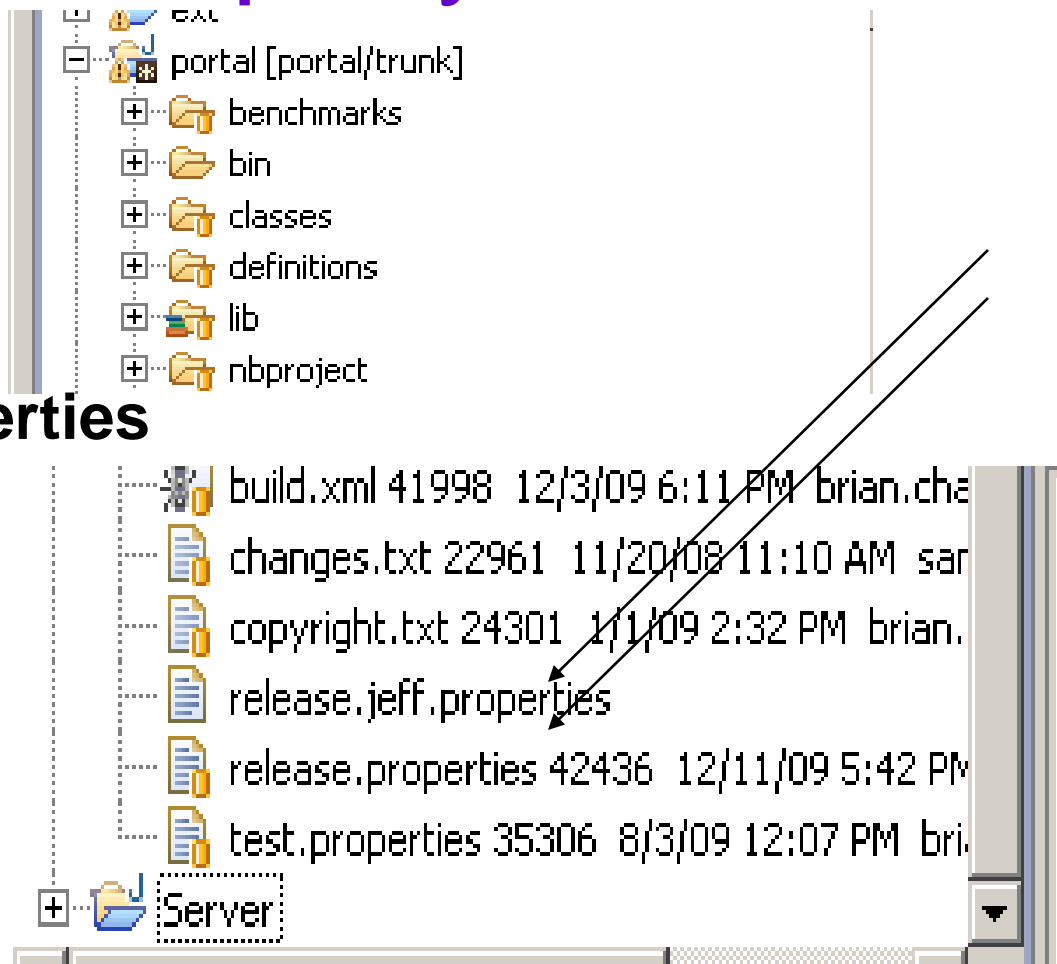
4. Click on the **Advanced** button

5. Check the checkbox, **Link to folder in the file system**, and enter the value, **c:\liferay\tomcat6**

6. Click on the **Finish** button

Java - ext/ext-impl/src/com/jeffco

File Edit Source Refactor Navigate

Package Hierarch Navigato

ext
portal [portal/trunk]
Server
  .settings
  bin
  CATALINA_HOME
  src
  .classpath
  .project

Customize Property Files

Copy **release.properties**
To
release.{$user.name}.properties

```
ext
portal [portal/trunk]
    benchmarks
    bin
    classes
    definitions
    lib
    nbproject

    build.xml 41998  12/3/09 6:11 PM  brian.cha
    changes.txt 22961  11/20/08 11:10 AM  sar
    copyright.txt 24301  1/1/09 2:32 PM  brian.
    release.jeff.properties
    release.properties 42436  12/11/09 5:42 PM
    test.properties 35306  8/3/09 12:07 PM  bri
    Server
```
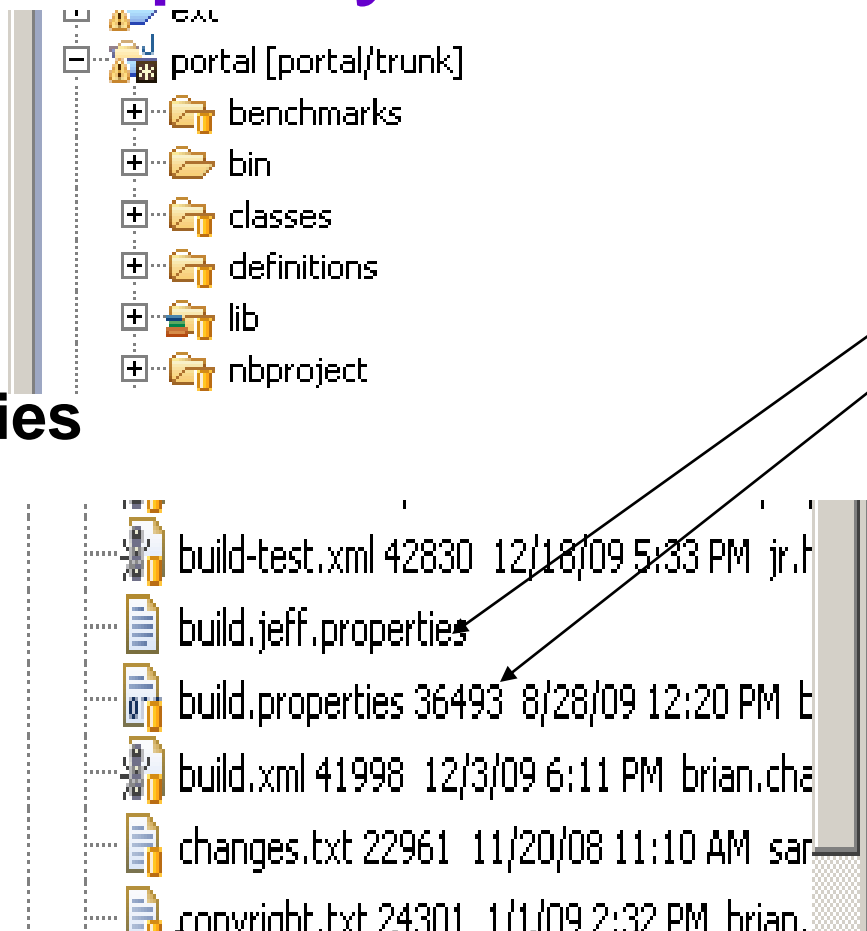
In the file **release.{$user.name}.properties** overwrite the line

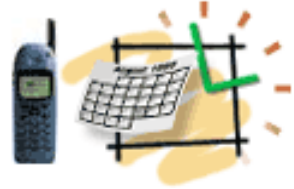**lp.ext.dir=c:/liferay/workspace/ext**

Customize Property Files - 2

Copy **build.properties**
To
build.{$user.name}.properties

portal [portal/trunk]
- benchmarks
- bin
- classes
- definitions
- lib
- nbproject

build-test.xml 42830 12/18/09 5:33 PM jr.h
build.jeff.properties
build.properties 36493 8/28/09 12:20 PM b
build.xml 41998 12/3/09 6:11 PM brian.cha
changes.txt 22961 11/20/08 11:10 AM sar
copyright.txt 24301 1/1/09 2:32 PM brian.

No search re

In the **build.{$user.name}.properties,** update the lines:

ant.build.javac.source=1.6
ant.build.javac.target=1.6

Customize Property Files - 3

```
        ext
   portal [portal/trunk]
      benchmarks
      bin
      classes
      definitions
      lib
      nbproject
```

Copy **app.server.properties**
To
app.server.{$user.name}.properties

```
      util-taglib
      .classpath 42455  12/12/09 1
      .project 210  4/21/06 1:38 AM
      app.server.jeff.properties
      app.server.properties 31083
```

In the
app.server.{$user.name}.properties
 update the lines:

app.server.parent.dir=c:/liferay

....

app.server.tomcat.version=6.0
app.server.tomcat.dir=${app.server.parent.dir}/tomcat6
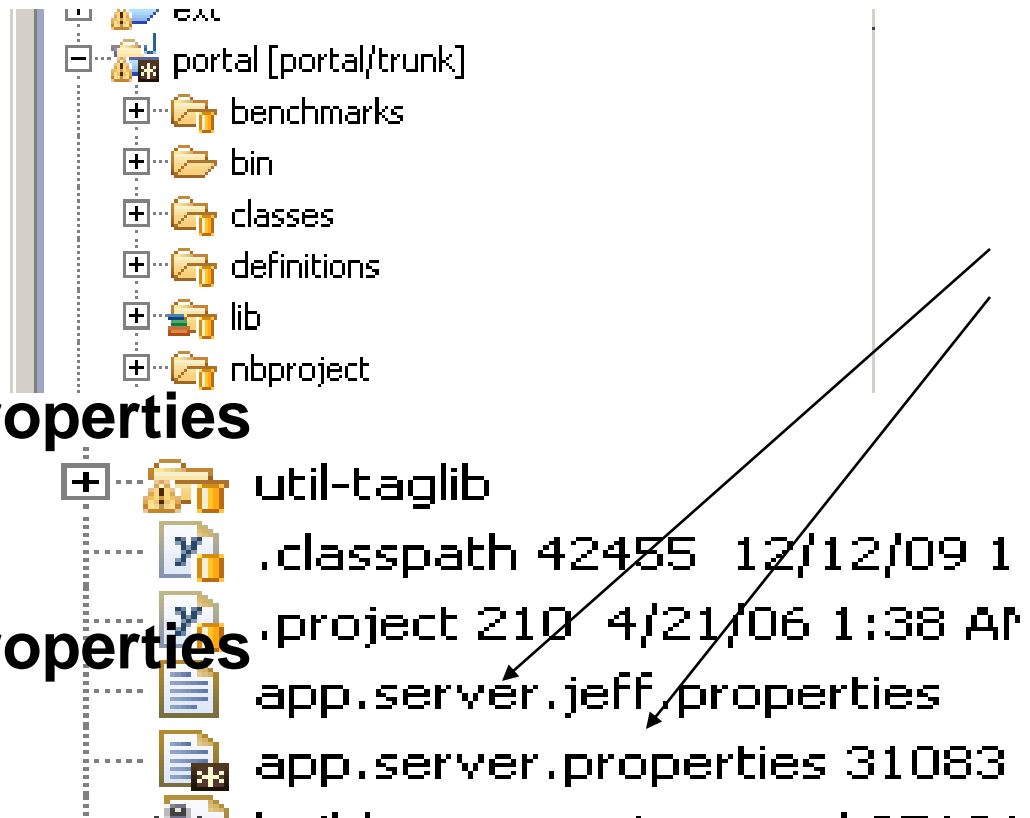
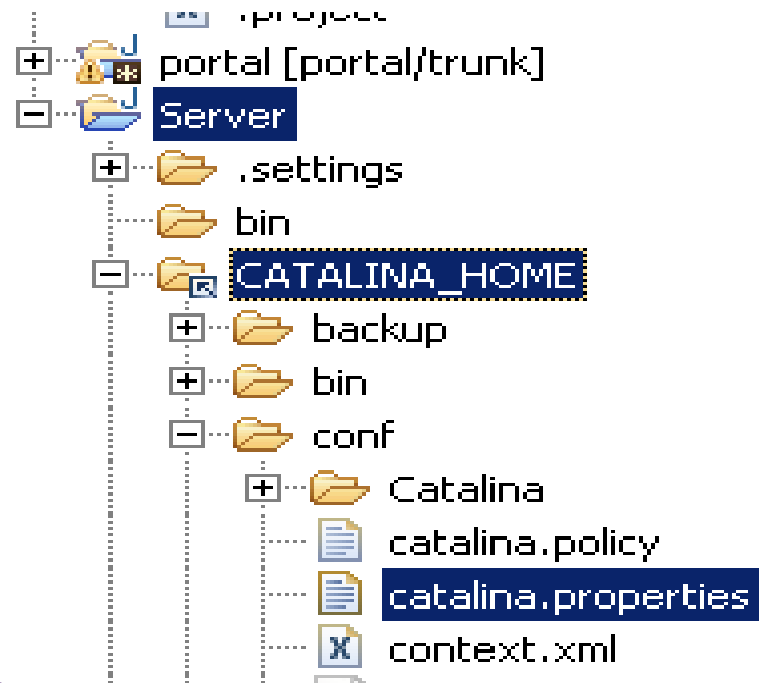# Customize Property Files - 4

In the Eclipse – **Server** folder,
Open the properties file
/conf/catalina.properties

Find the line:
common.loader=

Add *${catalina.home}/lib/ext/*.jar* at the end of the line (if it is not there)

The line should look like this:

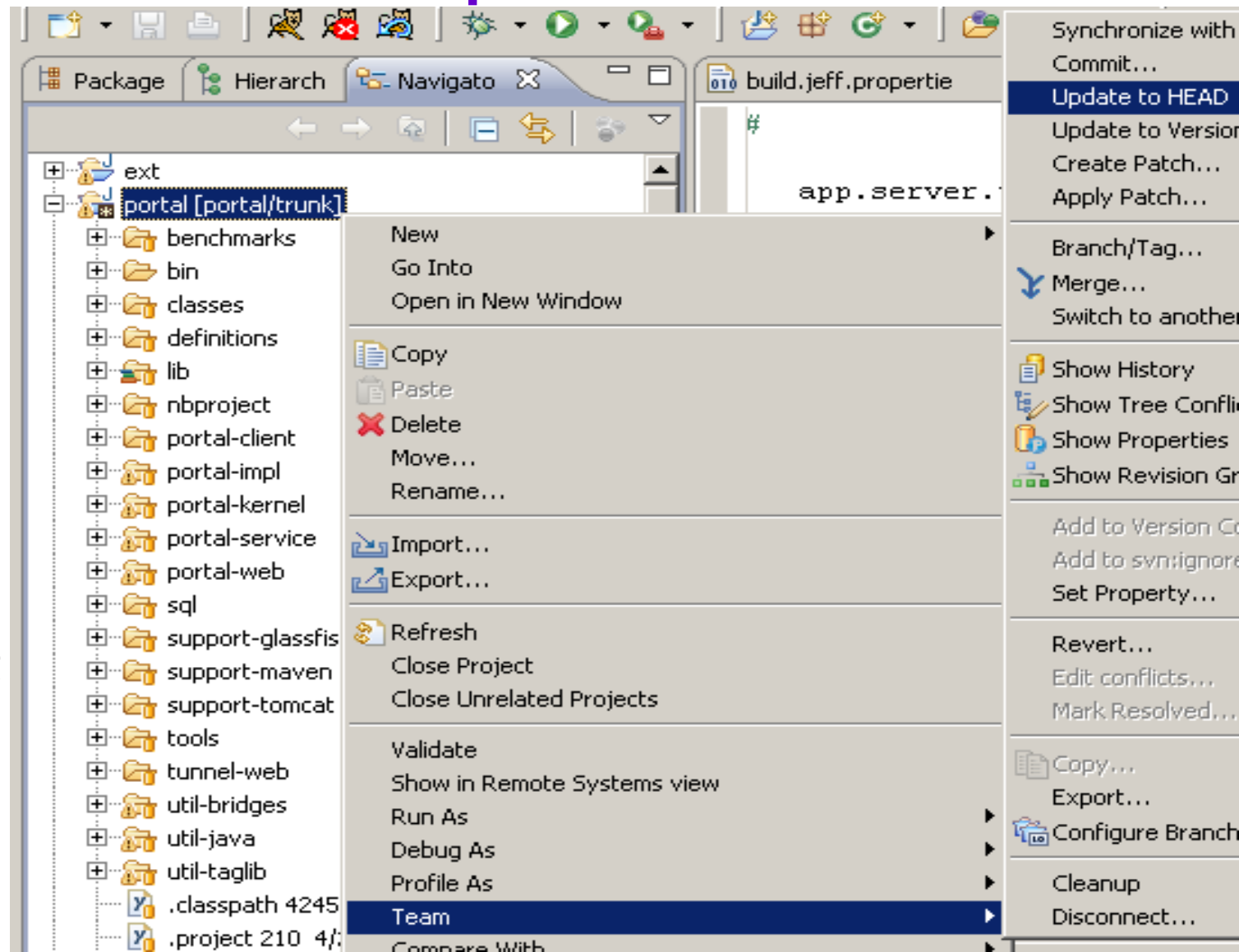*common.loader=${catalina.home}/lib,${catalina.home}/lib/*.jar ,${catalina.home}/lib/ext/*.jar*
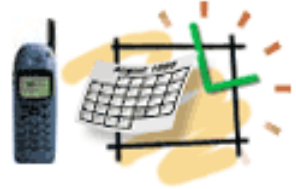
Use SVN to Update the Source

Right-click on the Java project

portal,

select

Team - Update to HEAD

Synchronize with
Commit...
Update to HEAD
Update to Version
Create Patch...
Apply Patch...

Branch/Tag...
Merge...
Switch to another

Show History
Show Tree Confli
Show Properties
Show Revision Gr

Add to Version C
Add to svn:ignore
Set Property...

Revert...
Edit conflicts...
Mark Resolved...

Copy...
Export...
Configure Branch

Cleanup
Disconnect...

Package | Hierarch | Navigato

build.jeff.propertie

#

app.server.

ext
portal [portal/trunk]
benchmarks
bin
classes
definitions
lib
nbproject
portal-client
portal-impl
portal-kernel
portal-service
portal-web
sql
support-glassfis
support-maven
support-tomcat
tools
tunnel-web
util-bridges
util-java
util-taglib
.classpath 4245
.project 210 4/;

New
Go Into
Open in New Window

Copy
Paste
Delete
Move...
Rename...

Import...
Export...

Refresh
Close Project
Close Unrelated Projects

Validate
Show in Remote Systems view
Run As
Debug As
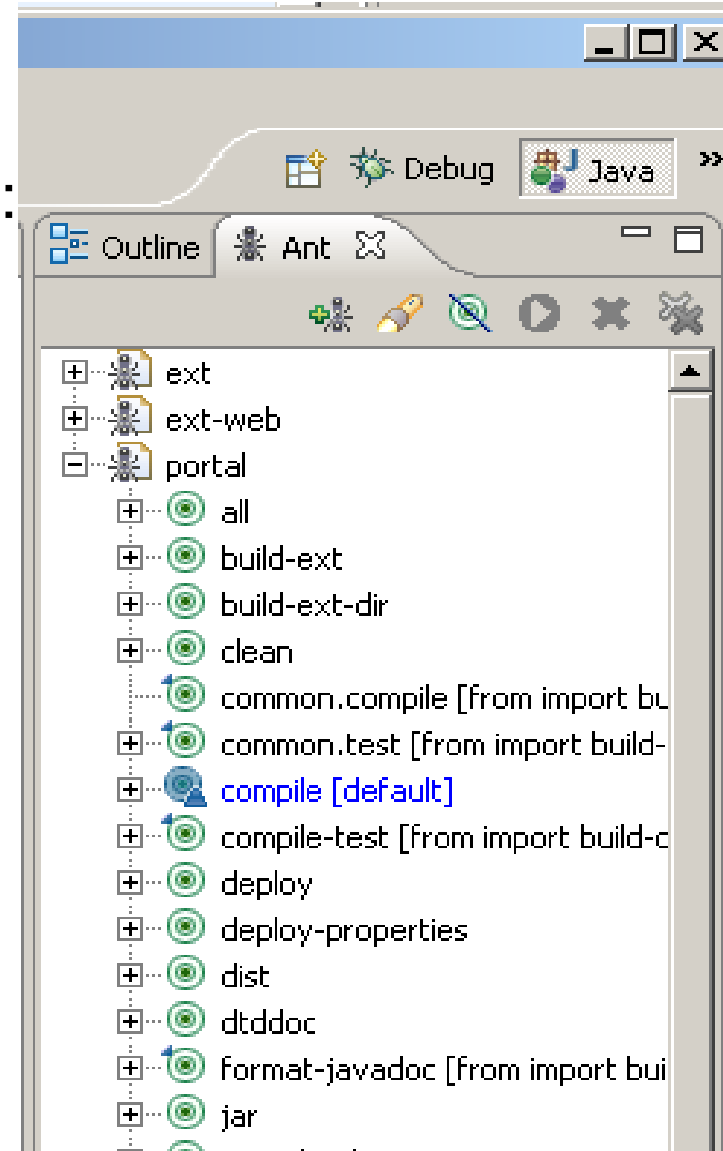Profile As
Team
Compare With

Build the Java Project EXT

1. Open the **Ant** view in the Eclipse IDE:
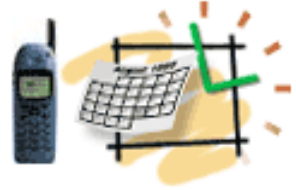 - **Window - Show View – Ant**

Drag the build.xml file under the **/portal**
to the **Ant** view

Double-click on the target **_clean_**
in the **Ant** view.

2. Double-click on the target **_start_**

3. Double-click on the target **_build-ext_**
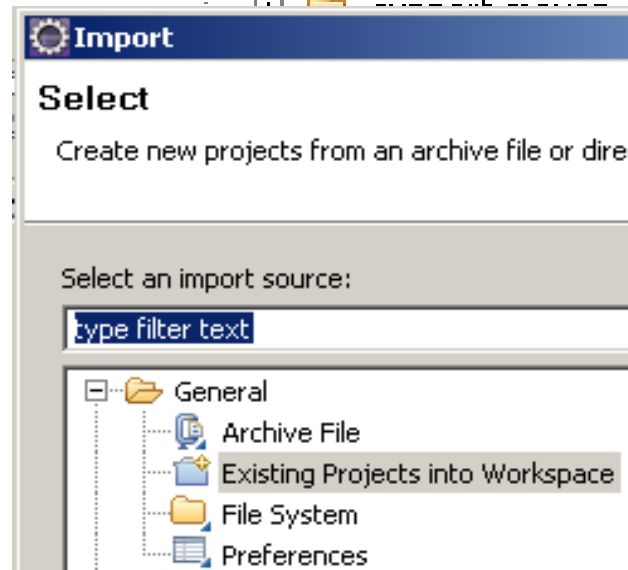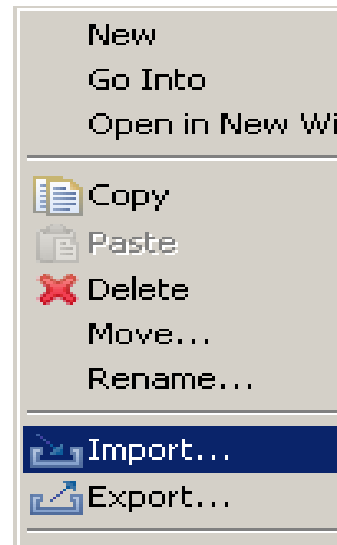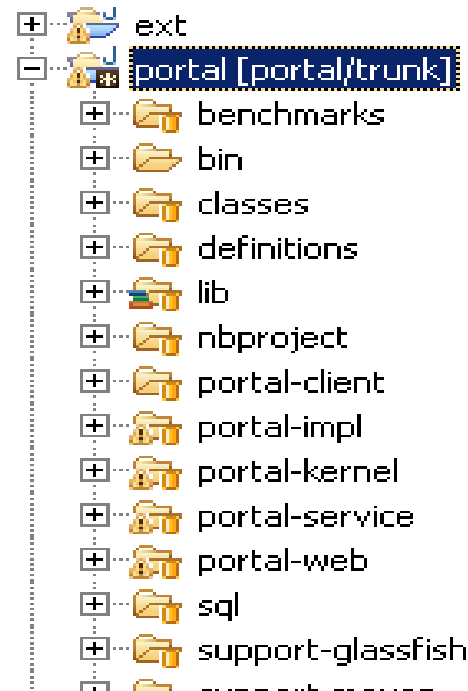
Import EXT Source
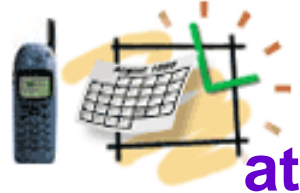
1. Right-click on the **Navigator** view and select **Import...**

2. Select an import source: **General - Existing Projects into Workspace**

3. The root directory: **c:/liferay/workspace/ext**

4. Select ext (c:/liferay/workspace/ext).

5. Click on the **Finish** button.

ext
portal [portal/trunk]
  benchmarks
  bin
  classes
  definitions
  lib
  nbproject
  portal-client
  portal-impl
  portal-kernel
  portal-service
  portal-web
  sql
  support-glassfish

New
Go Into
Open in New Wi
Copy
Paste
Delete
Move...
Rename...
Import...
Export...

Import

Select

Create new projects from an archive file or direc

Select an import source:

type filter text

General
  Archive File
  Existing Projects into Workspace
  File System
  Preferences
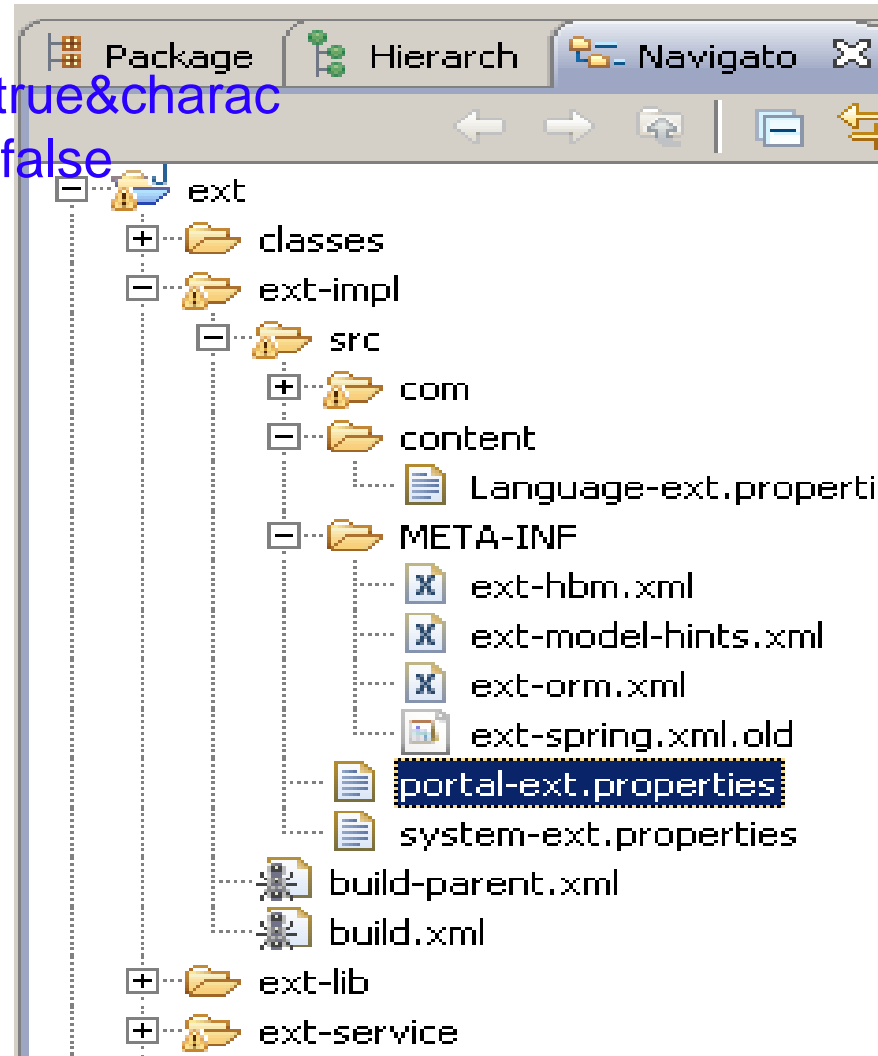
MySQL
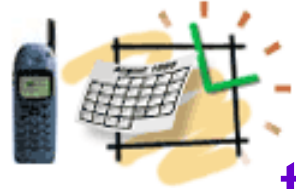jdbc.default.driverClassName=com.mysql.jdbc.Driver
jdbc.default.url =
jdbc:mysql://localhost/lportal?useUnicode=true&charac
terEncoding=UTF-8&useFastDateParsing=false

jdbc.default.username=root
jdbc.default.password=train

mail.session.jndi.name=mail/MailSession

Provide eMail Data in the
tomcat6/conf/Catalina/localhostRoot.xml

```
<Context path="" crossContext="true">

<Resource name="mail/MailSession" auth="Container"
type="javax.mail.Session"
mail.imap.host="imap.gmail.com" mail.imap.port="993"
mail.pop.host="pop.gmail.com" mail.store.protocol="imap"
mail.transport.protocol="smtp" mail.smtp.host="smtp.gmail.com"
mail.smtp.port="465" mail.smtp.auth="true"
mail.smtp.starttls.enable="true"
mail.smtp.user="USERNAME" password="PASSWORD"
mail.smtp.socketFactory.class="javax.net.ssl.SSLSocketFactory"
/>

</Context>
```

Customize EXT Property Files

1. Copy the following files:

build.${user.name}.properties

app.server.${user.name}.properties)

from the **/portal** project to the **/ext** project

2. In the /ext project, open the file:

build.${user.name}.properties

At the bottom, add the line:
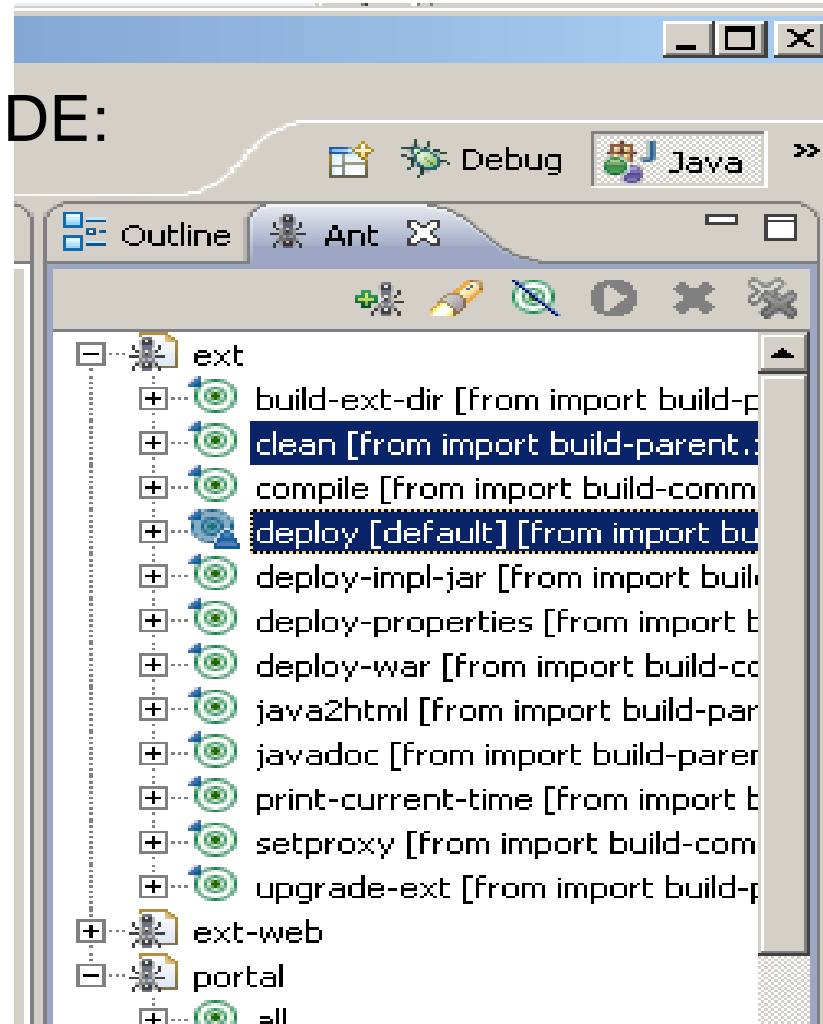
    lp.ext.dir=c:/liferay/workspace/ext

Clean and Deploy EXT project

1. Open the **Ant** view in the Eclipse IDE:
 - Window - Show View – Ant

Drag the build.xml file under the **/ext**
to the **Ant** view

2. Double-click on the target **_clean_**
in the **Ant** view.

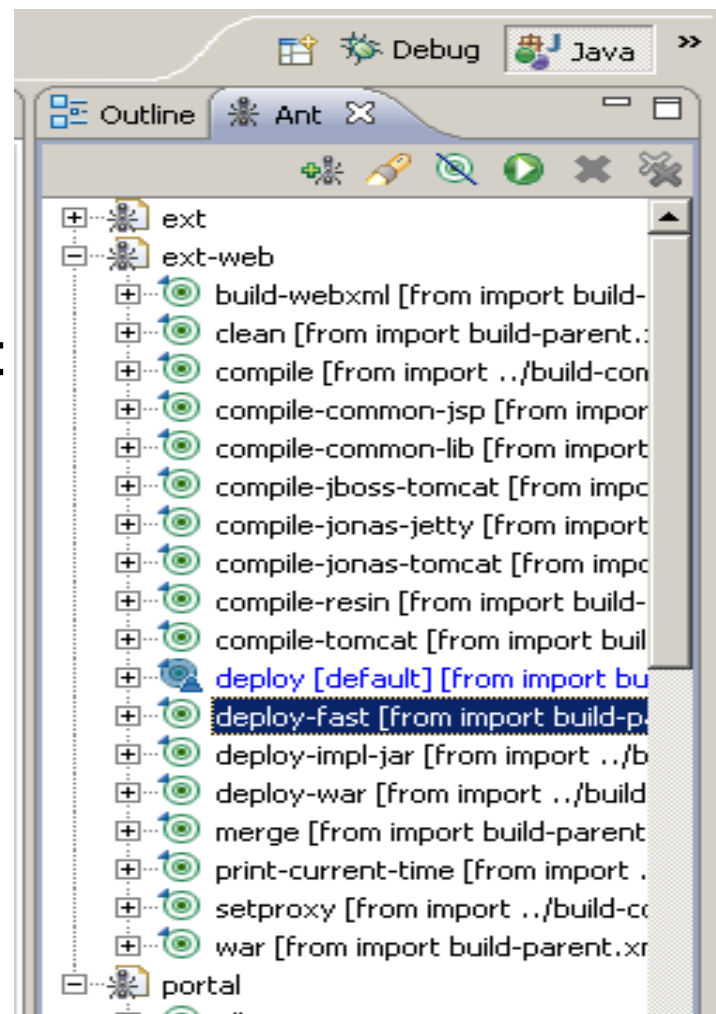3. Double-click on the target **_deploy_**
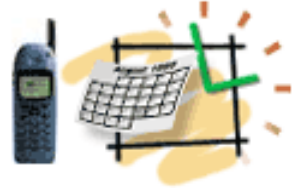
Fast Deploy of Web Changes in the EXT project

For changes in the ***ext/ext-web***
For example, jsp, css, or images
There is the **deploy-fast** method

1. Open the **Ant** view in the Eclipse IDE:
 - Window - Show View – Ant

Drag the build.xml file under
the **/ext/ext-web**
to the **Ant** view

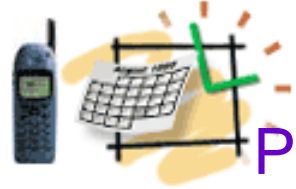2. Double-click on the ***deploy-fast***

```
          Debug    Java   »

Outline    Ant  ✕         ▢ ▢

ext
ext-web
   build-webxml [from import build-
   clean [from import build-parent.:
   compile [from import ../build-con
   compile-common-jsp [from impor
   compile-common-lib [from import
   compile-jboss-tomcat [from impo
   compile-jonas-jetty [from import
   compile-jonas-tomcat [from impo
   compile-resin [from import build-
   compile-tomcat [from import buil
   deploy [default] [from import bu
   deploy-fast [from import build-p
   deploy-impl-jar [from import ../b
   deploy-war [from import ../build
   merge [from import build-parent
   print-current-time [from import .
   setproxy [from import ../build-cc
   war [from import build-parent.xr
portal
```

Make Sure You can Run and Debug in Eclipse

1) Open "Run Configurations..." under the Run menu
2) Under *Java Applications* node in the tree, right click and "*New*"
3) On Main tab, select your EXT project
4) In the *Main* class put *org.apache.catalina.startup.Bootstrap* (no checkboxes)
5) In the *Arguments* tab, in the *Program* arguments enter: *start*
6) In the VM arguments:

-Xmx512m
-XX:PermSize=32m
-XX:MaxPermSize=160m
-Dfile.encoding=UTF8
-Duser.timezone=EST
-Djava.security.auth.login.config=**c:/liferay/tomcat6**/conf/jaas.config
-Dcatalina.base=**c:/liferay/tomcat6**
-Dcatalina.home=**c:/liferay/tomcat6**
-Djava.io.tmpdir=**c:/liferay/tomcat6**/temp

7) In the **Working** directory select: **Other**: c:/liferay/tomcat6/bin
8) In Classpath tab, remove ALL User entries, just leave the JRE System library
9) Select User Entries and "Add External JArs", **c:/liferay/tomcat6/bin/bootstrap.jar**
10) In the Source tab, select the main project and related projects
11) Under Common tab check **Run** and **Debug** – **You are ready to go!**

Check the Deployment and Start Liferay!
Portal API Library Jars are deployed in the Tomcat6/lib/ext

Play with Portal and Portlets
Recollect JSR 286
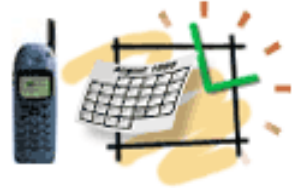# (Java Specification Request)

A Portlet is an application that presents a fragment of a portal page

A Portlet Container assembles the portlets into a portal page

Liferay Ext Setup Summary

- **What did we do first?**

- **Next?**

- **Next?**

Liferay Setup Summary

- **What we did first?**

  -       **Liferay-Tomcat bundle install**

- **Next?**

-   **MySQL and Tools**

- **Next?**

  -       **EXT Environment**