

# SSH 集成开发步骤 v1.0

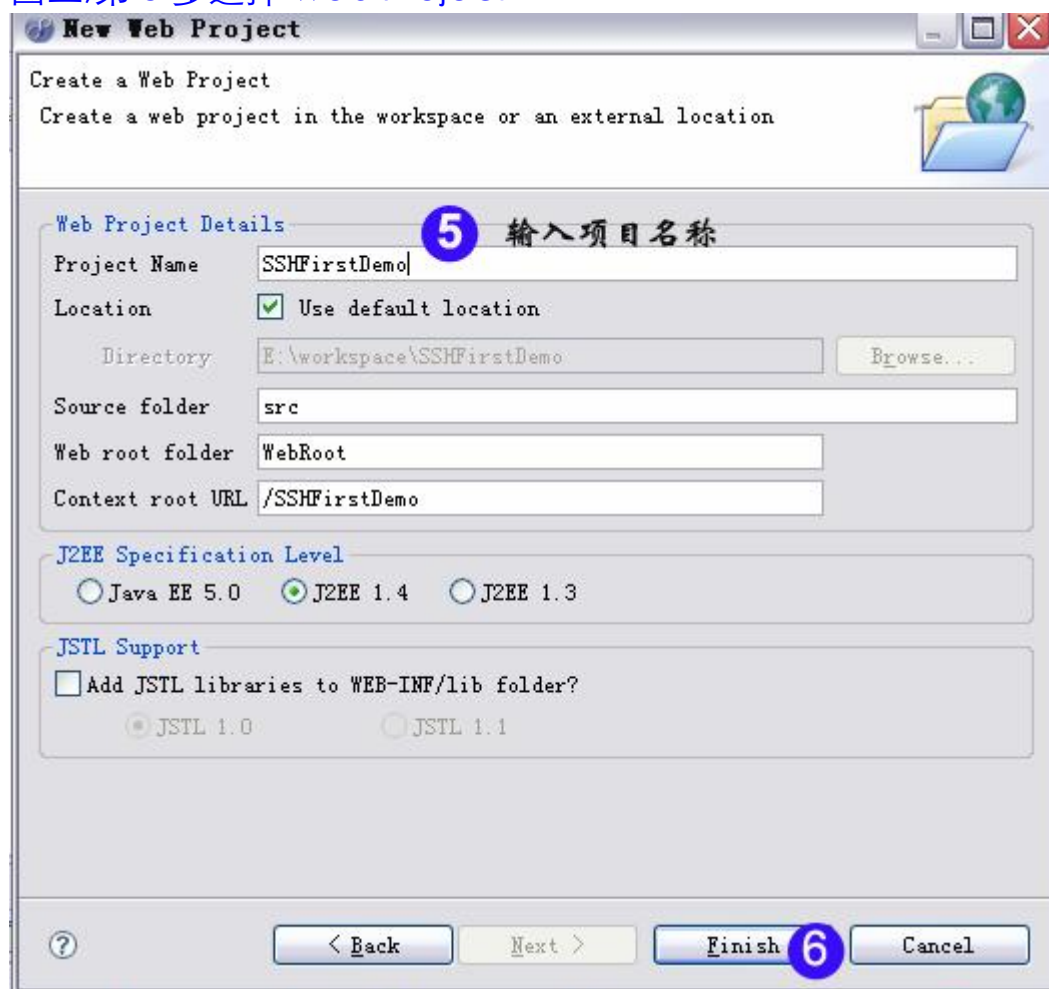
-----Chris 2008-11-5

# 目 录

- 1, [前言](#)
- 2, [软硬件](#)
- 3, [步骤一：建立 web project](#)
- 4, [步骤二：添加 struts 支持](#)
- 5, [步骤三：添加 spring 支持](#)
- 6, [步骤四：添加 hibernate 支持](#)
- 7, [步骤五：添加 dbcp 数据库支持 jar 包](#)
- 8, [步骤六：实现 DAO 的依赖注入](#)
- 9, [步骤七：实现 service 的依赖注入](#)
- 10, [步骤八：struts&spring 集成](#)
- 11, [步骤九：运行](#)
- 12, [附录](#)

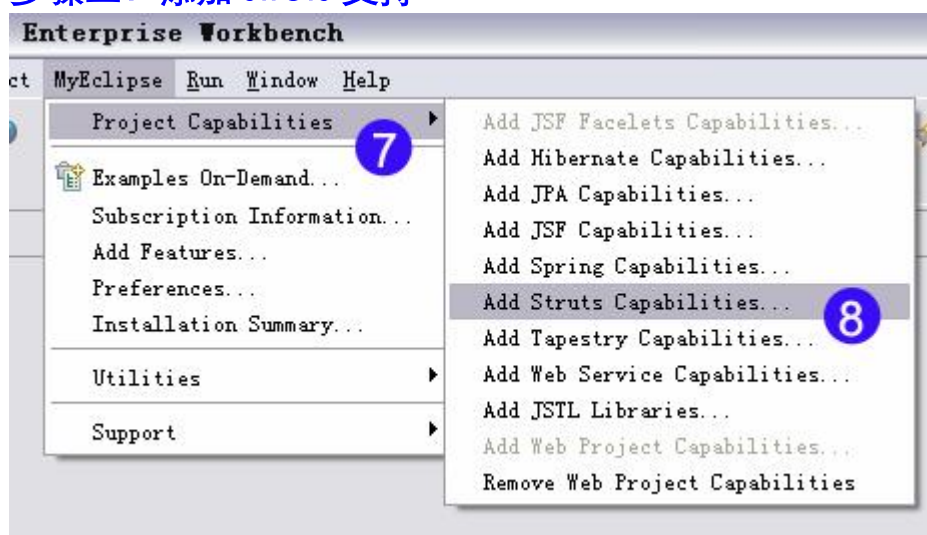


图二,第 3 步选择 web Project

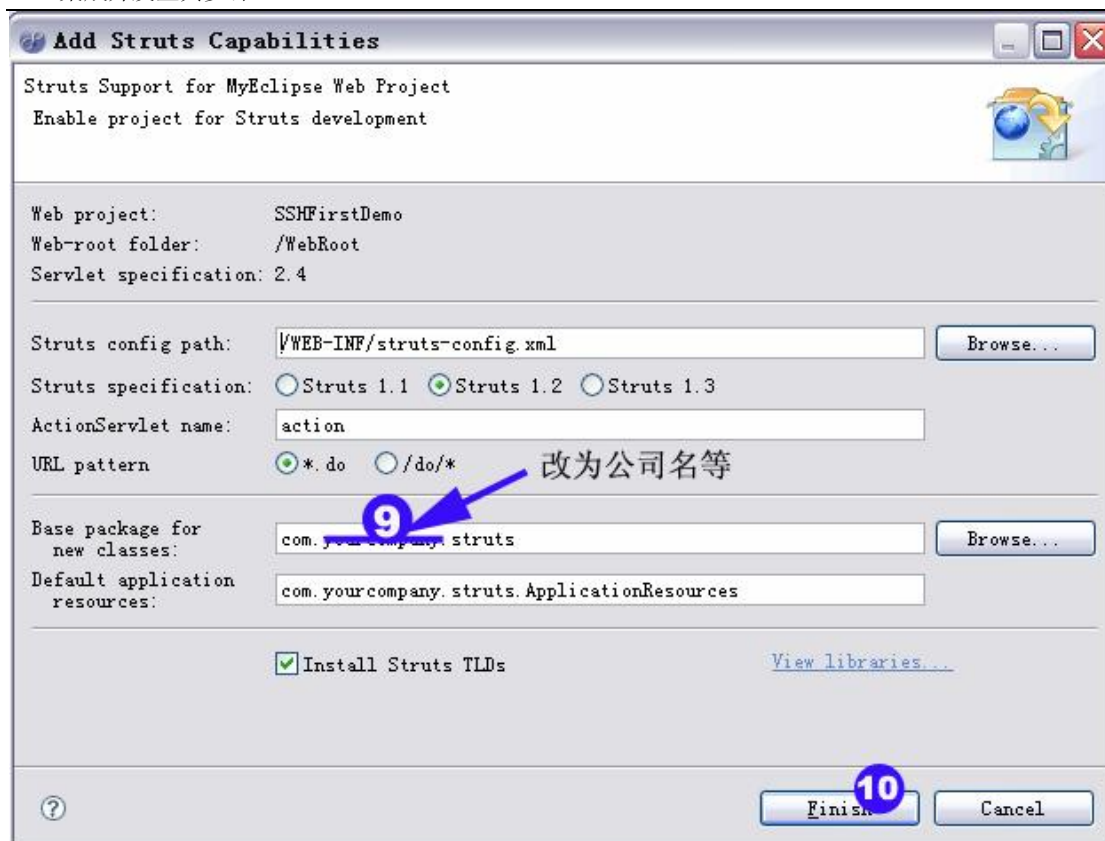


图三,输入项目名, 点 Finish 完成。

## 步骤二: 添加 struts 支持

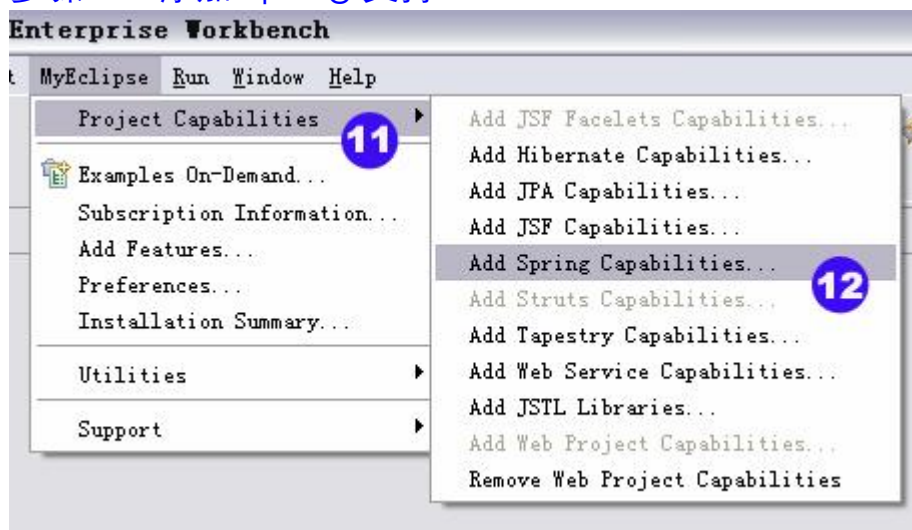


图四, project Capabilities à Add Struts Capabilities...

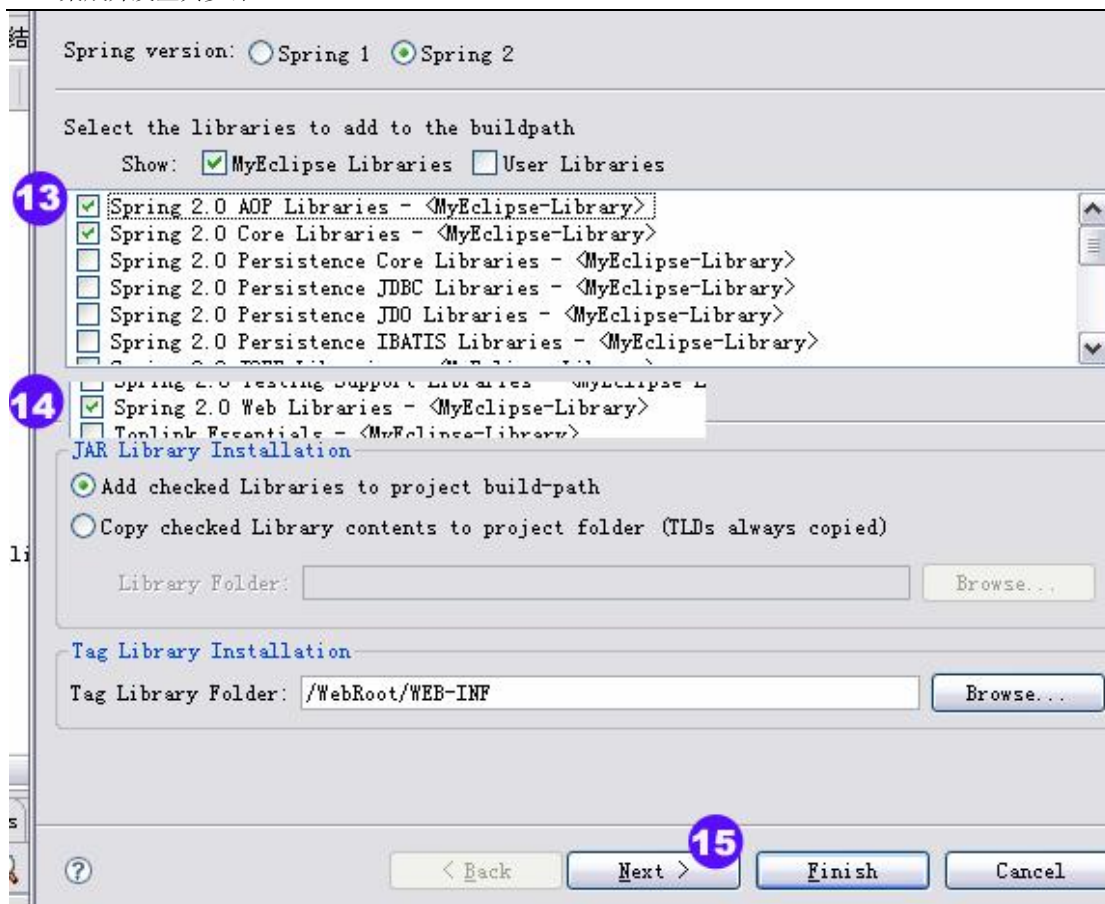


图五

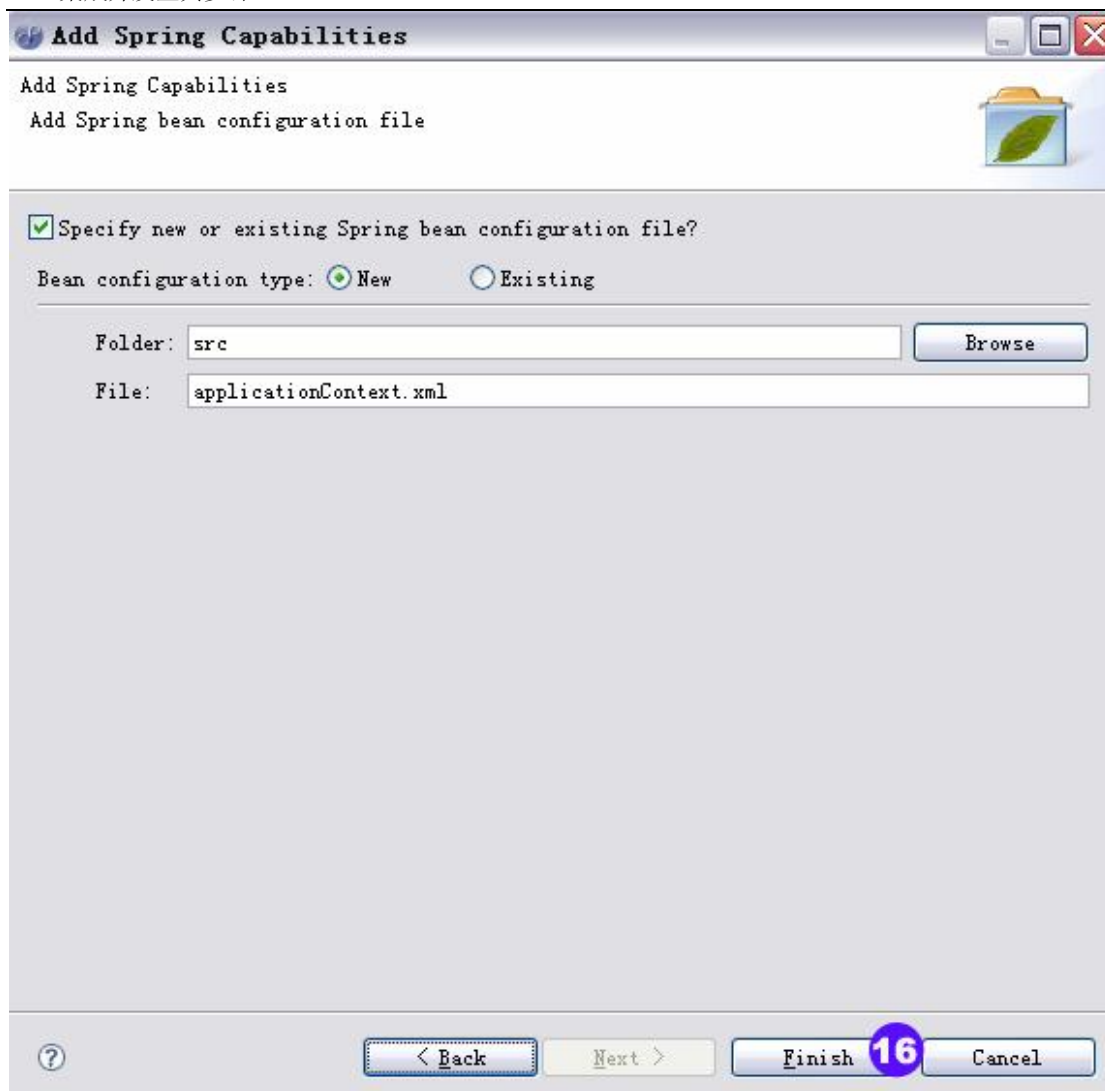
## 步骤三：添加 Spring 支持



图六



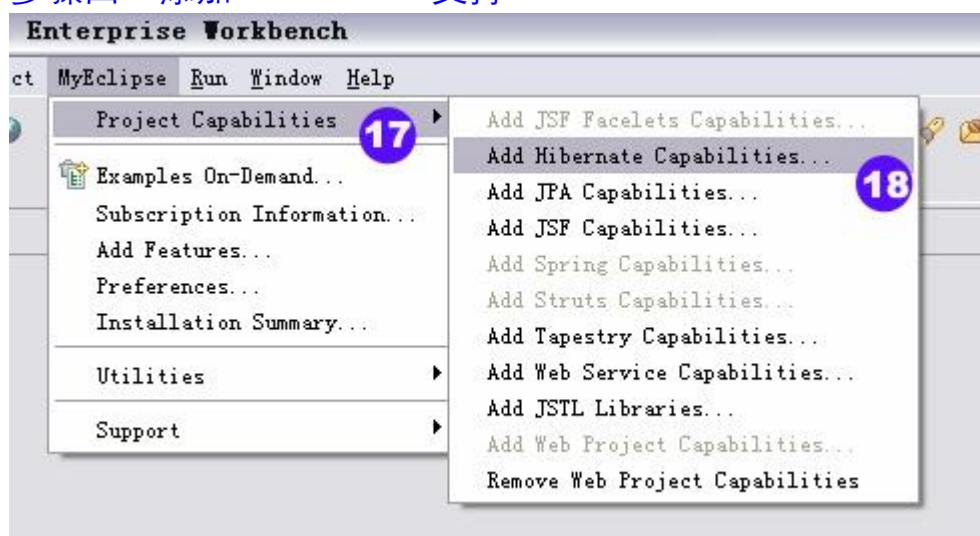
图七，第 14 步勾选 Spring 2.0 Web Libraries 来支持 web 项目，如果使用 AOP 技术则勾选 spring 2.0 AOP Libraries.



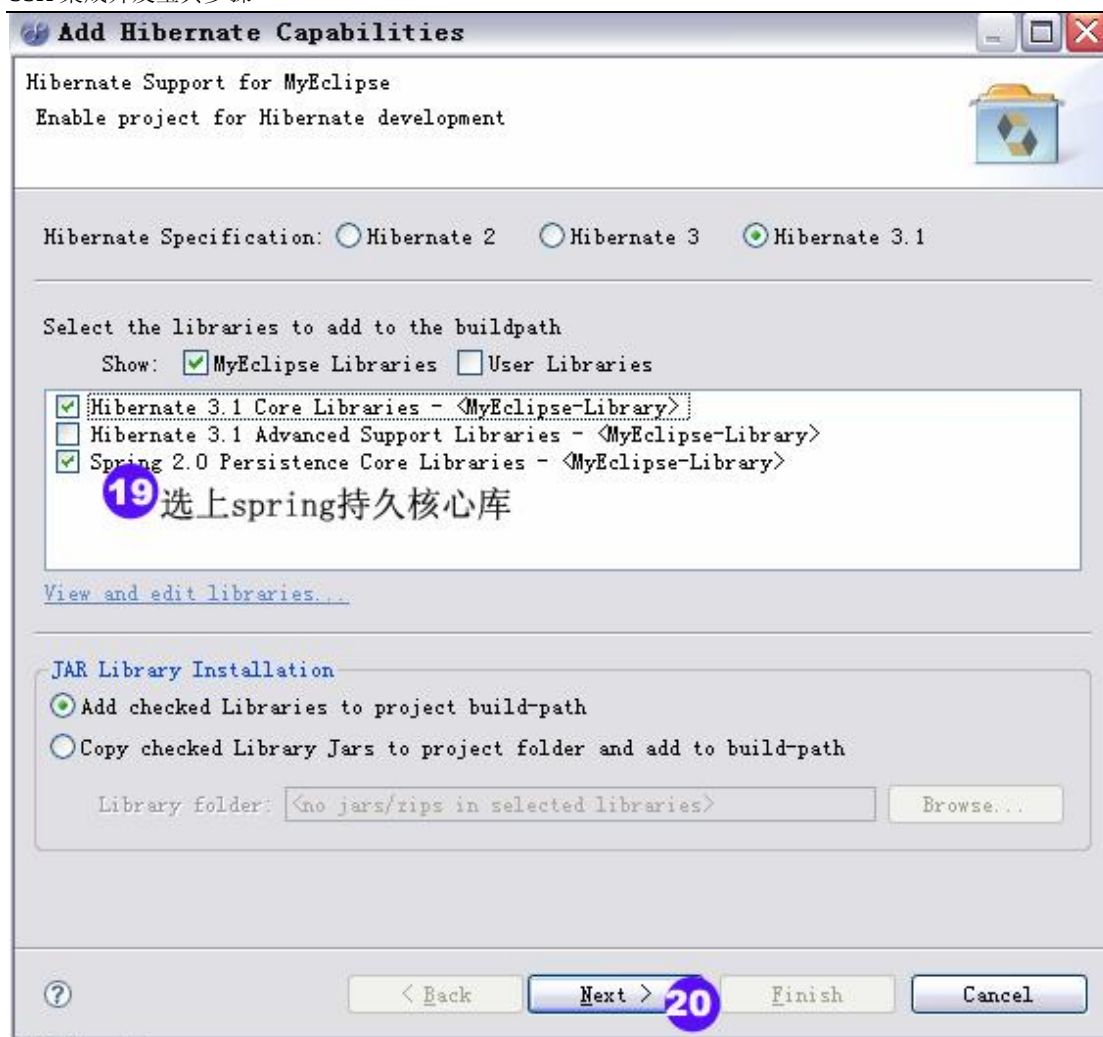
图八，点击 Finish 按钮，完成 Spring 支持的添加。

执行步骤四之前，请先按照附录来设置好数据库驱动。

步骤四：添加 Hibernate 支持



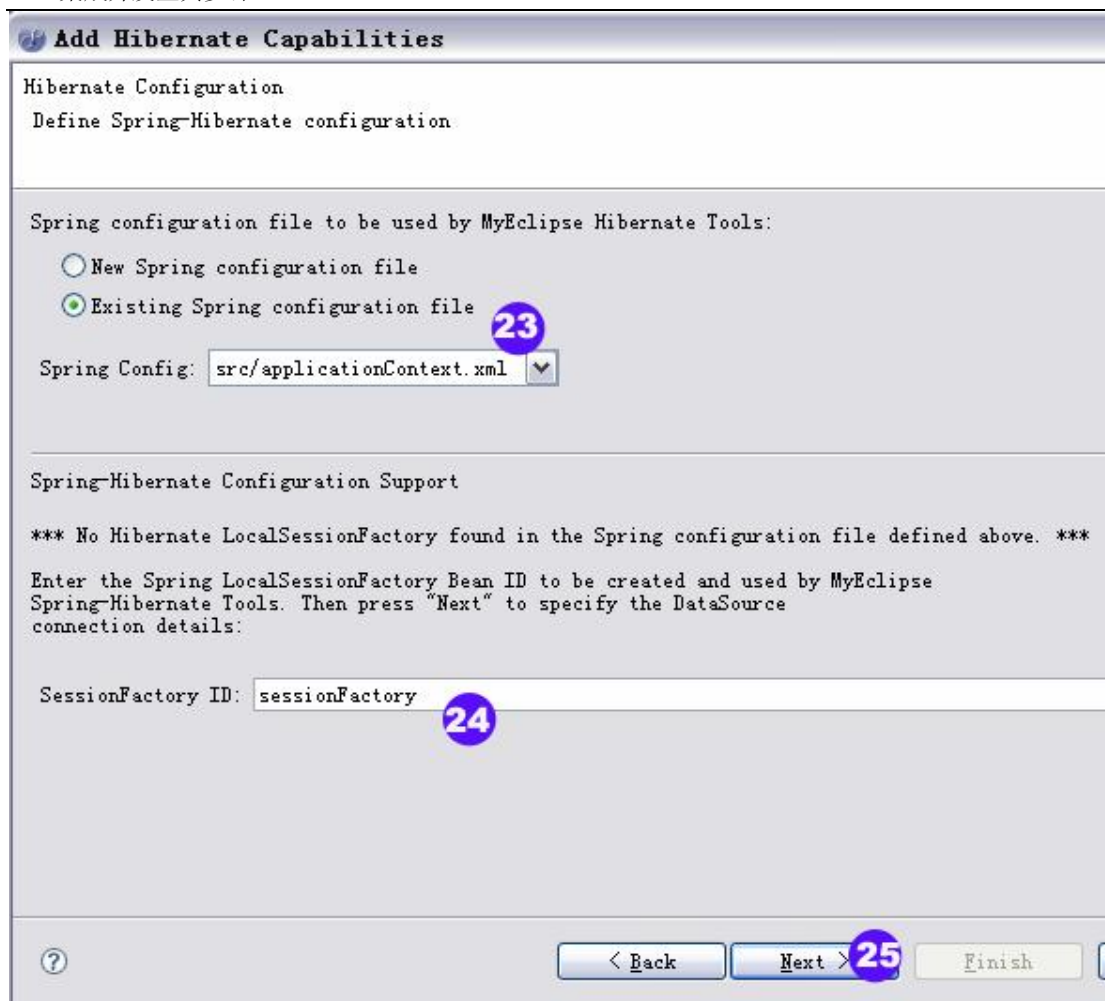
图九



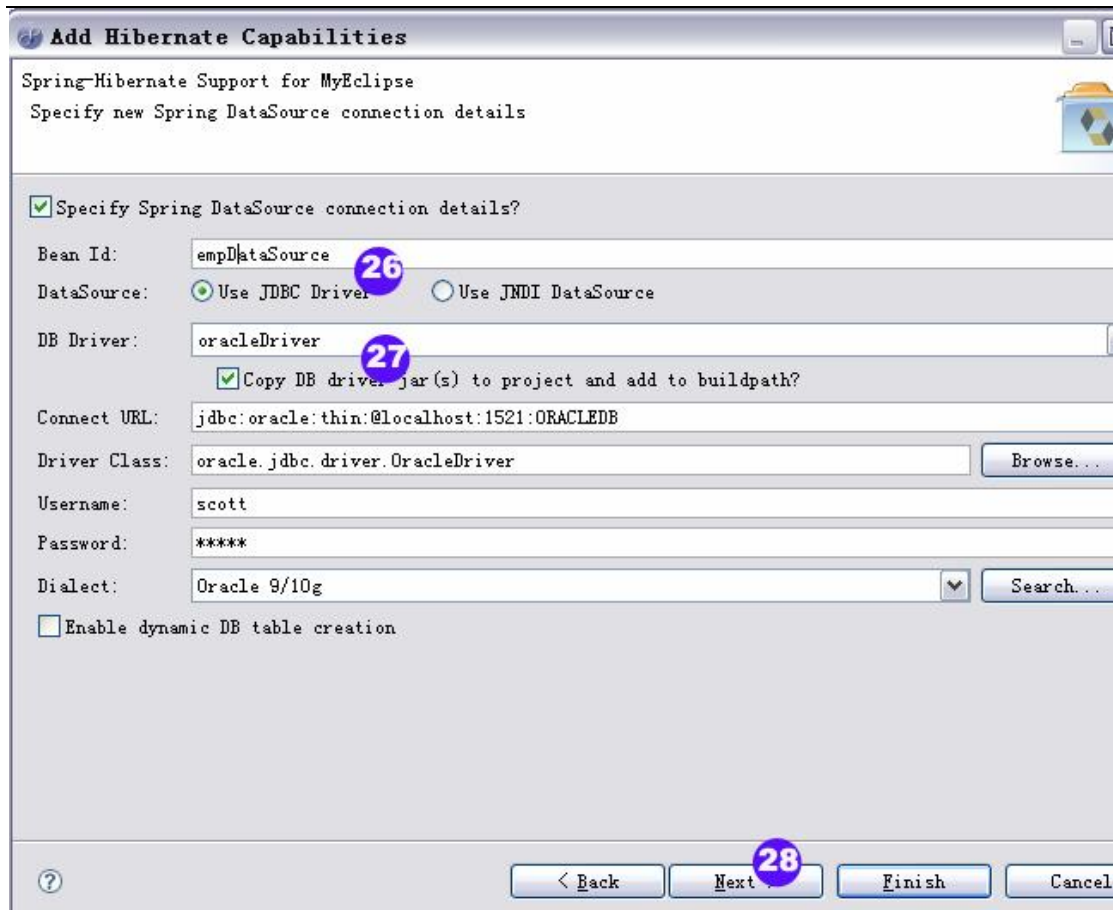
图十，第 19 步选择 spring 持久核心库



图十一，选中 Spring configuration file，由 Spring 的上下文配置文件来管理 Hibernate。

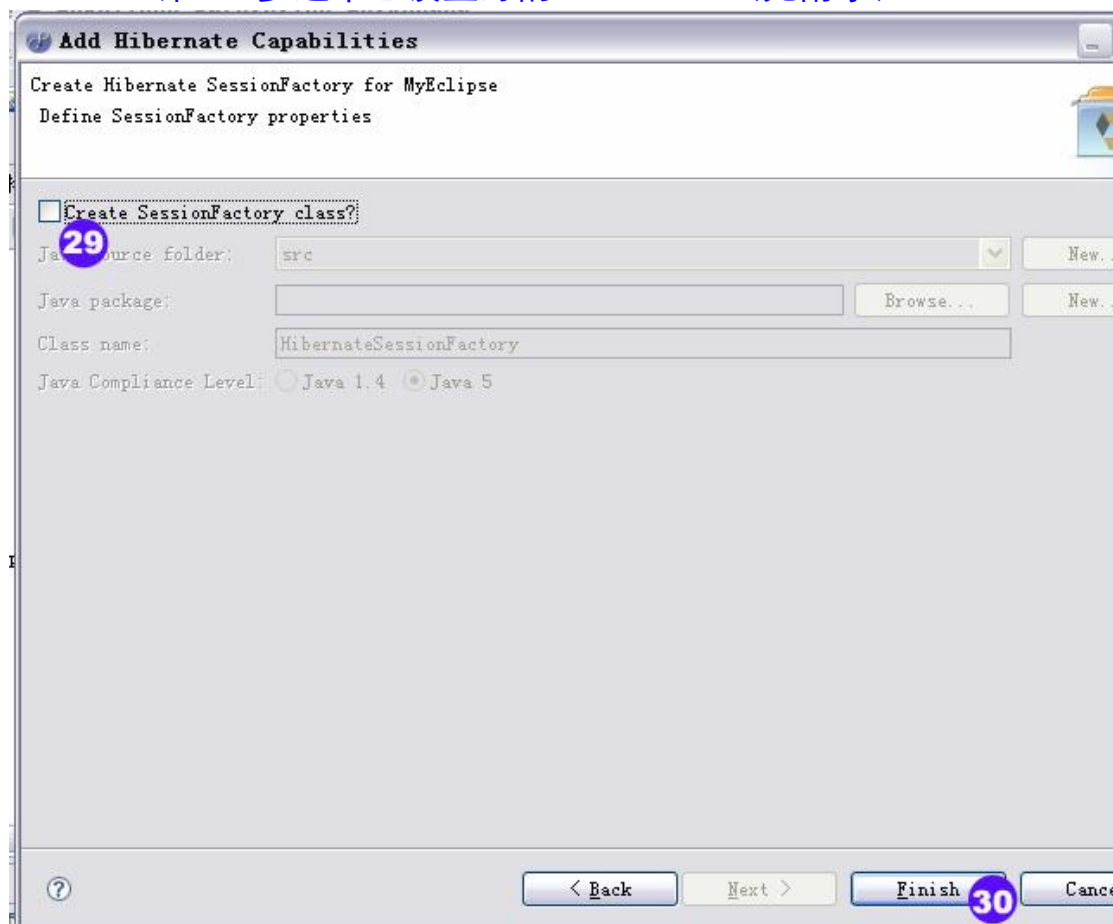


图十二，第 23 步选择已经在前面配置好的 Spring 上下文；  
第 24 步自定义一个 SessionFactory 对象名；



图十三，第 26 步自定义一个 DataSource 对象名

第 27 步选中已设置好的 DB Driver（见附录）。



图十四，第 29 步取消 HibernateSessionFactory.由 Spring 来管理 sessionFactory.

步骤五，添加 dbcp 数据库支持 jar 包

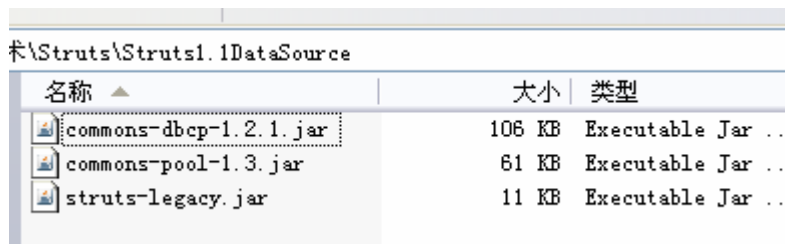


```

*applicationContext.xml
4  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
5  xsi:schemaLocation="http://www.springframework.org/schema
6
7
8  <bean id="empDataSource"
9    class="org.apache.commons.dbcp.BasicDataSource">
10    <property name="driverClassName"
11      value="oracle.jdbc.driver.OracleDriver">
12    </property>
13    <property name="url"
14      value="jdbc:oracle:thin:@localhost:1521:ORACLEDB">
15    </property>
16    <property name="username" value="scott"></property>
17    <property name="password" value="tiger"></property>
18  </bean>

```

图十五，添加完三个框架支持后，在 Spring 的上下文配置文件 applicationContext.xml 中有一个 class 'org.apache.commons.dbcp.BasicDataSource' not found 错误。

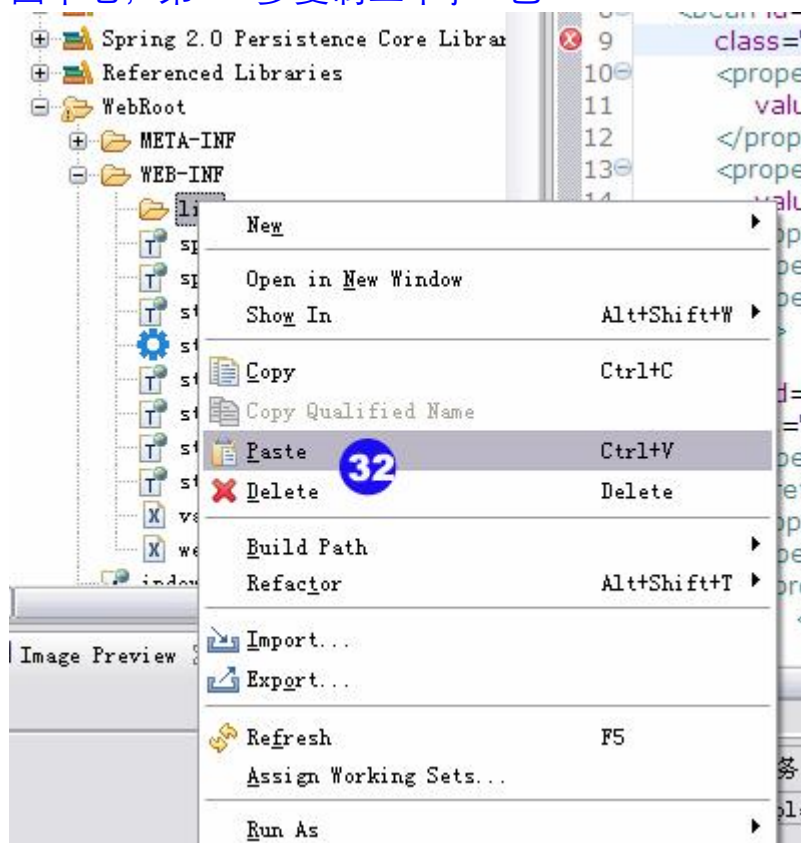


| 名称                    | 大小     | 类型                |
|-----------------------|--------|-------------------|
| commons-dbc-1.2.1.jar | 106 KB | Executable Jar .. |
| commons-pool-1.3.jar  | 61 KB  | Executable Jar .. |
| struts-legacy.jar     | 11 KB  | Executable Jar .. |

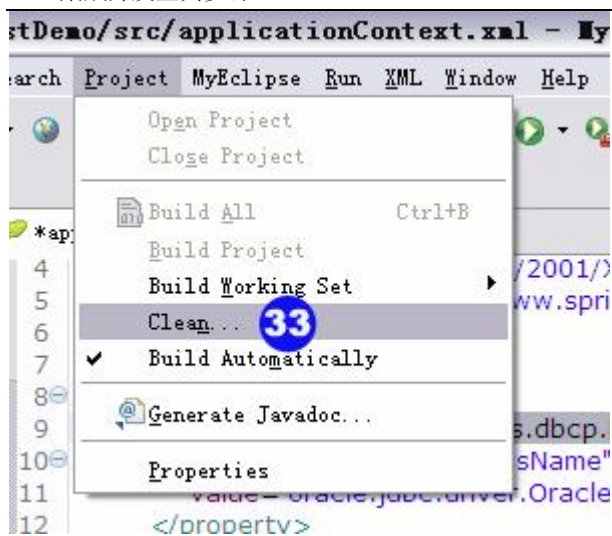
图十六，



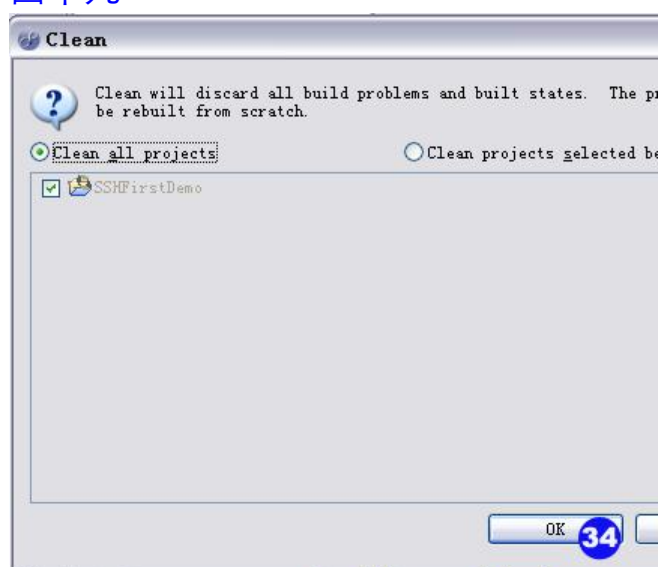
图十七，第 31 步复制三个 jar 包



图十八，第 32 步将三个 jar 包粘贴在 /WEB-INF/lib 中



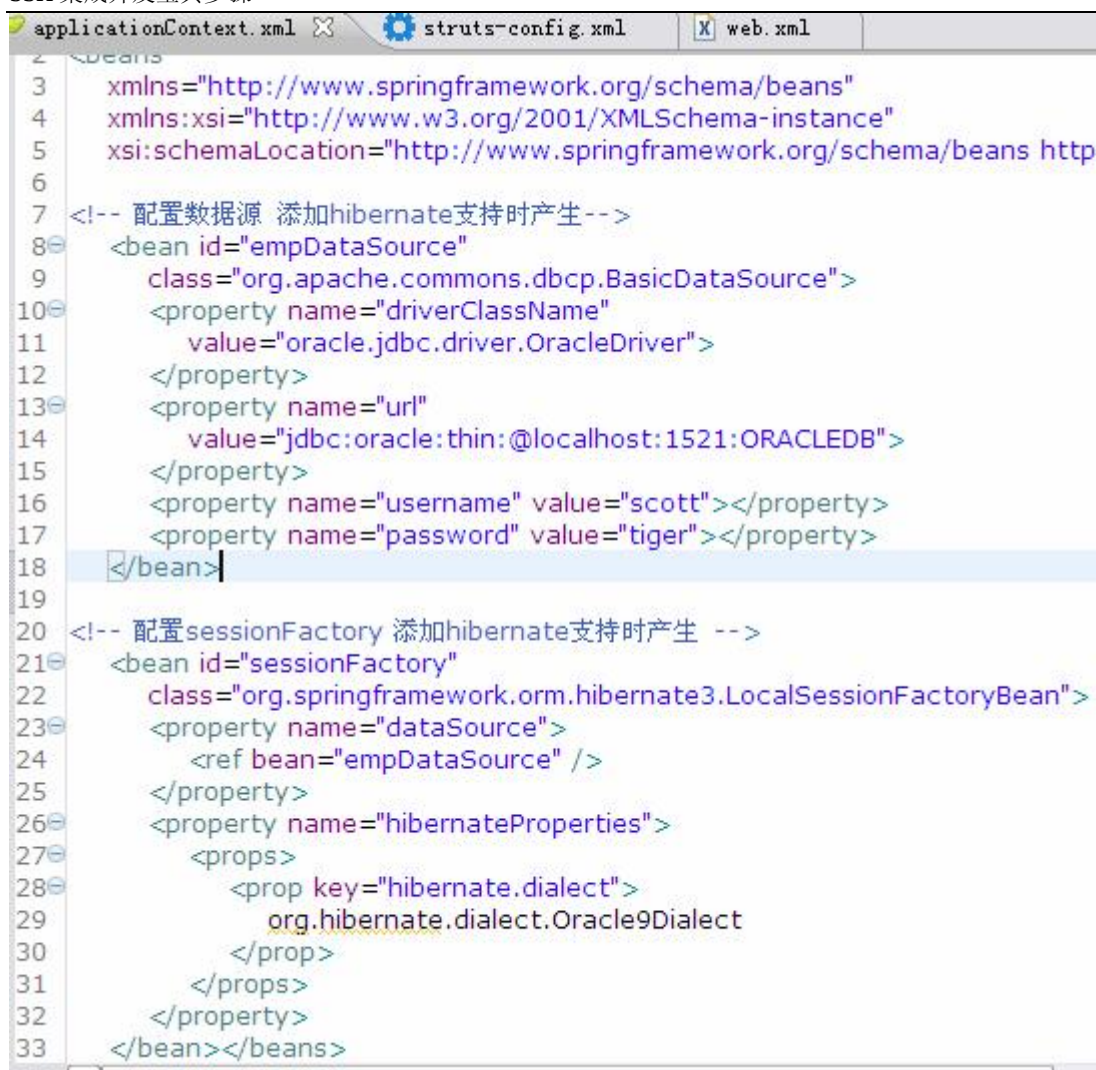
图十九



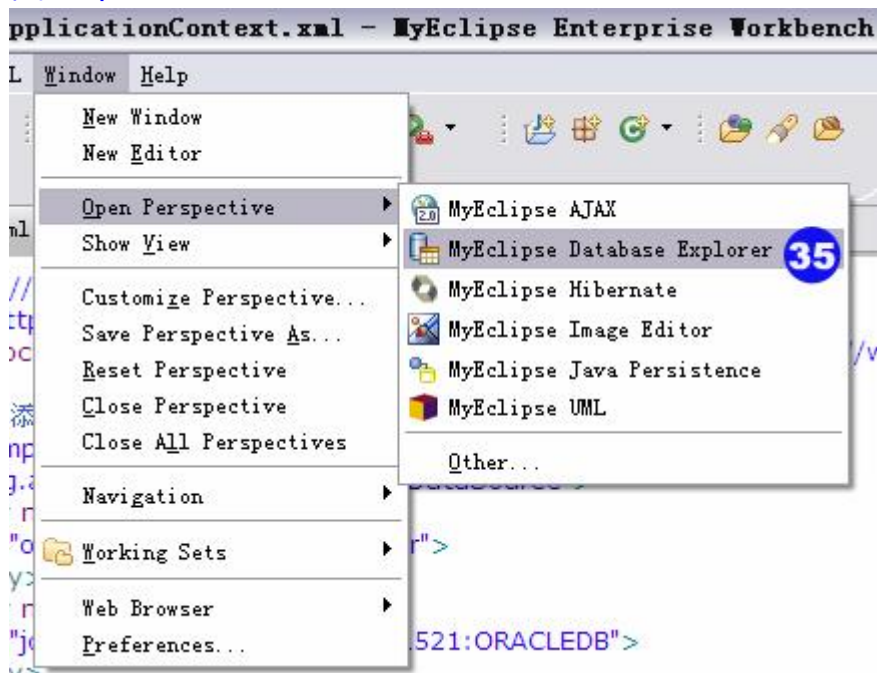
图二十，

### 步骤六：实现 DAO 的注入

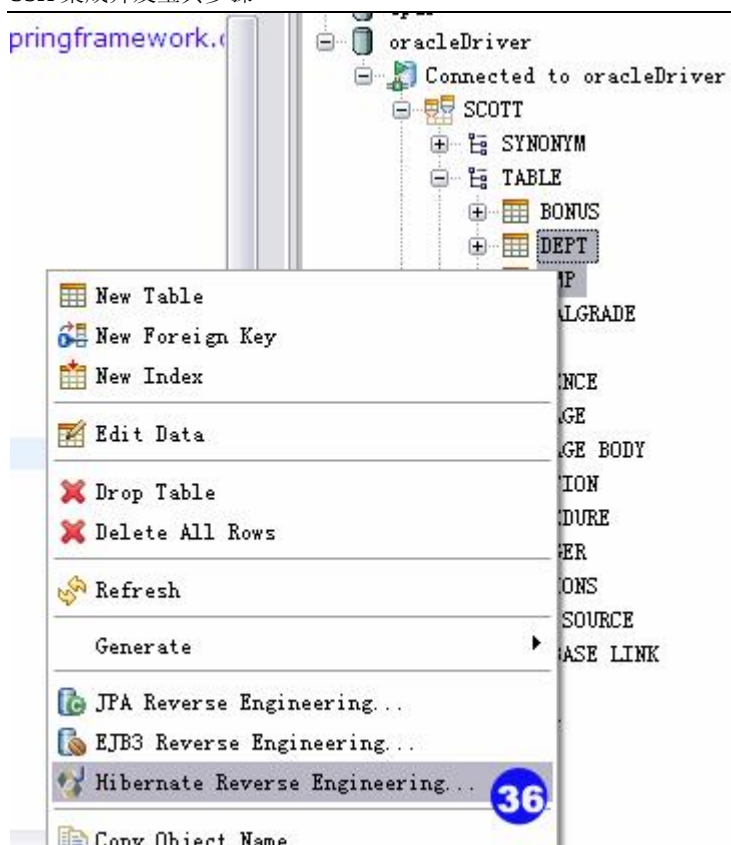
在步骤四添加 Hibernate 支持时在 Spring 上下文配置文件 applicationContext.xml 中，配置了数据源和 sessionFactory。



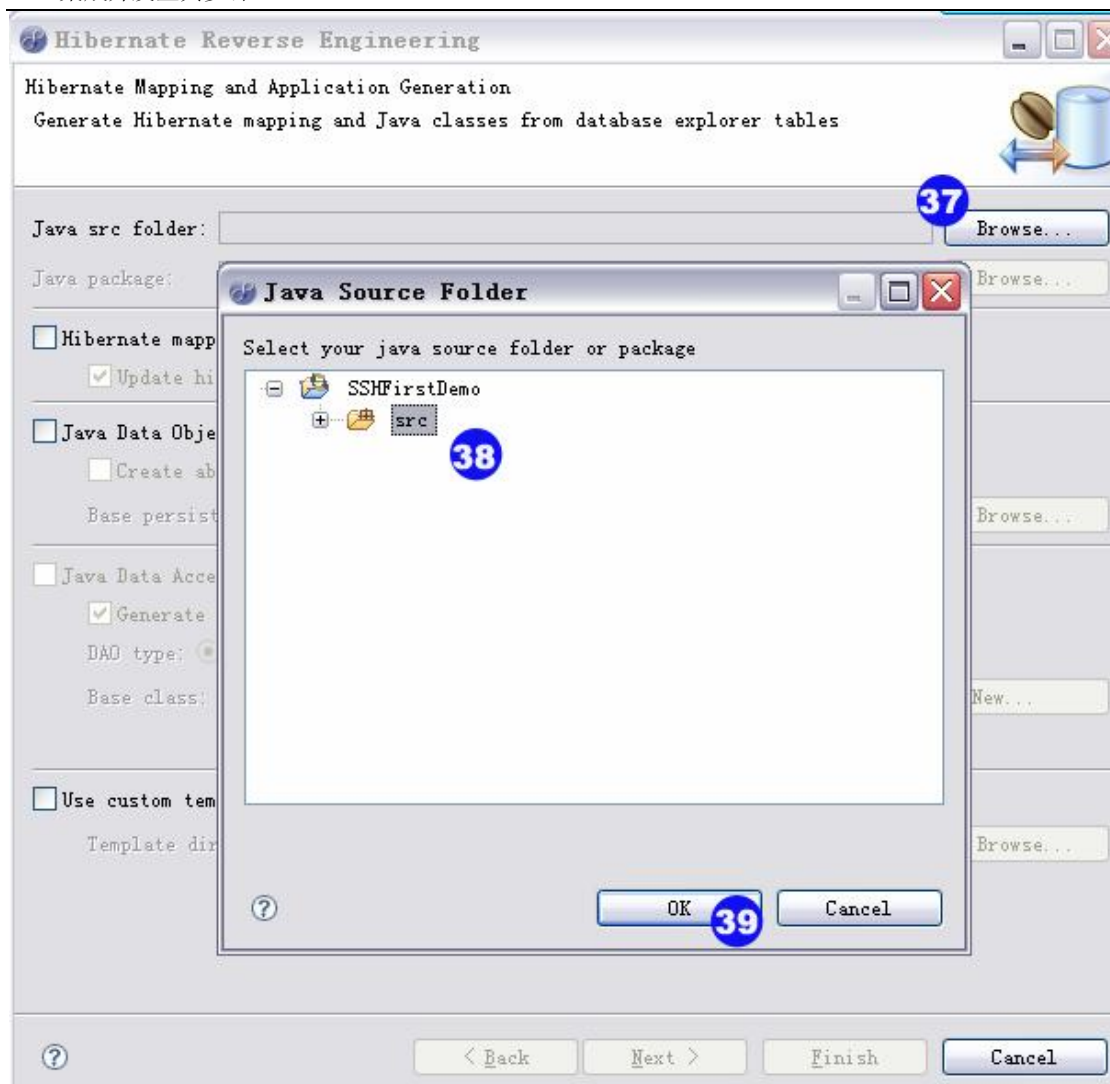
图二十一



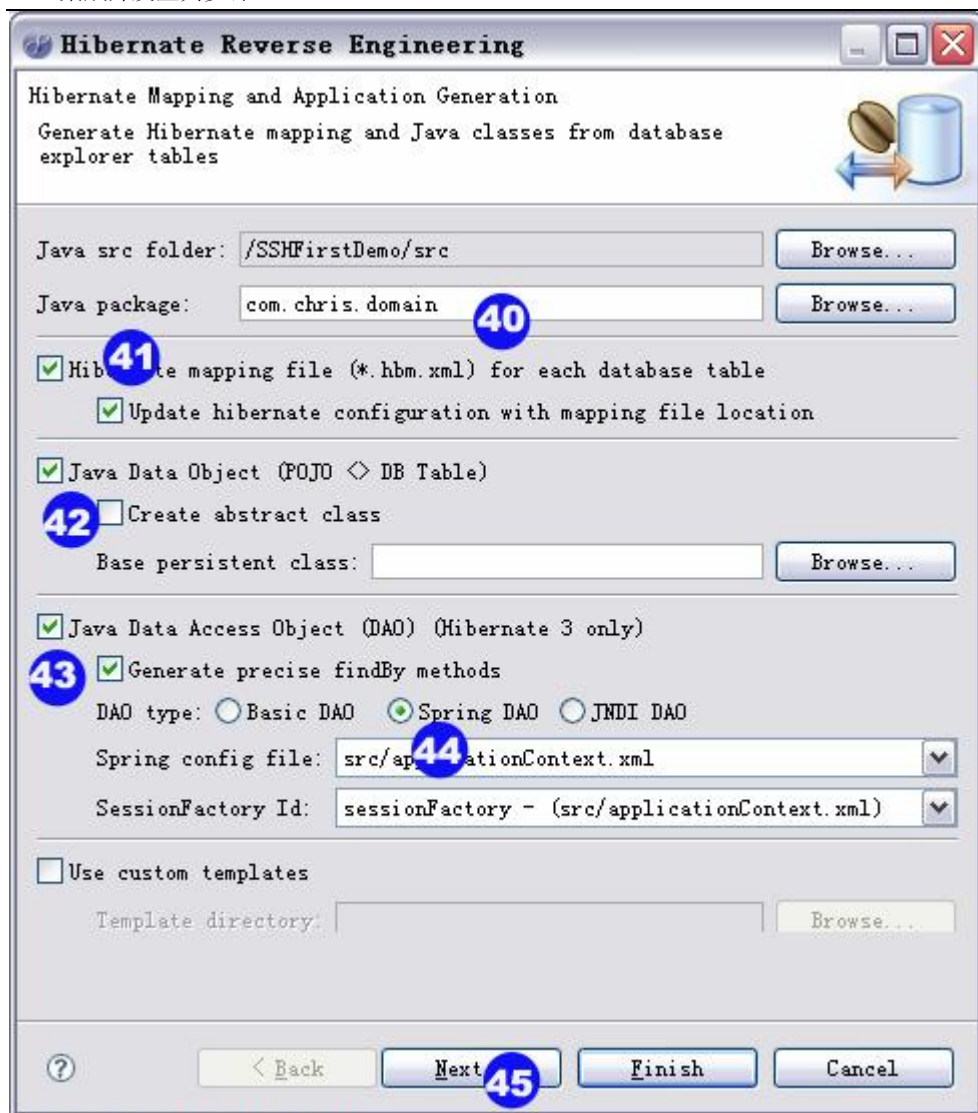
图二十二,



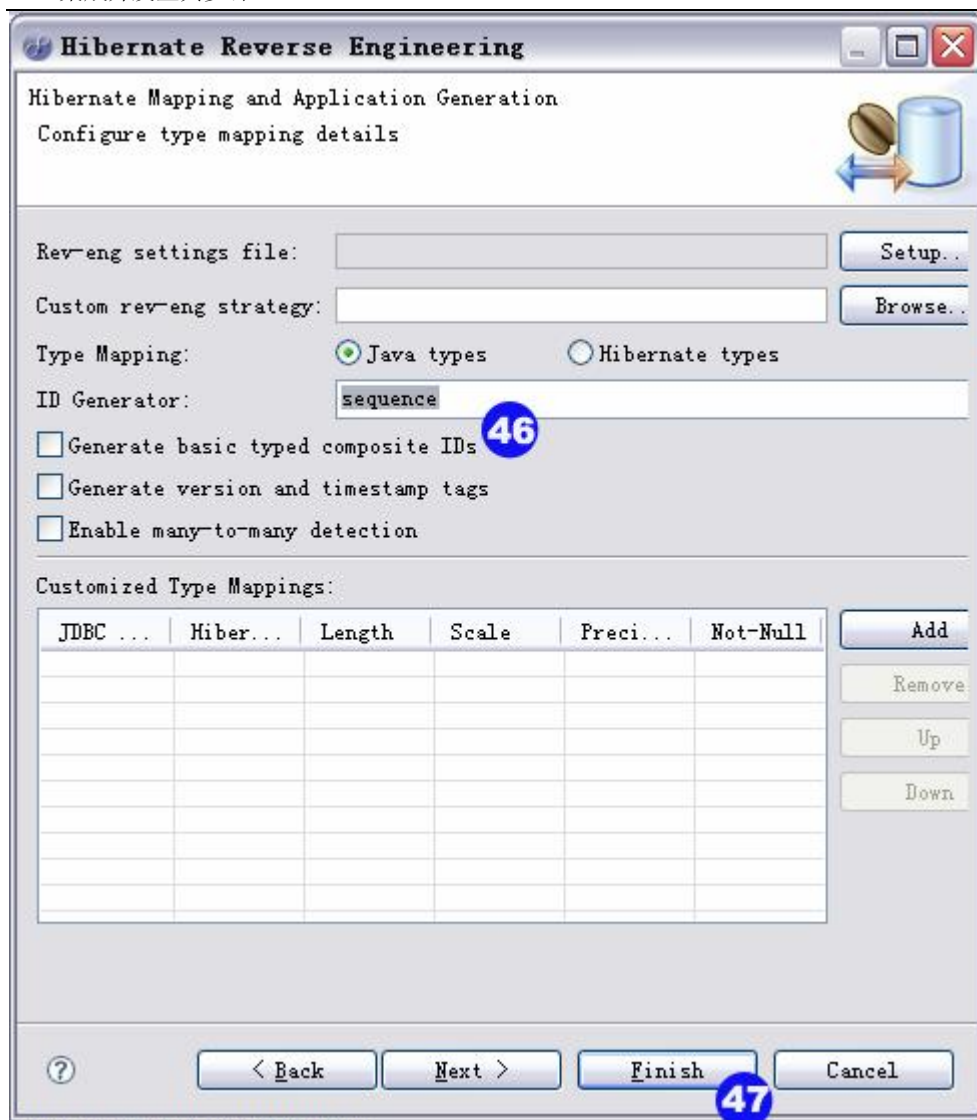
图二十三



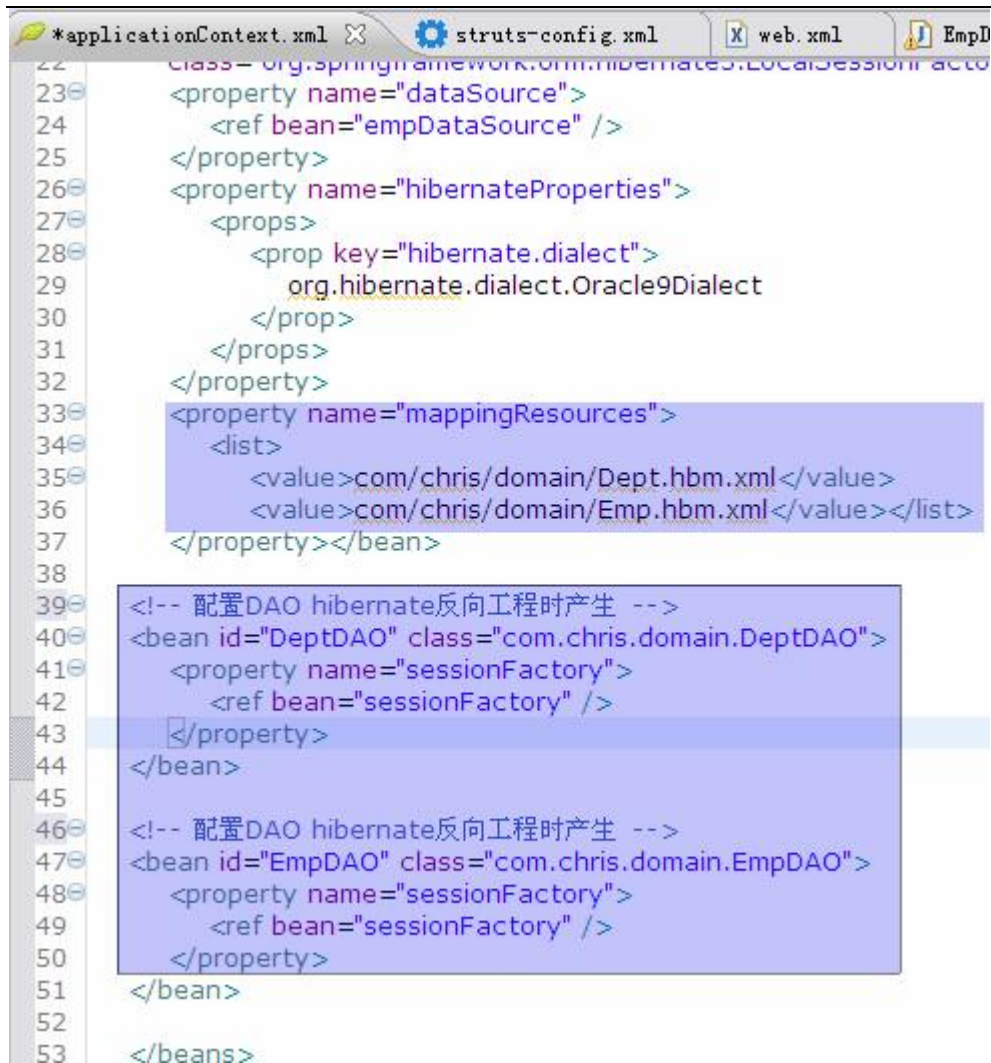
图二十四



图二十五

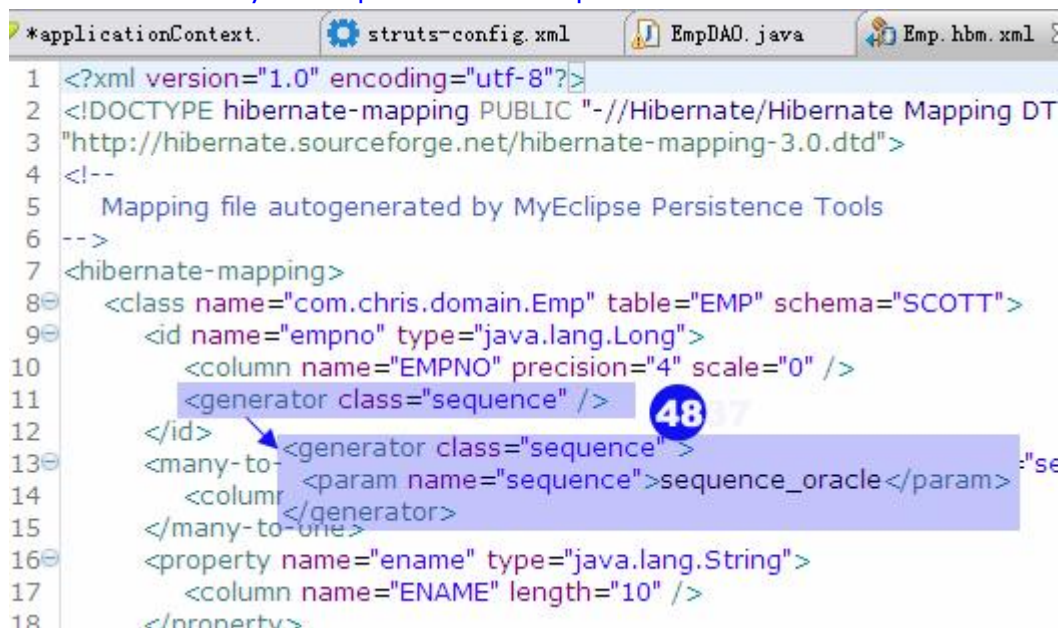


图二十七

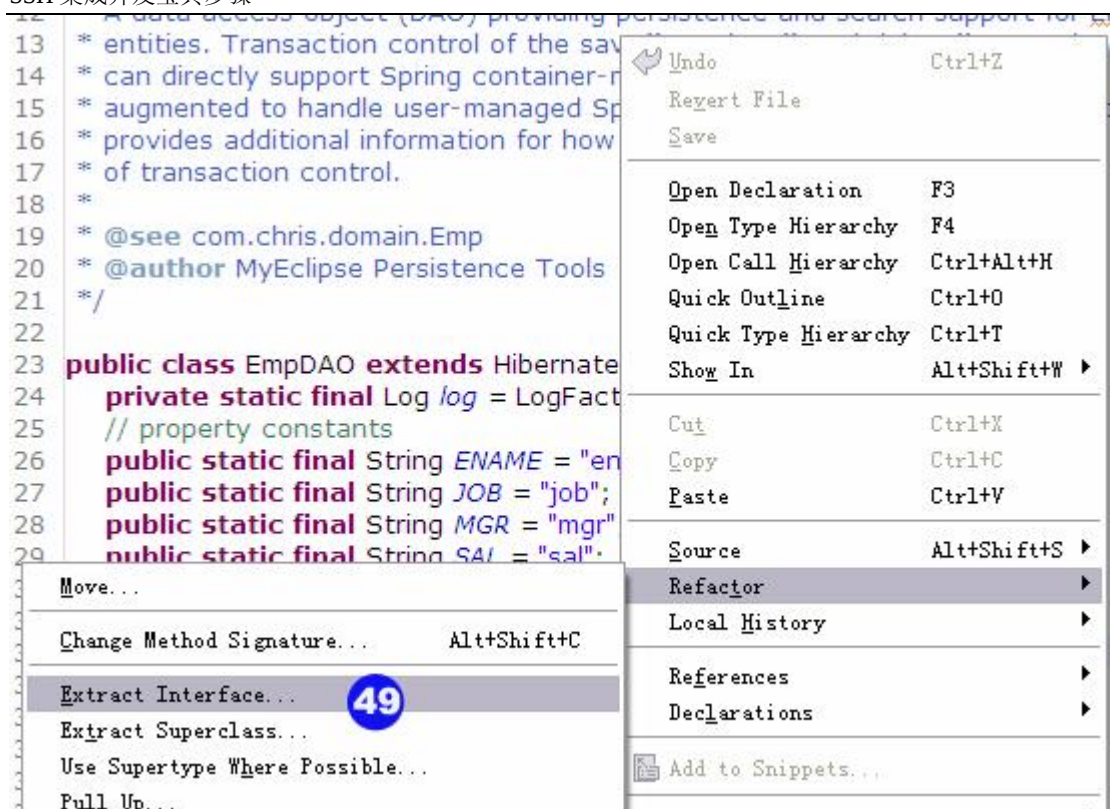


图二十八

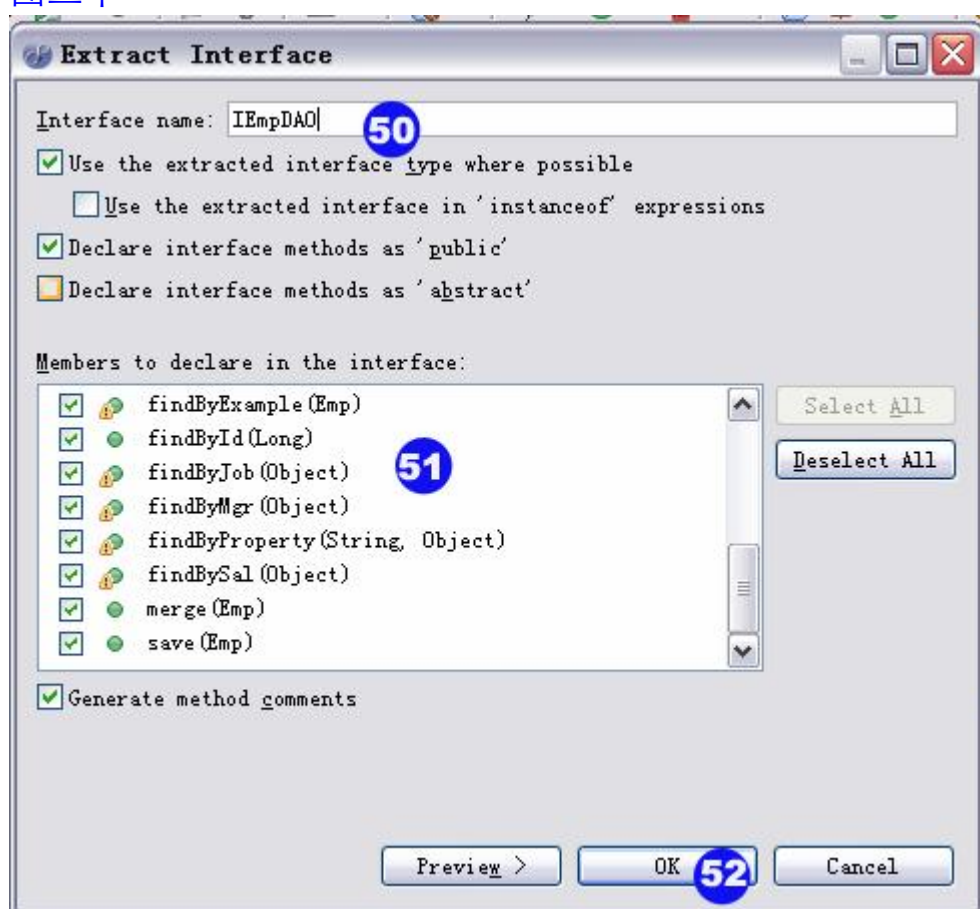
此时 `applicationContext.xml` 中以有四个 bean。分别是 `datasource`、`sessionFactory`、`DeptDAO`、`EmpDAO`。



图二十九

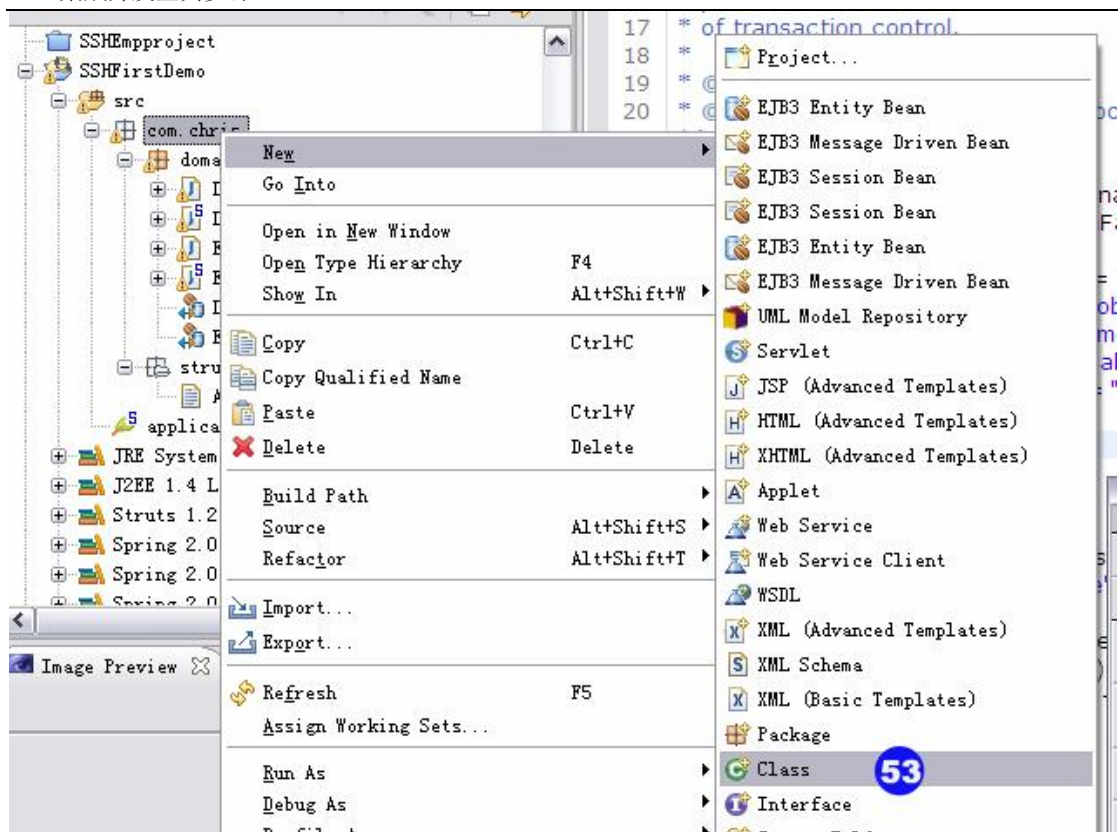


图三十



图三十一

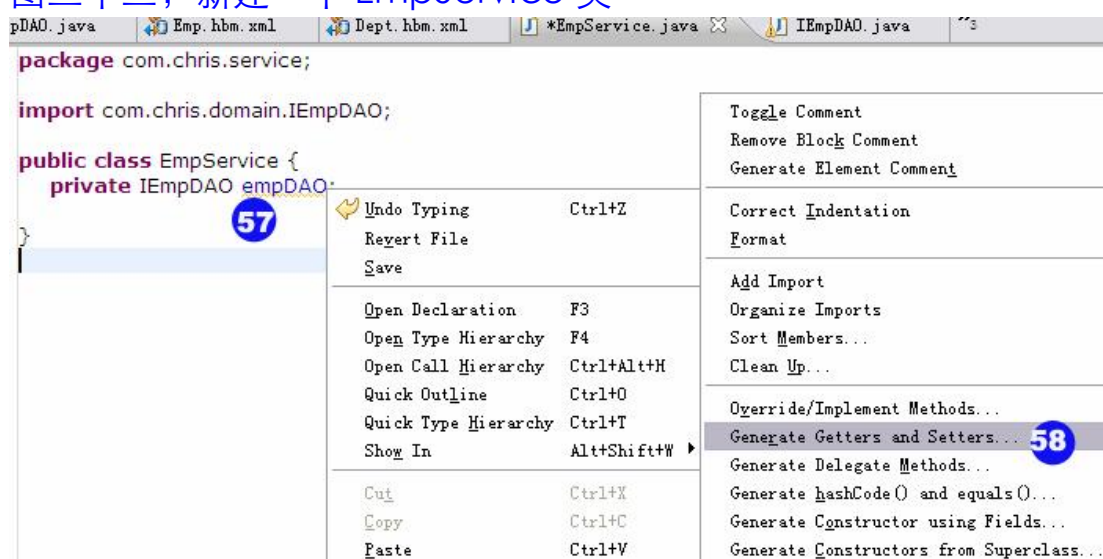
步骤七：实现 service 的注入



图三十二



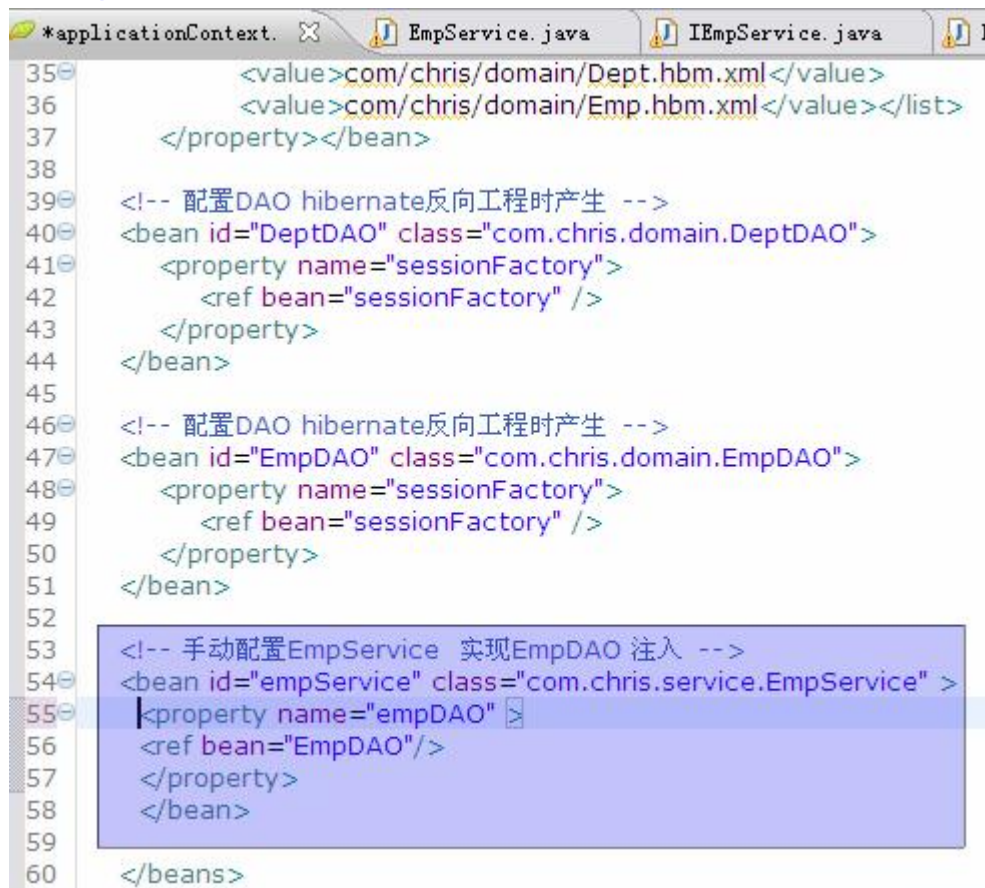
图三十三，新建一个 EmpService 类



图三十四

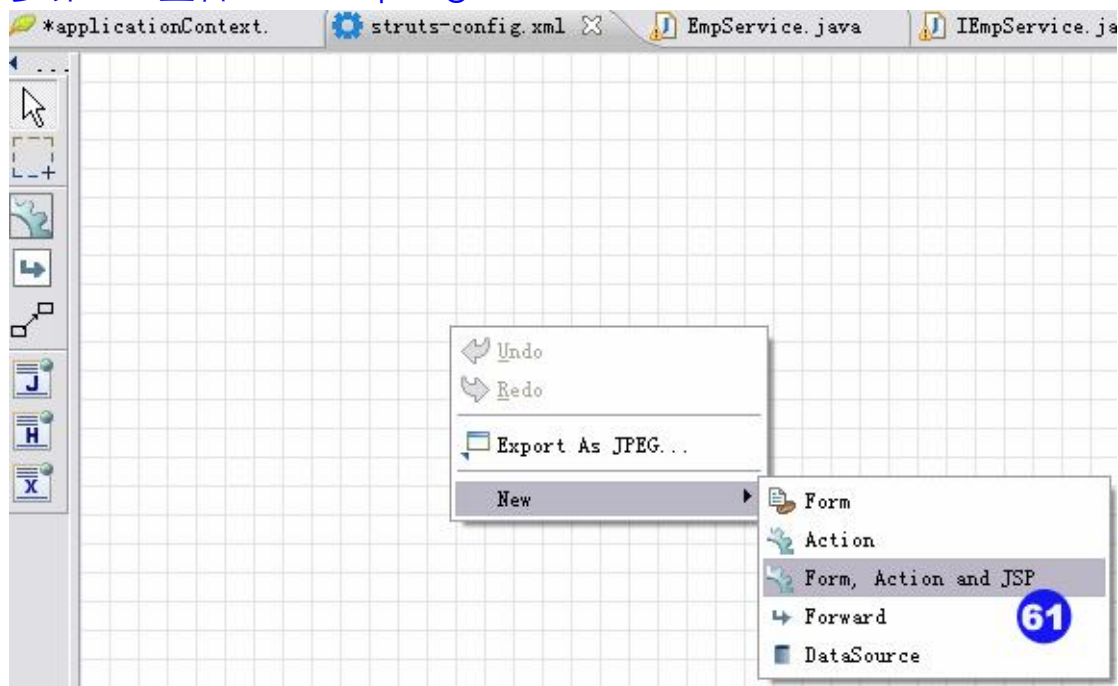


图三十五

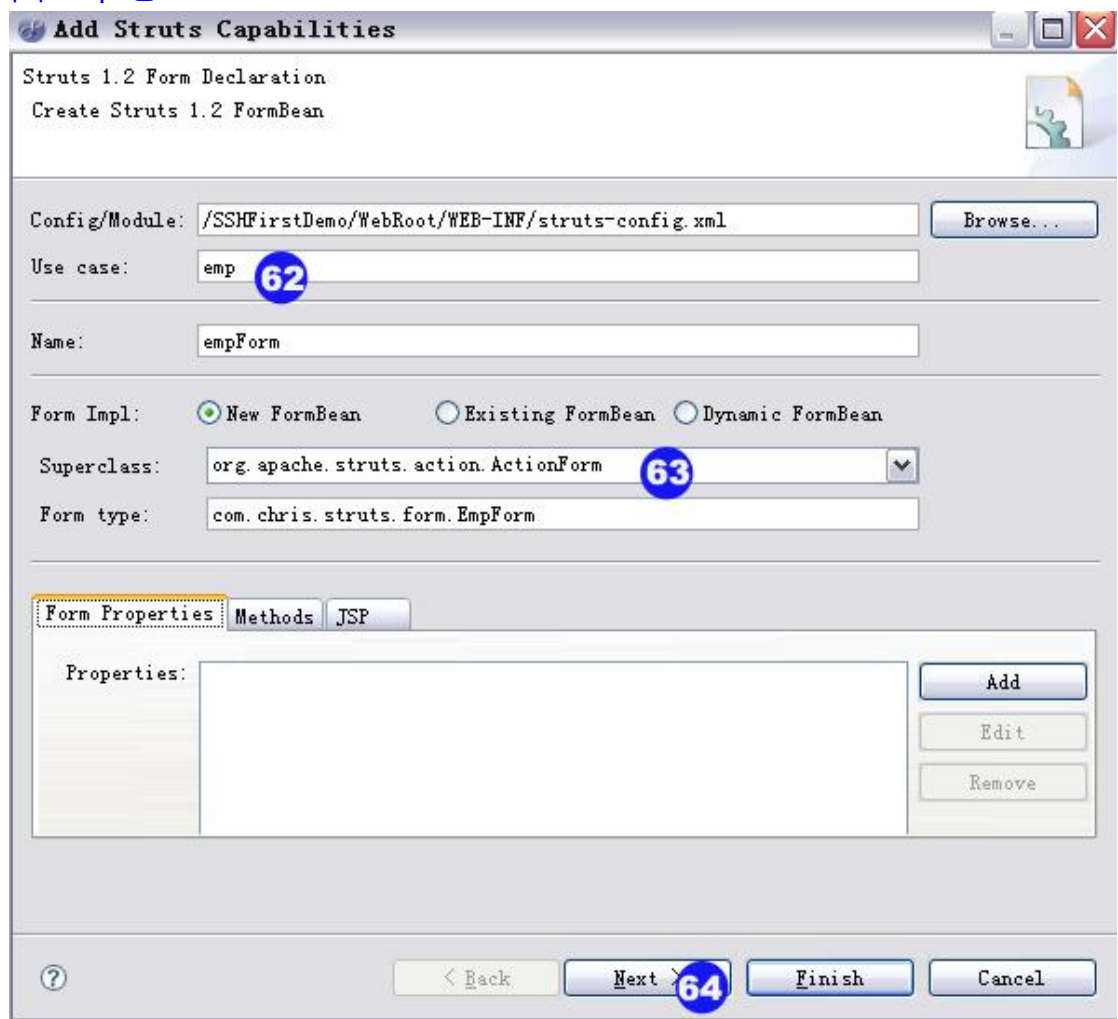


图三十六

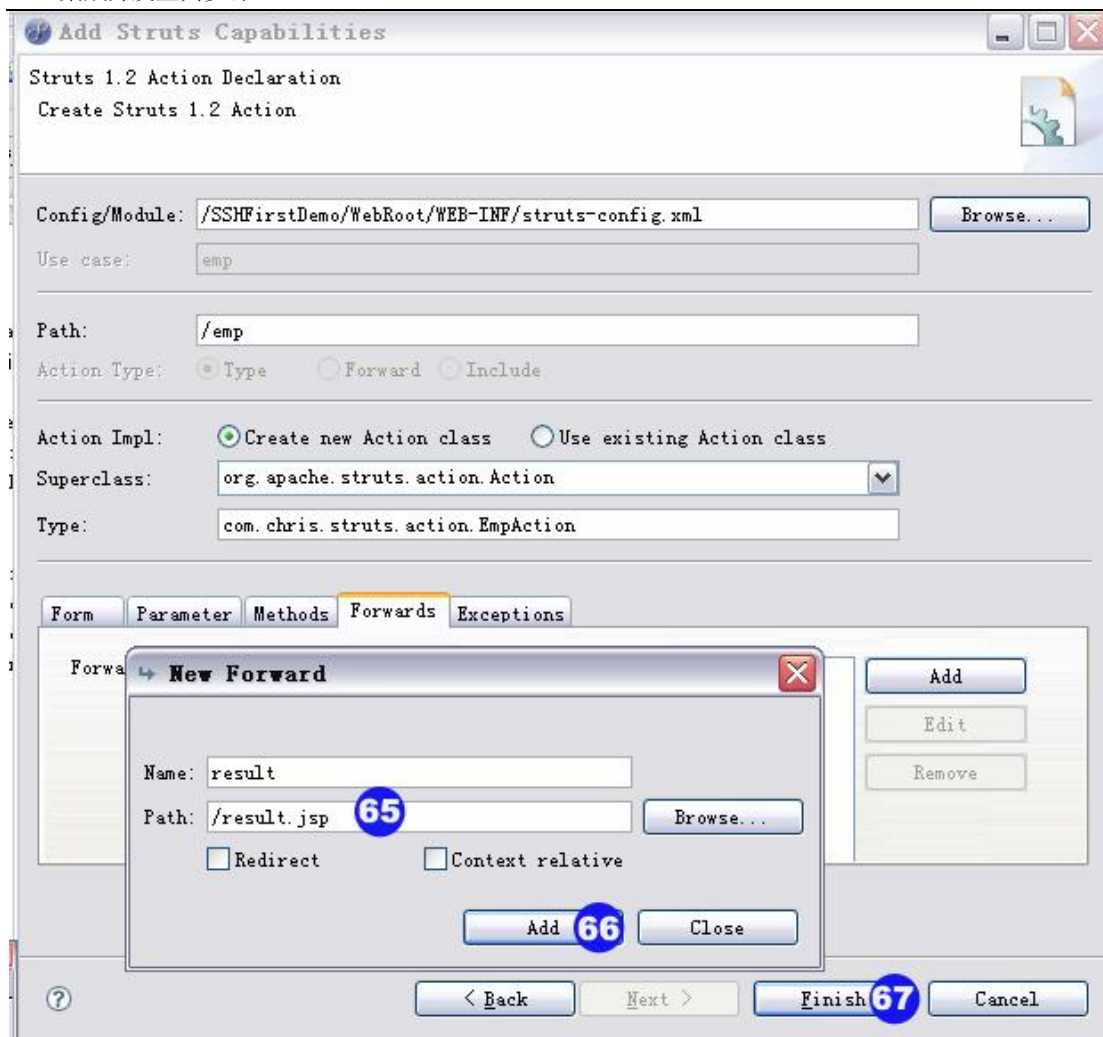
## 步骤八：整合 struts&amp;Spring



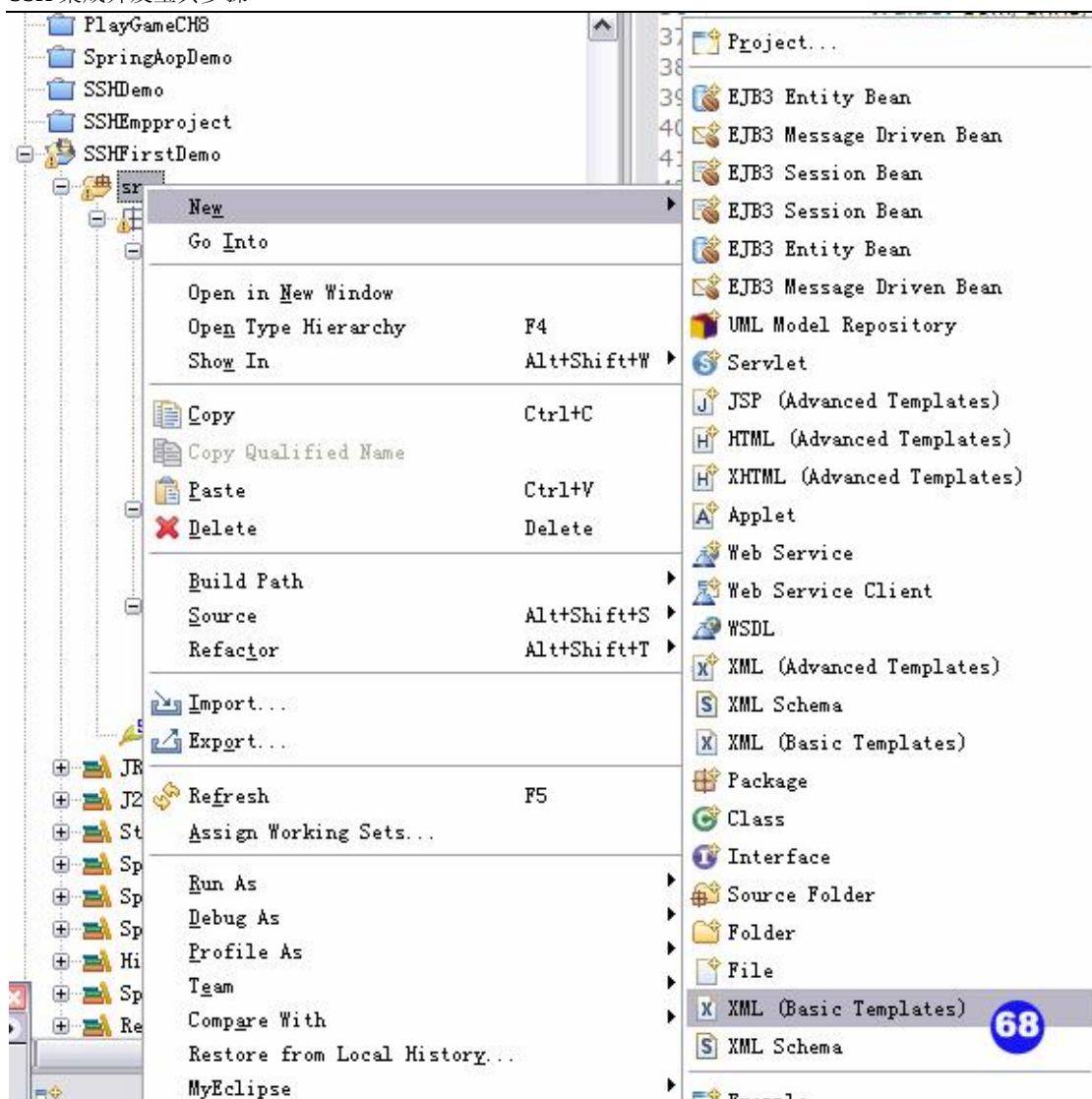
图三十七



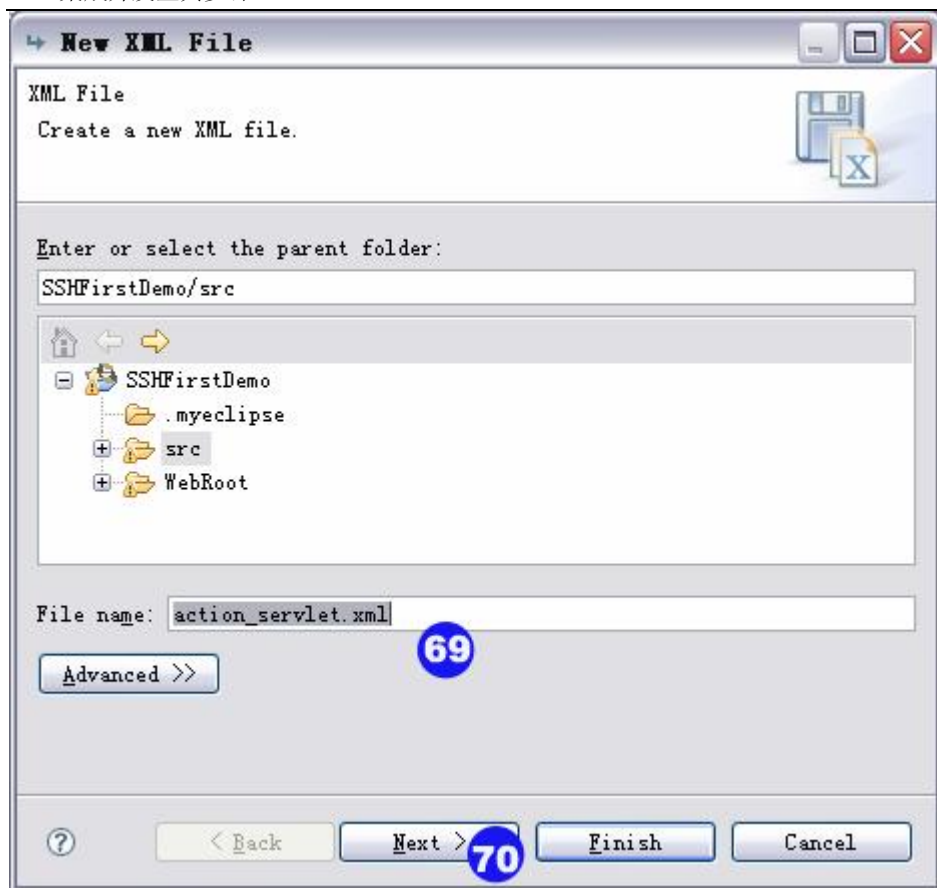
图三十八



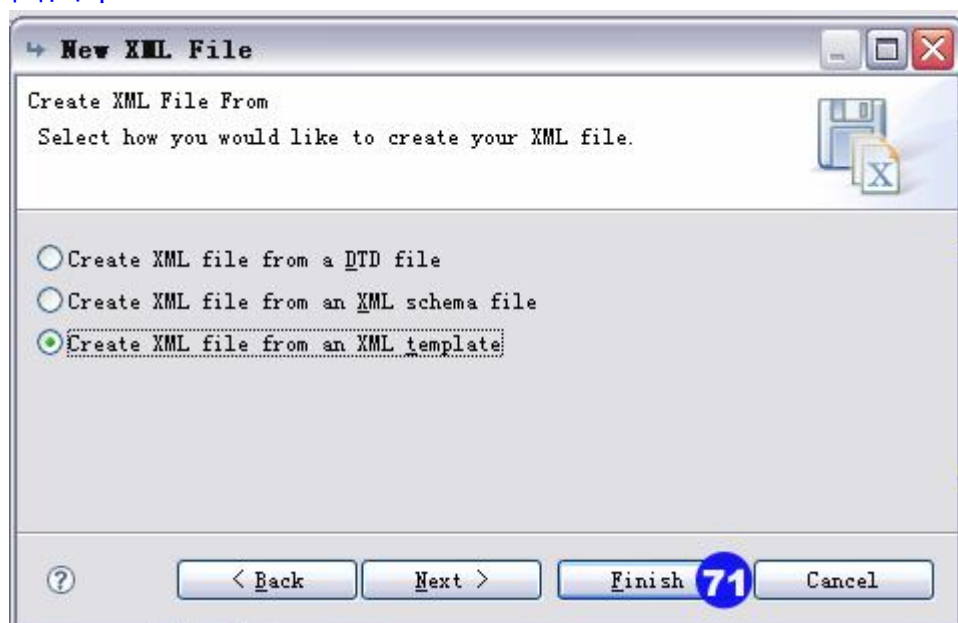
图三十九



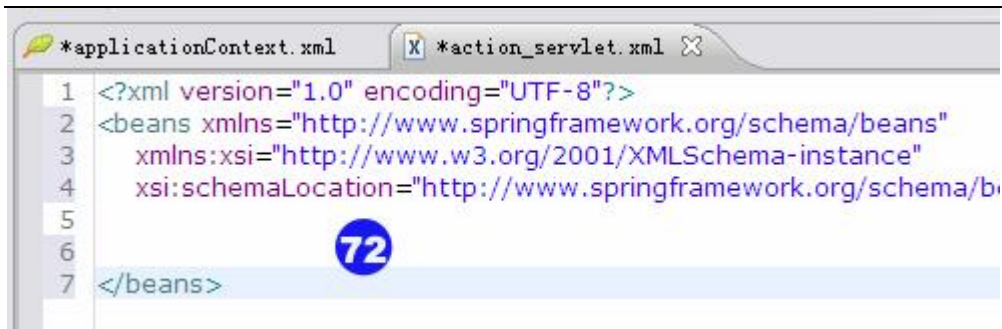
图四十



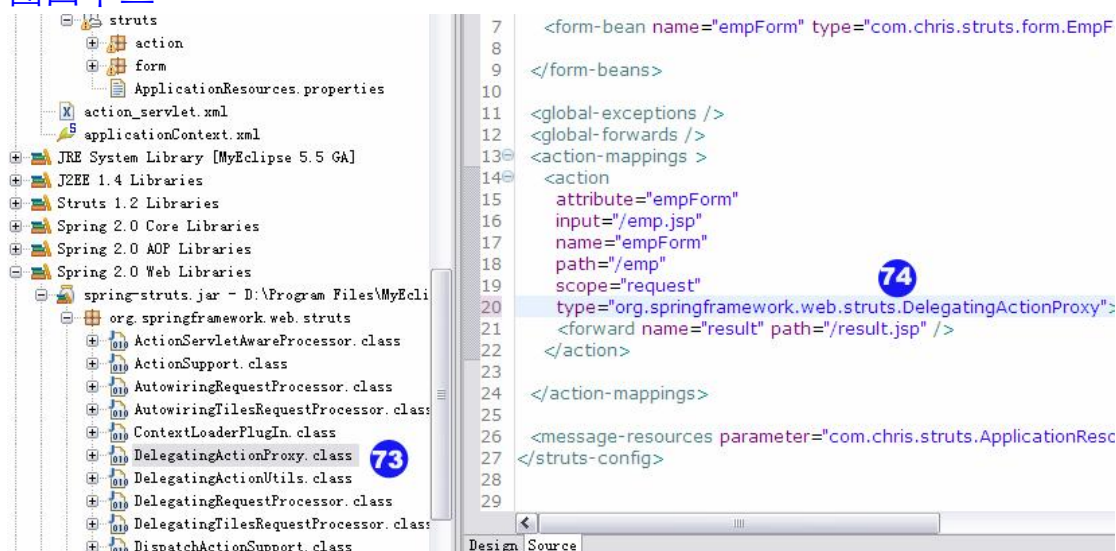
图四十一



图四十二



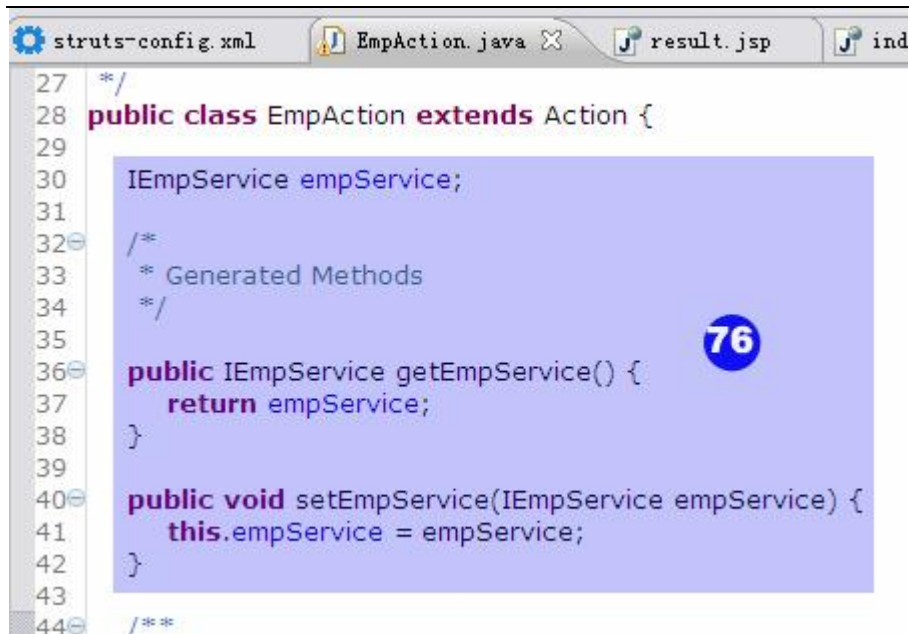
图四十三



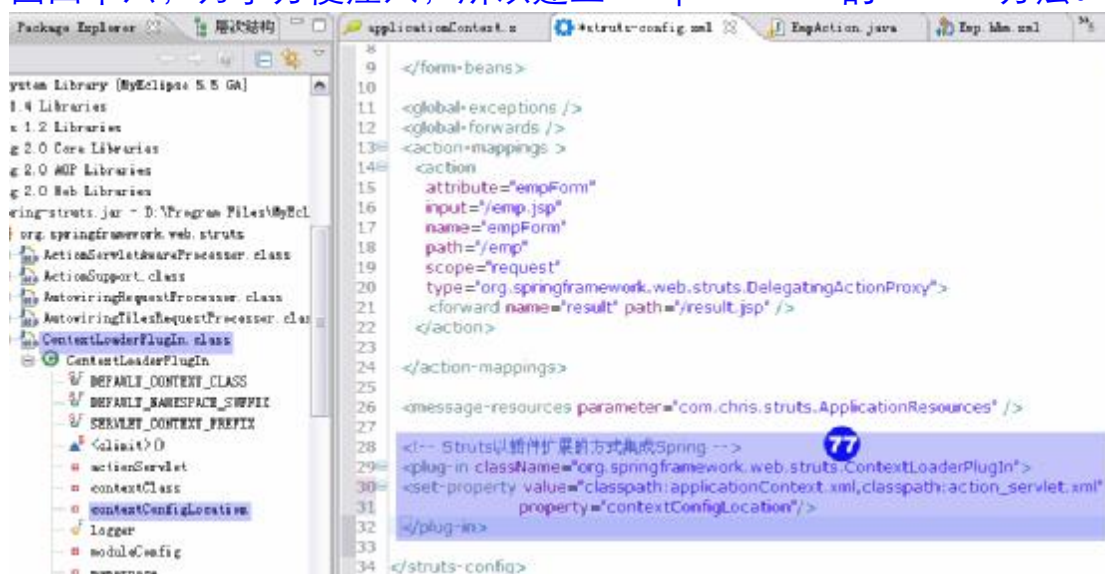
图四十四，将 struts 配置文件中的 action 类别配置为“org.springframework.web.struts.DelegatingActionProxy”。这样将所有的 action 都委托到 spring 中来管理。



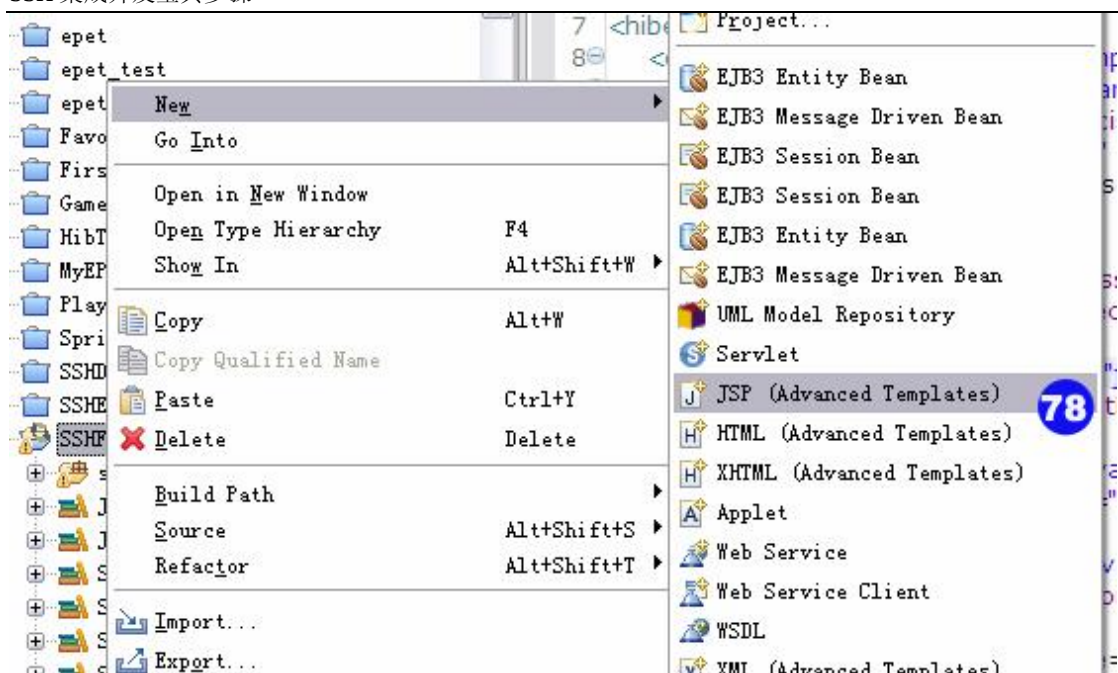
图四十五，第 75 步 手动配置将 empService 注入到 EmpAction 中。其中没有 id,需配置 name 为提交的 path.



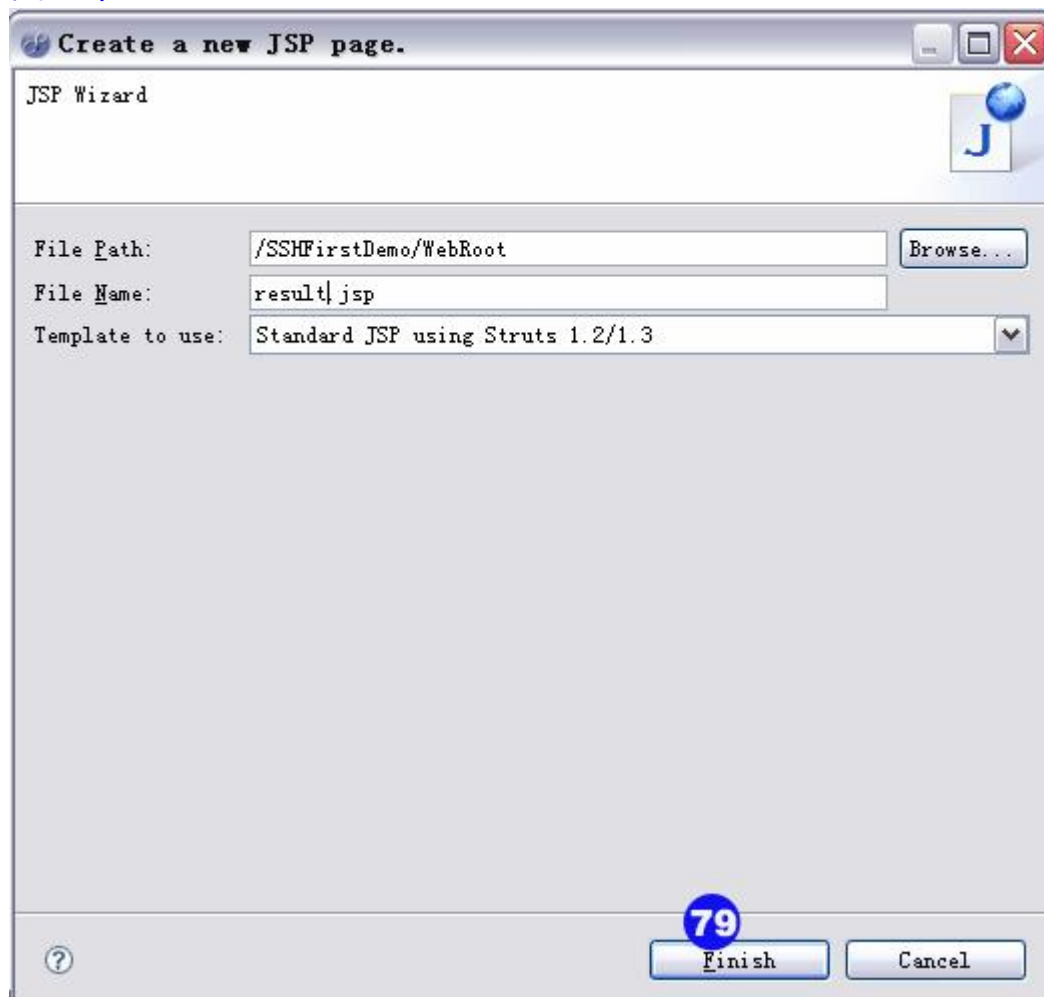
图四十六，为了方便注入，所以建立 empService 的 setter 方法。



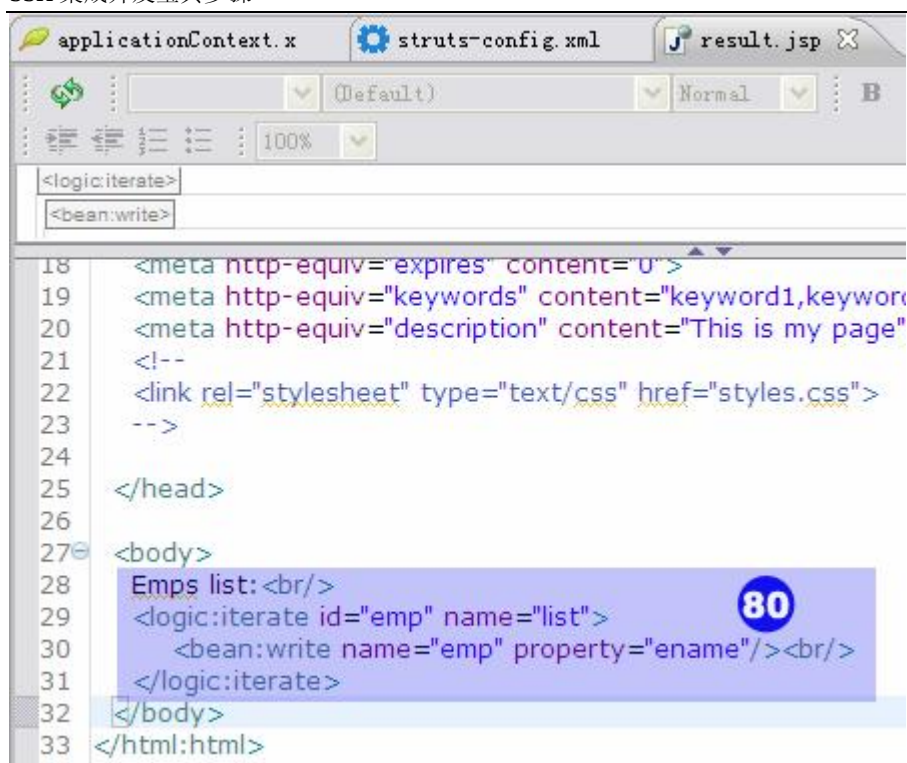
图四十七,第 77 步在 struts 的配置文件 struts-config.xml 中已插件的方式集成。  
注意：plug-in 插件必须写在配置文件的最后一项。



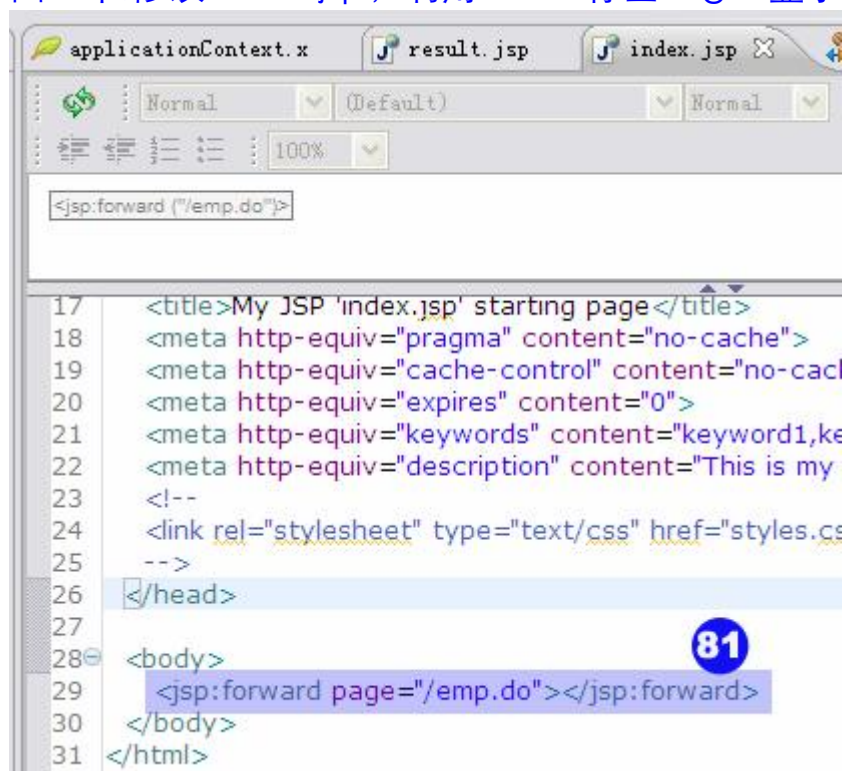
图四十八



图四十九

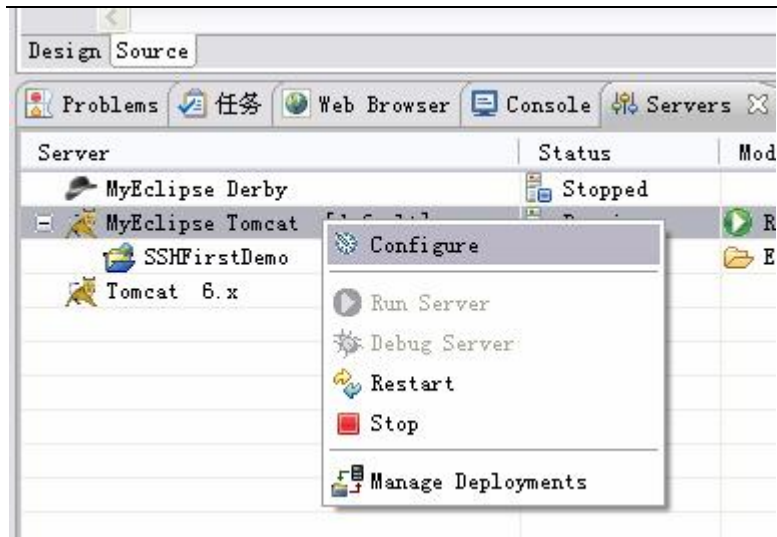


图五十.修改 result.jsp，利用 struts 标签 logic 显示 list.

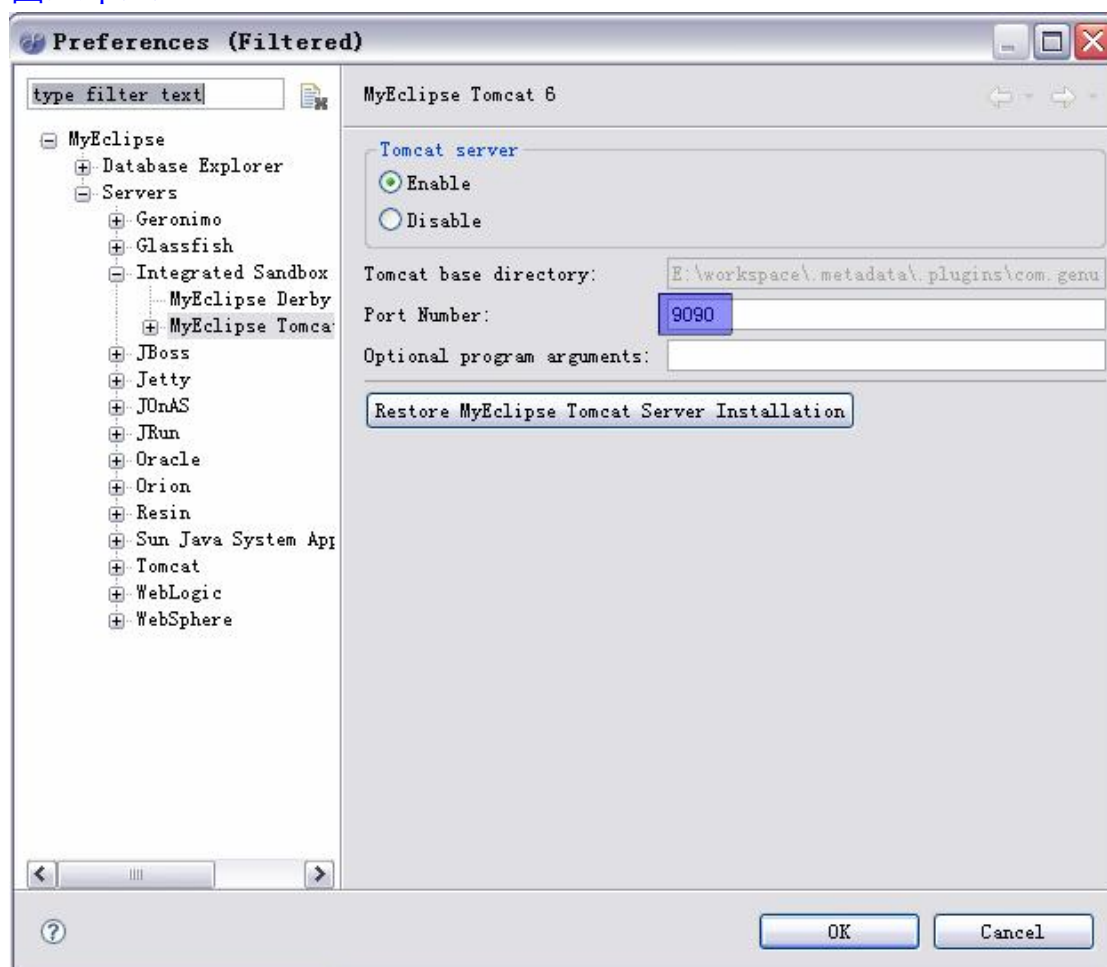


图五十一，修改 index.jsp，直接跳转到 servlet.

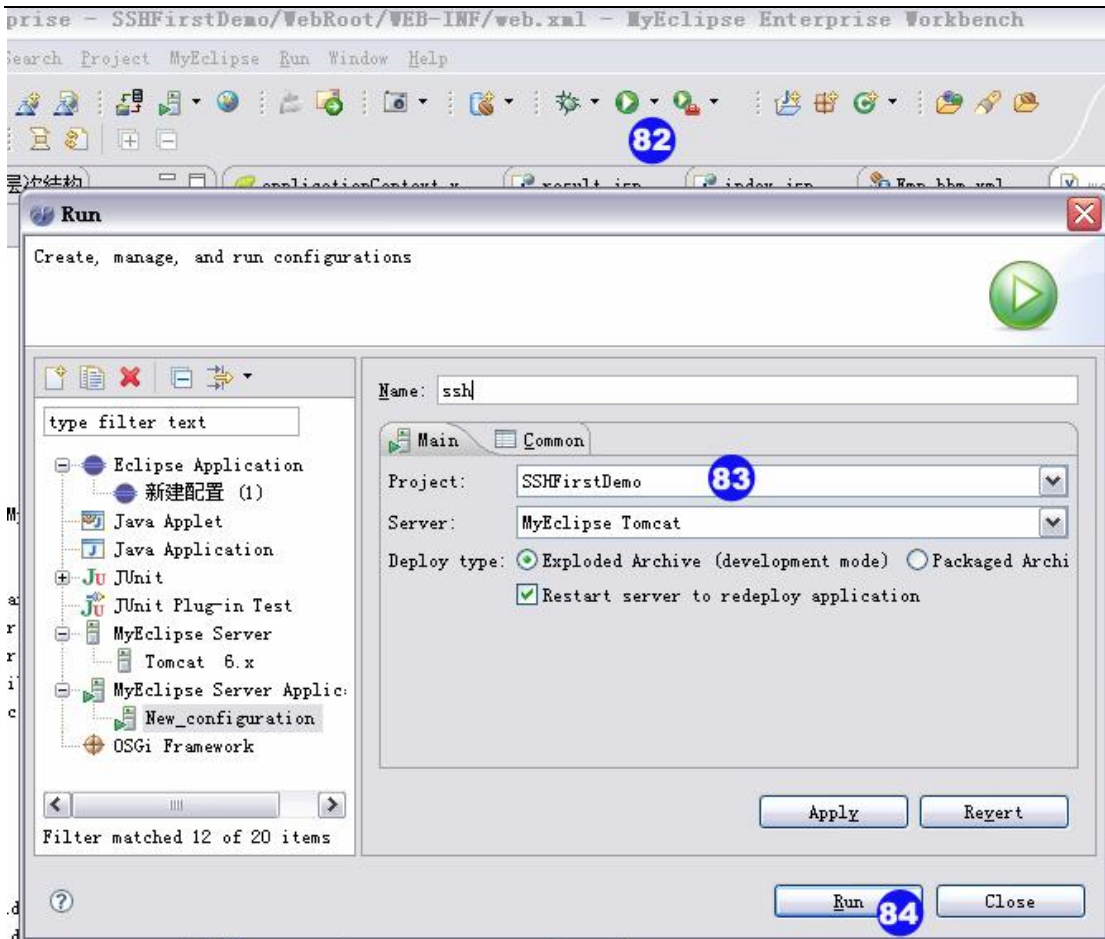
步骤九：运行



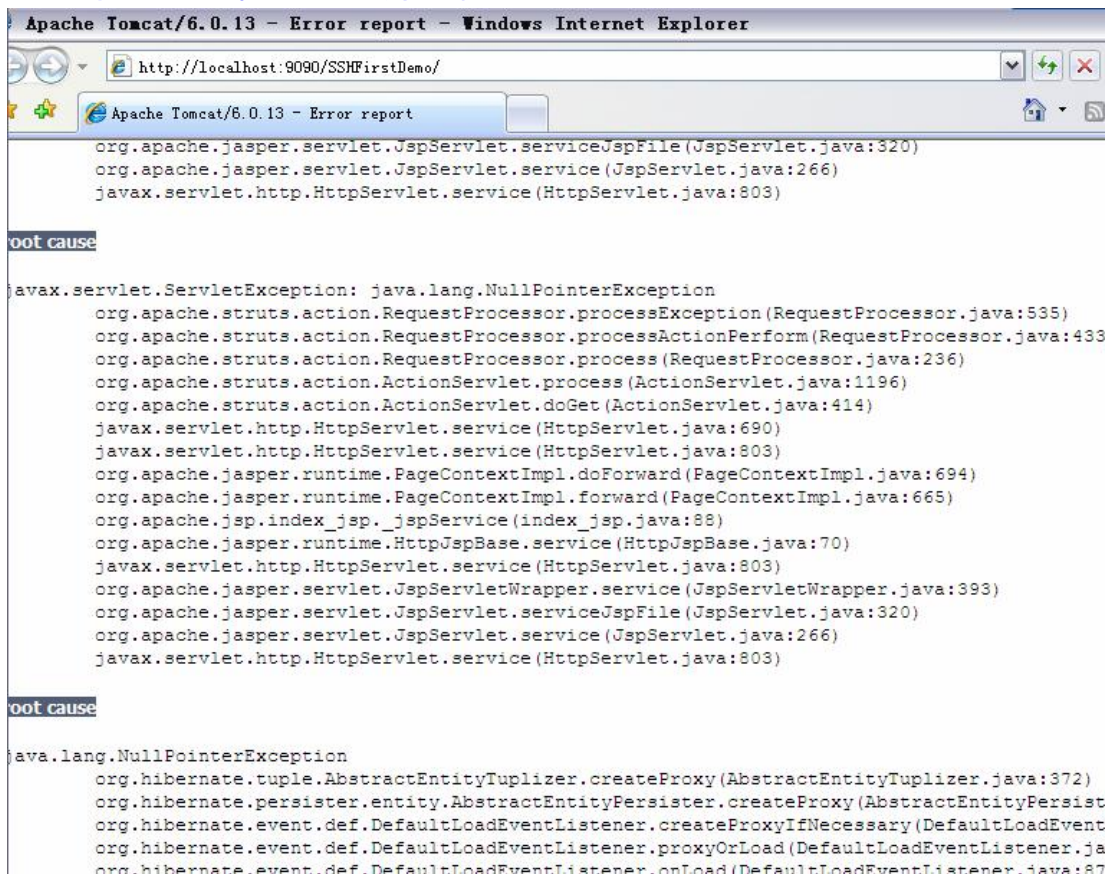
图五十二



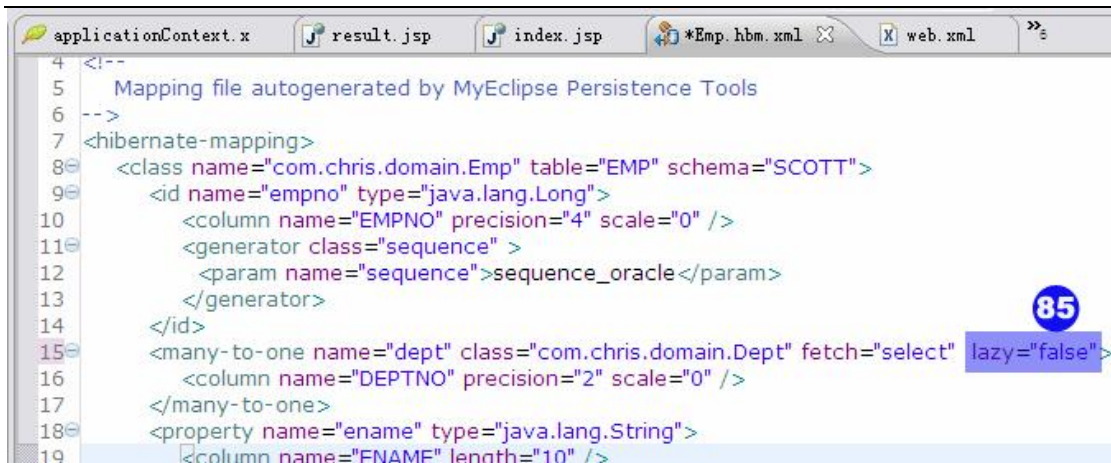
图五十三，由于 oracle 占用了 8080 端口，所以将 tomcat 的端口改为 9090



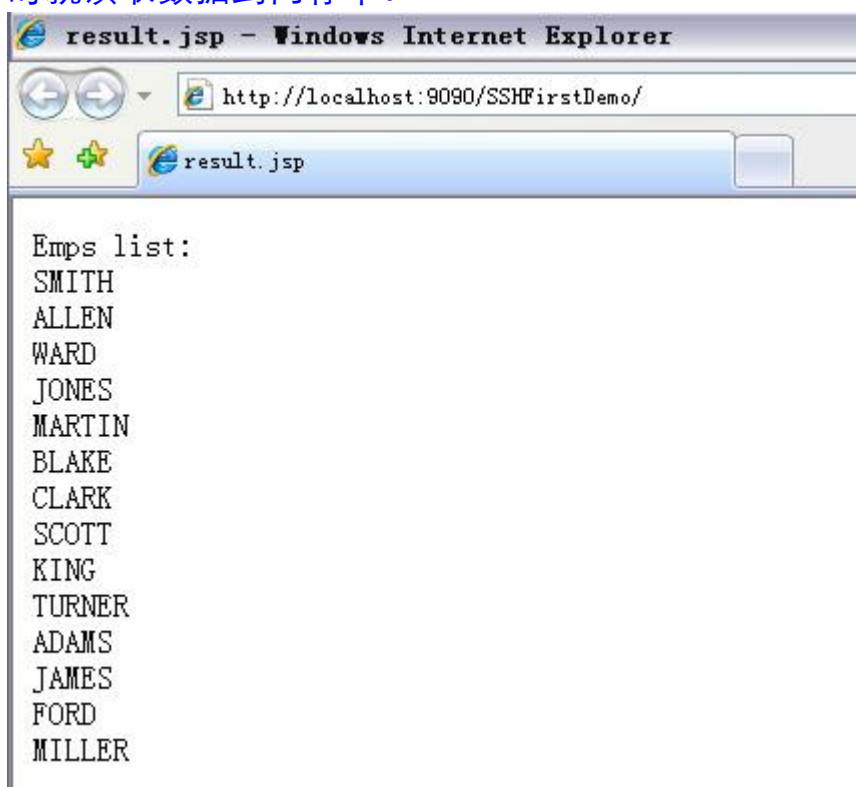
图五十四，部署项目，并运行。



图五十五，运行时提示 nullPointerException 异常。

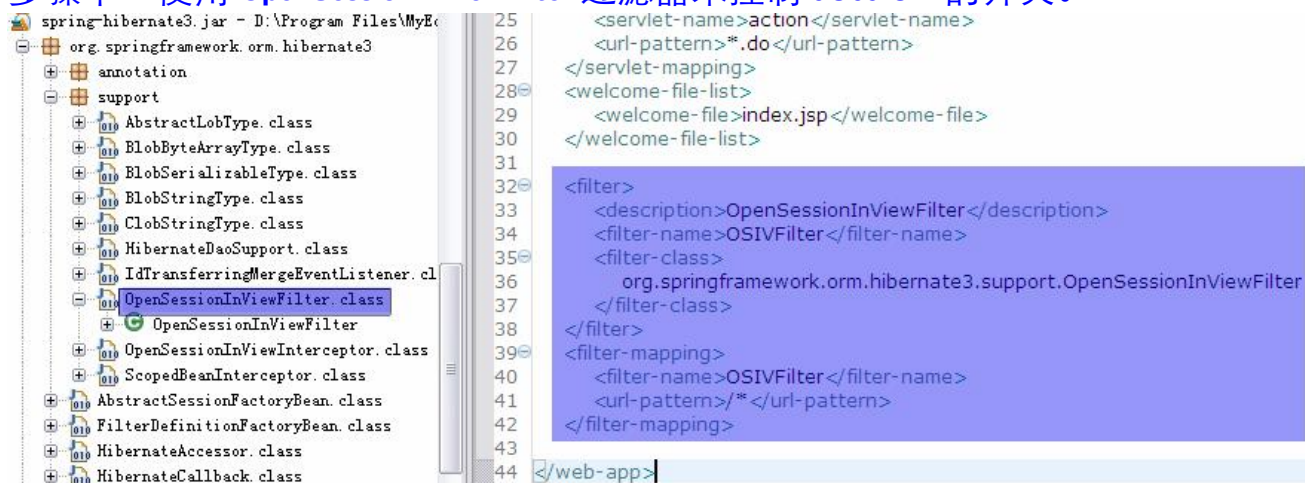


图五十六，第 85 步设置 lazy="false"，不使用延迟加载功能。这样在数据库操作时就读取数据到内存中。



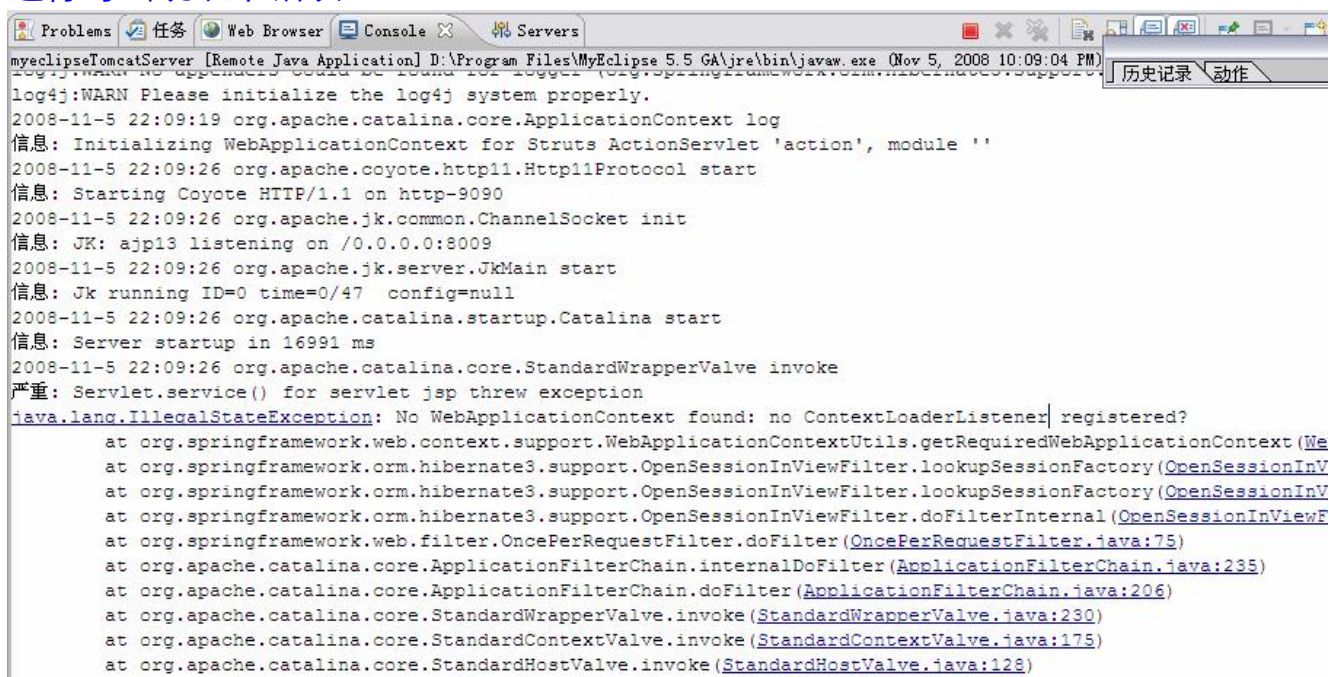
图五十七

步骤十：使用 **OpenSessionInViewFilter** 过滤器来控制 session 的开关。



图五十八

运行时出现以下错误:

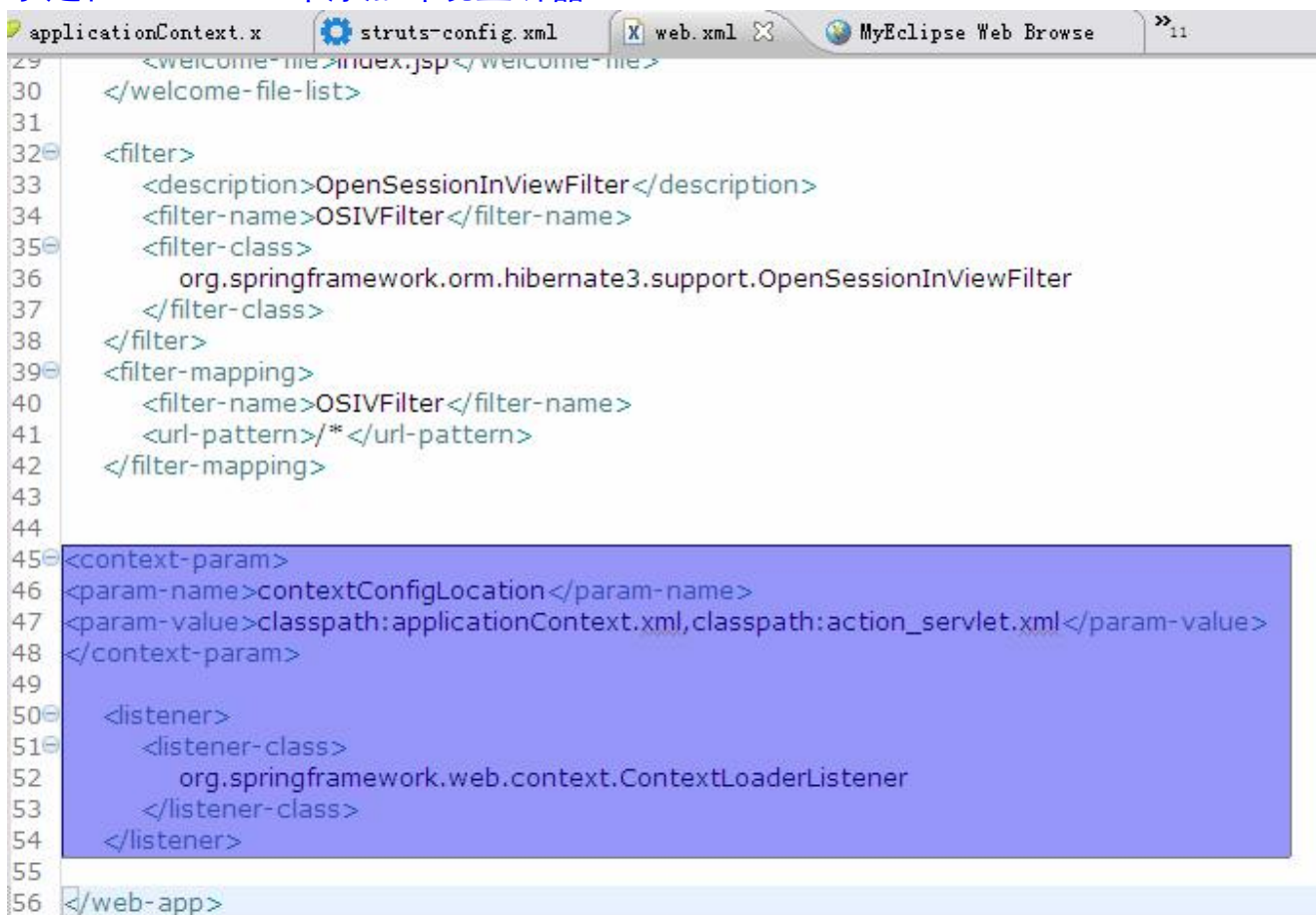


```

myeclipseTomcatServer [Remote Java Application] D:\Program Files\MyEclipse 5.5 GA\jre\bin\javaw.exe (Nov 5, 2008 10:09:04 PM)
log4j:WARN Please initialize the log4j system properly.
2008-11-5 22:09:19 org.apache.catalina.core.ApplicationContext log
信息: Initializing WebApplicationContext for Struts ActionServlet 'action', module ''
2008-11-5 22:09:26 org.apache.coyote.http11.Http11Protocol start
信息: Starting Coyote HTTP/1.1 on http-9090
2008-11-5 22:09:26 org.apache.jk.common.ChannelSocket init
信息: JK: ajp13 listening on /0.0.0.0:8009
2008-11-5 22:09:26 org.apache.jk.server.JkMain start
信息: Jk running ID=0 time=0/47 config=null
2008-11-5 22:09:26 org.apache.catalina.startup.Catalina start
信息: Server startup in 16991 ms
2008-11-5 22:09:26 org.apache.catalina.core.StandardWrapperValve invoke
严重: Servlet.service() for servlet jsp threw exception
java.lang.IllegalStateException: No WebApplicationContext found: no ContextLoaderListener registered?
    at org.springframework.web.context.support.WebApplicationContextUtils.getRequiredWebApplicationContext(We
    at org.springframework.orm.hibernate3.support.OpenSessionInViewFilter.lookupSessionFactory(OpenSessionInV
    at org.springframework.orm.hibernate3.support.OpenSessionInViewFilter.lookupSessionFactory(OpenSessionInV
    at org.springframework.orm.hibernate3.support.OpenSessionInViewFilter.doFilterInternal(OpenSessionInViewF
    at org.springframework.web.filter.OncePerRequestFilter.doFilter(OncePerRequestFilter.java:75)
    at org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(ApplicationFilterChain.java:235)
    at org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterChain.java:206)
    at org.apache.catalina.core.StandardWrapperValve.invoke(StandardWrapperValve.java:230)
    at org.apache.catalina.core.StandardContextValve.invoke(StandardContextValve.java:175)
    at org.apache.catalina.core.StandardHostValve.invoke(StandardHostValve.java:128)
  
```

图五十九

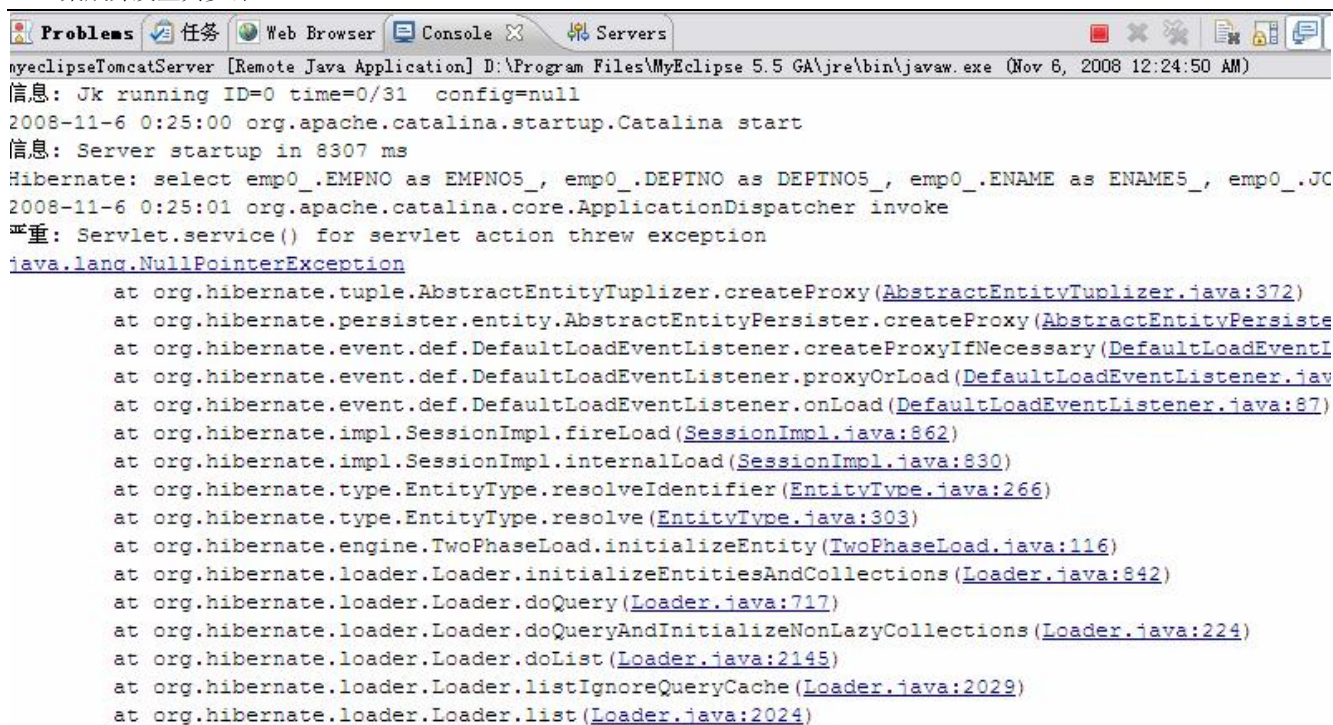
于是在 web.xml 中添加环境监听器



```

applicationContext.x  struts-config.xml  web.xml  MyEclipse Web Browse  »11
29  <welcome-file>index.jsp</welcome-file>
30  </welcome-file-list>
31
32  <filter>
33    <description>OpenSessionInViewFilter</description>
34    <filter-name>OSIVFilter</filter-name>
35    <filter-class>
36      org.springframework.orm.hibernate3.support.OpenSessionInViewFilter
37    </filter-class>
38  </filter>
39  <filter-mapping>
40    <filter-name>OSIVFilter</filter-name>
41    <url-pattern>/*</url-pattern>
42  </filter-mapping>
43
44
45  <context-param>
46    <param-name>contextConfigLocation</param-name>
47    <param-value>classpath:applicationContext.xml,classpath:action_servlet.xml</param-value>
48  </context-param>
49
50  <listener>
51    <listener-class>
52      org.springframework.web.context.ContextLoaderListener
53    </listener-class>
54  </listener>
55
56 </web-app>
  
```

图六十



```

myeclipseTomcatServer [Remote Java Application] D:\Program Files\MyEclipse 5.5 GA\jre\bin\javaw.exe (Nov 6, 2008 12:24:50 AM)
信息: Jk running ID=0 time=0/31 config=null
2008-11-6 0:25:00 org.apache.catalina.startup.Catalina start
信息: Server startup in 8307 ms
Hibernate: select emp0_.EMPNO as EMPNO5_, emp0_.DEPTNO as DEPTNO5_, emp0_.ENAME as ENAME5_, emp0_.JC
2008-11-6 0:25:01 org.apache.catalina.core.ApplicationDispatcher invoke
严重: Servlet.service() for servlet action threw exception
java.lang.NullPointerException
    at org.hibernate.tuple.AbstractEntityTuplizer.createProxy(AbstractEntityTuplizer.java:372)
    at org.hibernate.persister.entity.AbstractEntityPersister.createProxy(AbstractEntityPersister.java:1000)
    at org.hibernate.event.def.DefaultLoadEventListener.createProxyIfNecessary(DefaultLoadEventListener.java:100)
    at org.hibernate.event.def.DefaultLoadEventListener.proxyOrLoad(DefaultLoadEventListener.java:117)
    at org.hibernate.event.def.DefaultLoadEventListener.onLoad(DefaultLoadEventListener.java:87)
    at org.hibernate.impl.SessionImpl.fireLoad(SessionImpl.java:862)
    at org.hibernate.impl.SessionImpl.internalLoad(SessionImpl.java:830)
    at org.hibernate.type.EntityType.resolveIdentifier(EntityType.java:266)
    at org.hibernate.type.EntityType.resolve(EntityType.java:303)
    at org.hibernate.engine.TwoPhaseLoad.initializeEntity(TwoPhaseLoad.java:116)
    at org.hibernate.loader.Loader.initializeEntitiesAndCollections(Loader.java:842)
    at org.hibernate.loader.Loader.doQuery(Loader.java:717)
    at org.hibernate.loader.Loader.doQueryAndInitializeNonLazyCollections(Loader.java:224)
    at org.hibernate.loader.Loader.doList(Loader.java:2145)
    at org.hibernate.loader.Loader.listIgnoreQueryCache(Loader.java:2029)
    at org.hibernate.loader.Loader.list(Loader.java:2024)

```

图六十一，还是出现同样的错误。过滤器没有起作用。

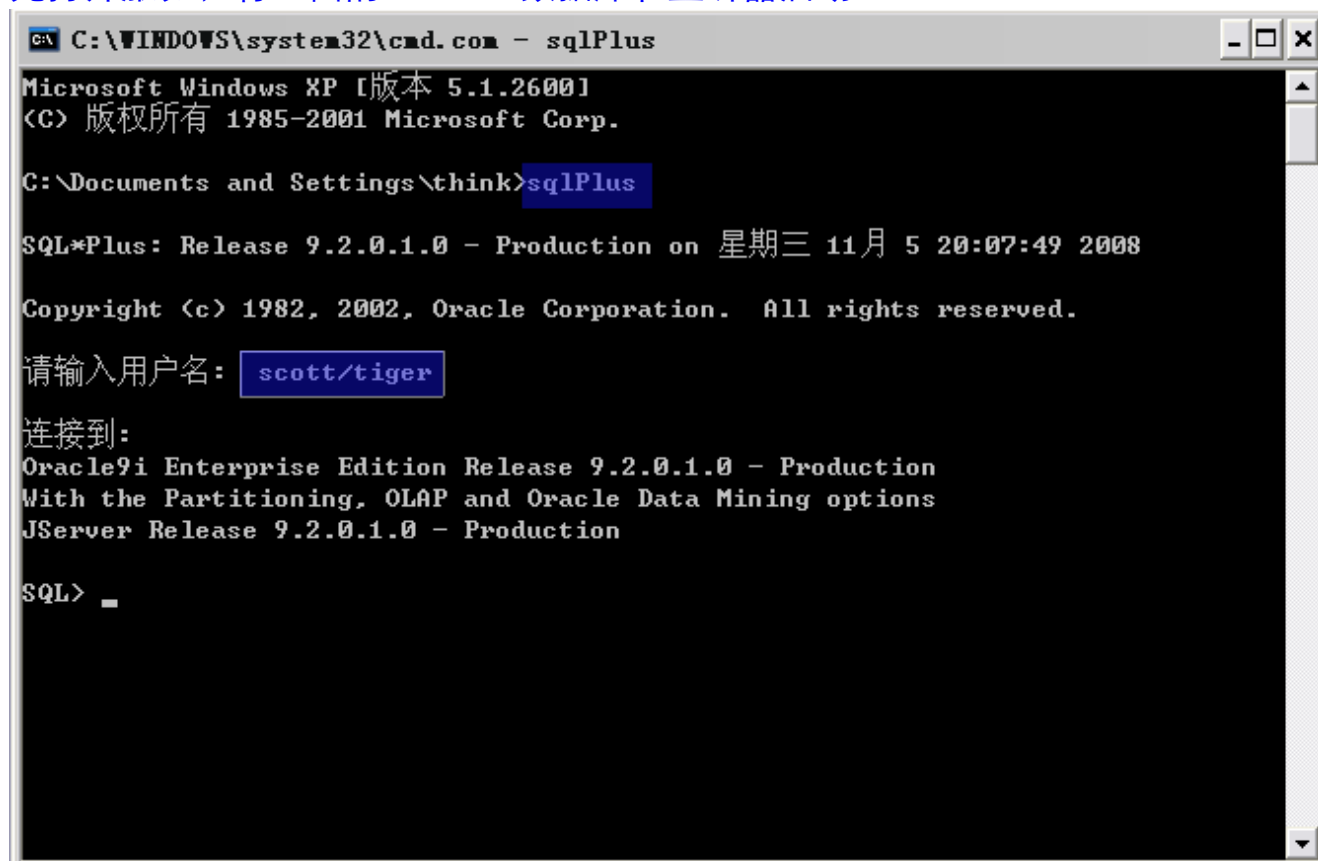
## 附录：

## 一， 配置 oracle 驱动

| 名称                                   | 描述     | 状态  | 启动类型 |
|--------------------------------------|--------|-----|------|
| OracleOraHome92ClientCache           |        |     | 手动   |
| OracleOraHome92HTTPServer            |        | 已启动 | 自动   |
| OracleOraHome92PagingServer          |        |     | 手动   |
| OracleOraHome92SNMPPeerEncapsulator  |        |     | 手动   |
| OracleOraHome92SNMPPeerMasterAgent   |        |     | 手动   |
| OracleOraHome92TNSListener           |        | 已启动 | 手动   |
| OracleServiceORACLEDB                |        | 已启动 | 手动   |
| PeanutHull DDNS Service              | DDN... | 已启动 | 自动   |
| Performance Logs and Alerts          | 收...   |     | 手动   |
| Plug and Play                        | 使...   | 已启动 | 自动   |
| Portable Media Serial Number Service | Ret... |     | 手动   |

图 1

先打开服务，将里面的 oracle 数据库和监听器启动。



```
C:\WINDOWS\system32\cmd.com - sqlPlus
Microsoft Windows XP [版本 5.1.2600]
(C) 版权所有 1985-2001 Microsoft Corp.

C:\Documents and Settings\think>sqlPlus

SQL*Plus: Release 9.2.0.1.0 - Production on 星期三 11月 5 20:07:49 2008

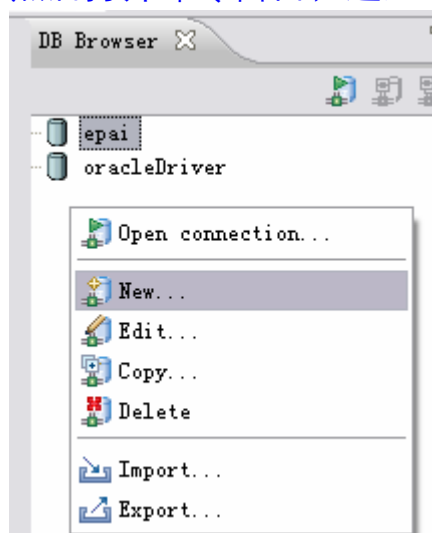
Copyright (c) 1982, 2002, Oracle Corporation. All rights reserved.

请输入用户名: scott/tiger

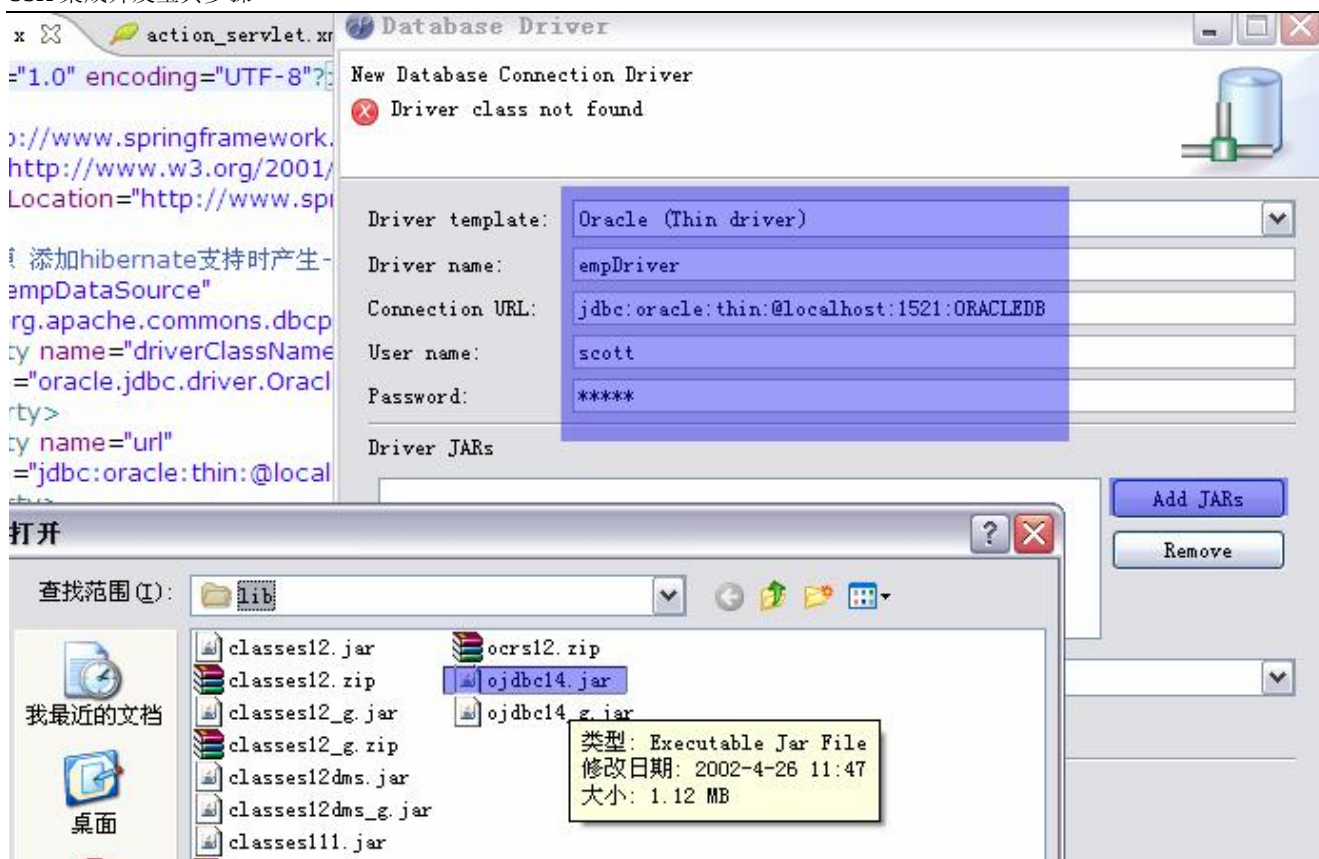
连接到:
Oracle9i Enterprise Edition Release 9.2.0.1.0 - Production
With the Partitioning, OLAP and Oracle Data Mining options
JServer Release 9.2.0.1.0 - Production

SQL>
```

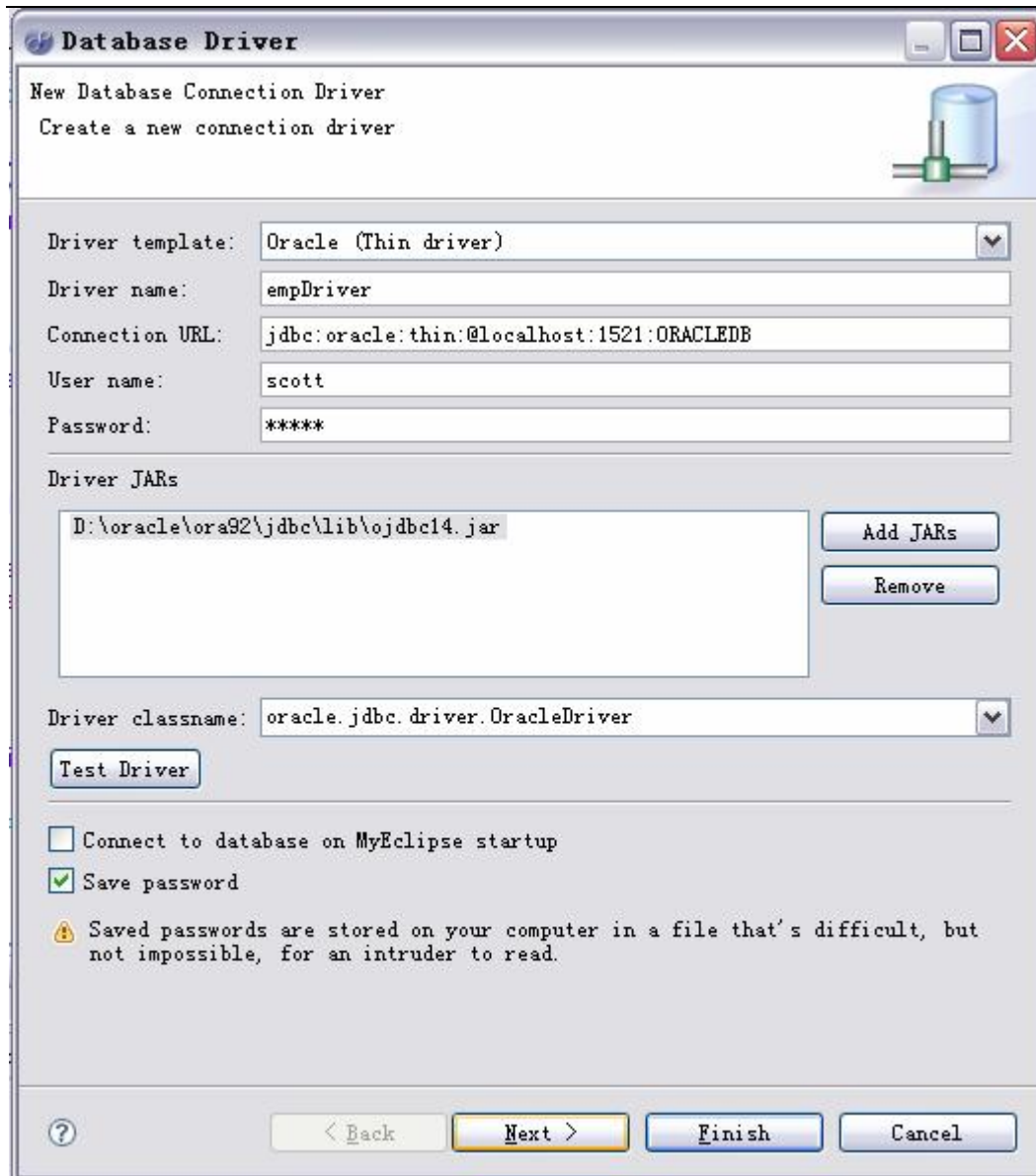
然后打开命令窗口，进入 sqlPlus，用 scott/tiger 登陆。



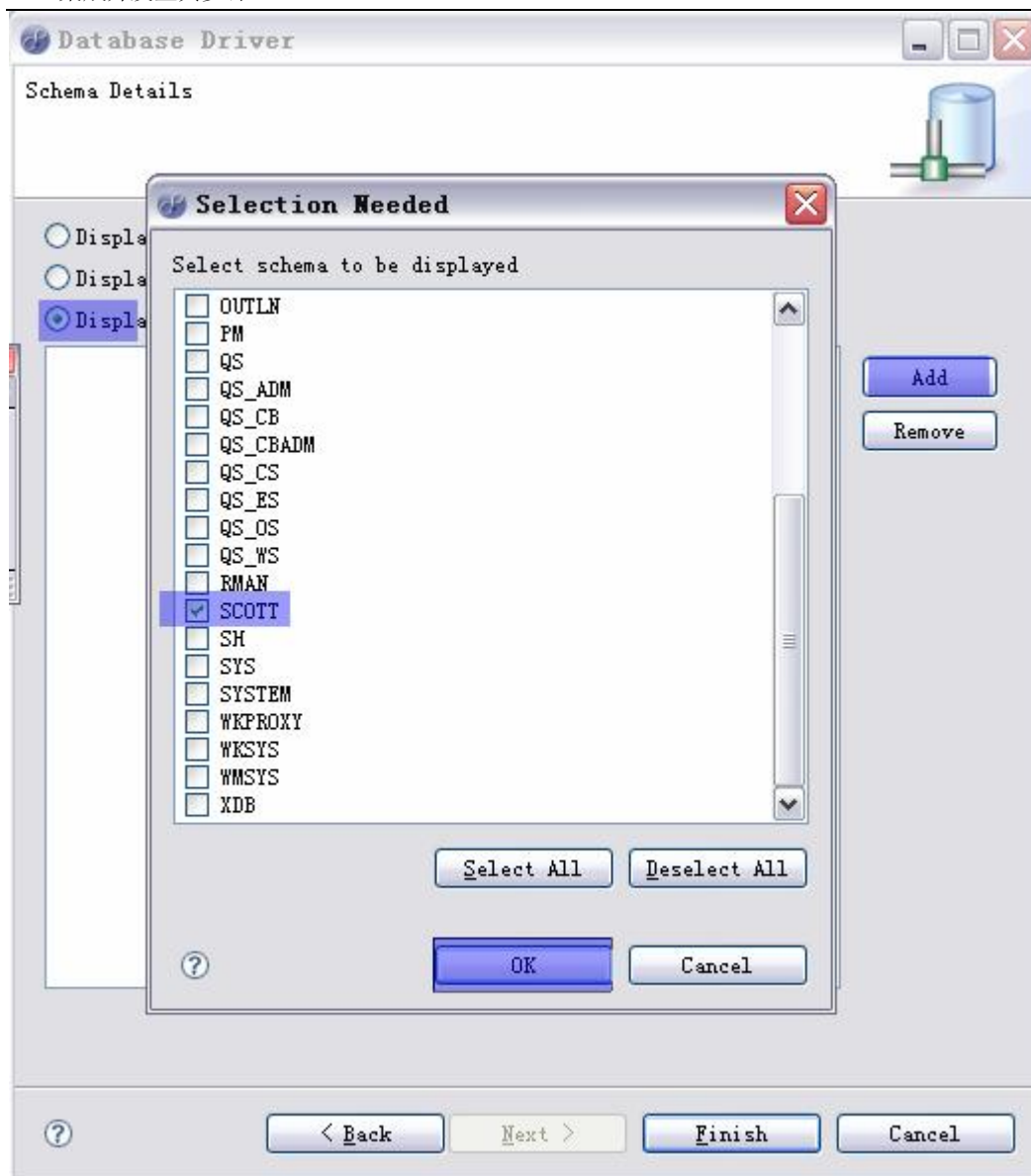
在 myEclipse 里面打开 DB Browser 窗口，右键菜单 new ... 一个驱动。



按上图输入各种配置，其中 ORACLEDB 要替换为你的数据库名。



选择 save password,然后选 next.



选择使用的数据库。然后点 finish 的就建立好了驱动。