Java EE 7 Web
練習六 Solution

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Lab - DVDLibrary 應用程式

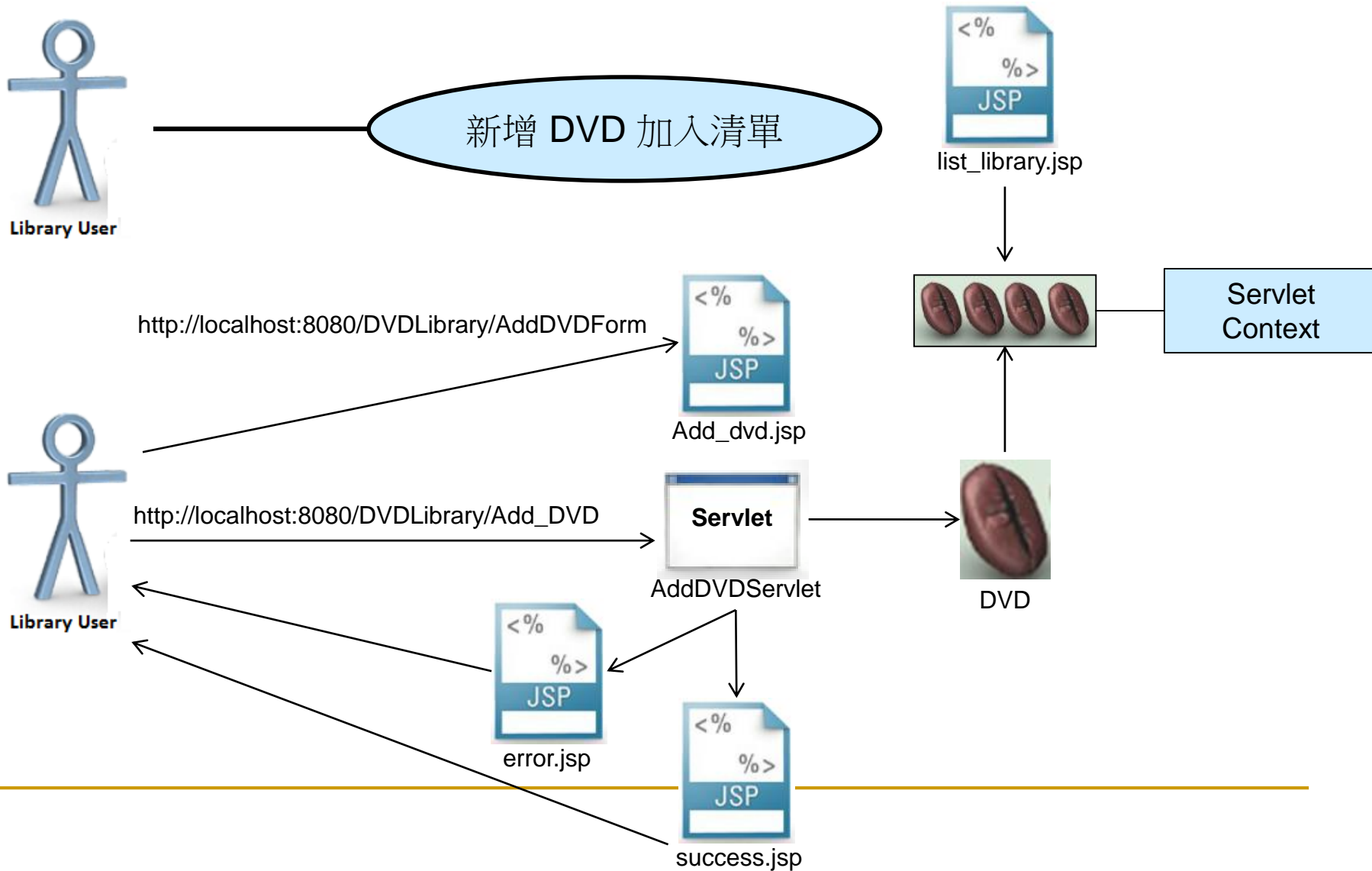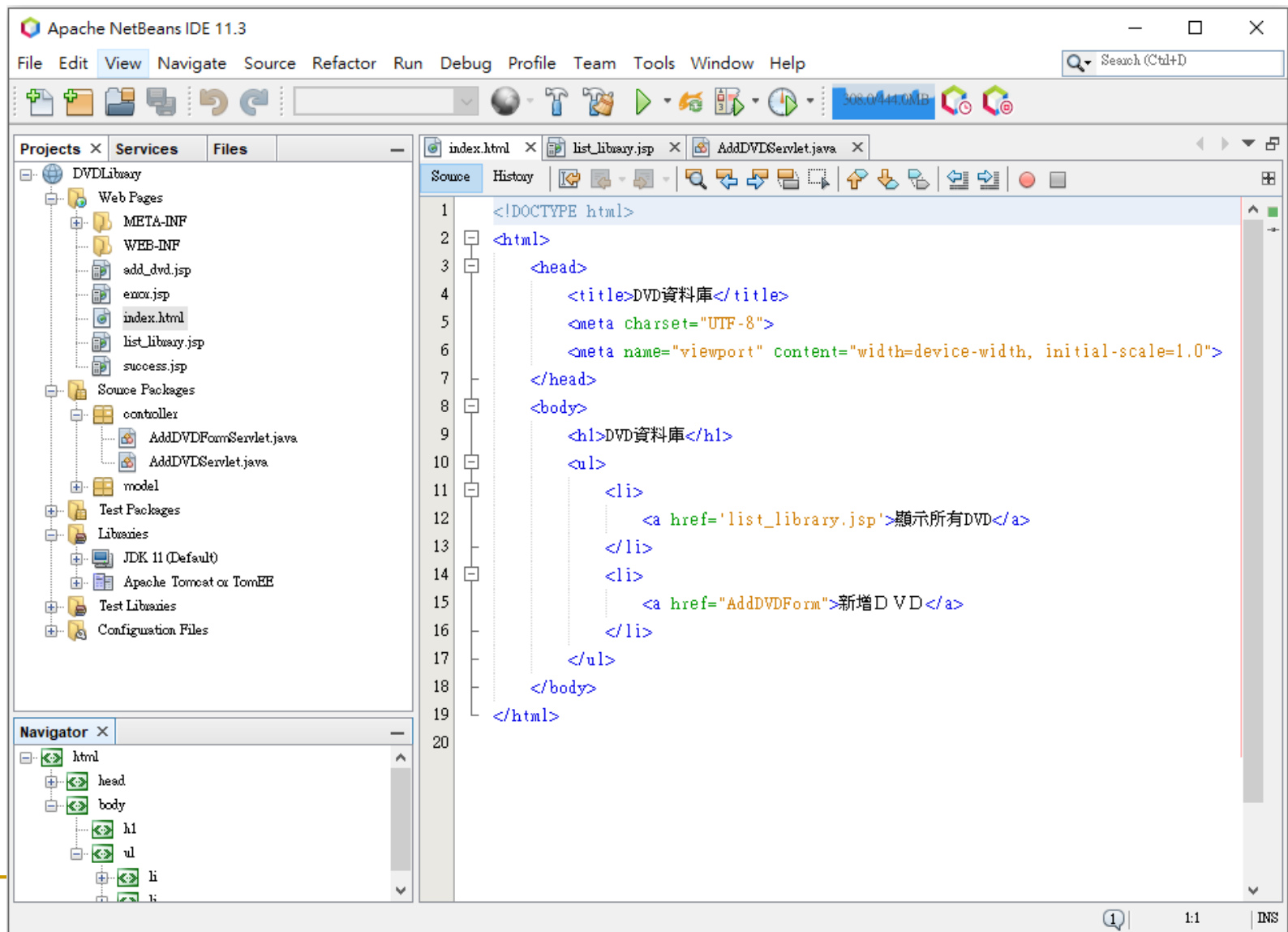# Lab 1

Lab 1

- 修改 controller.AddDVDServlet.java
  - 表單驗證成功
    - 以title, year, genre建立DVDItem物件
    - 將DVDItem物件加入請求屬性dvdItem
    - 取得應用程式共用之DVD清單
      - DVD清單儲存於ServletContext 屬性 "DVDList"
      - 取得之物件轉型為List
      - 如果DVDList屬性不存在,新增一個LinkedList加入ServletContext屬性
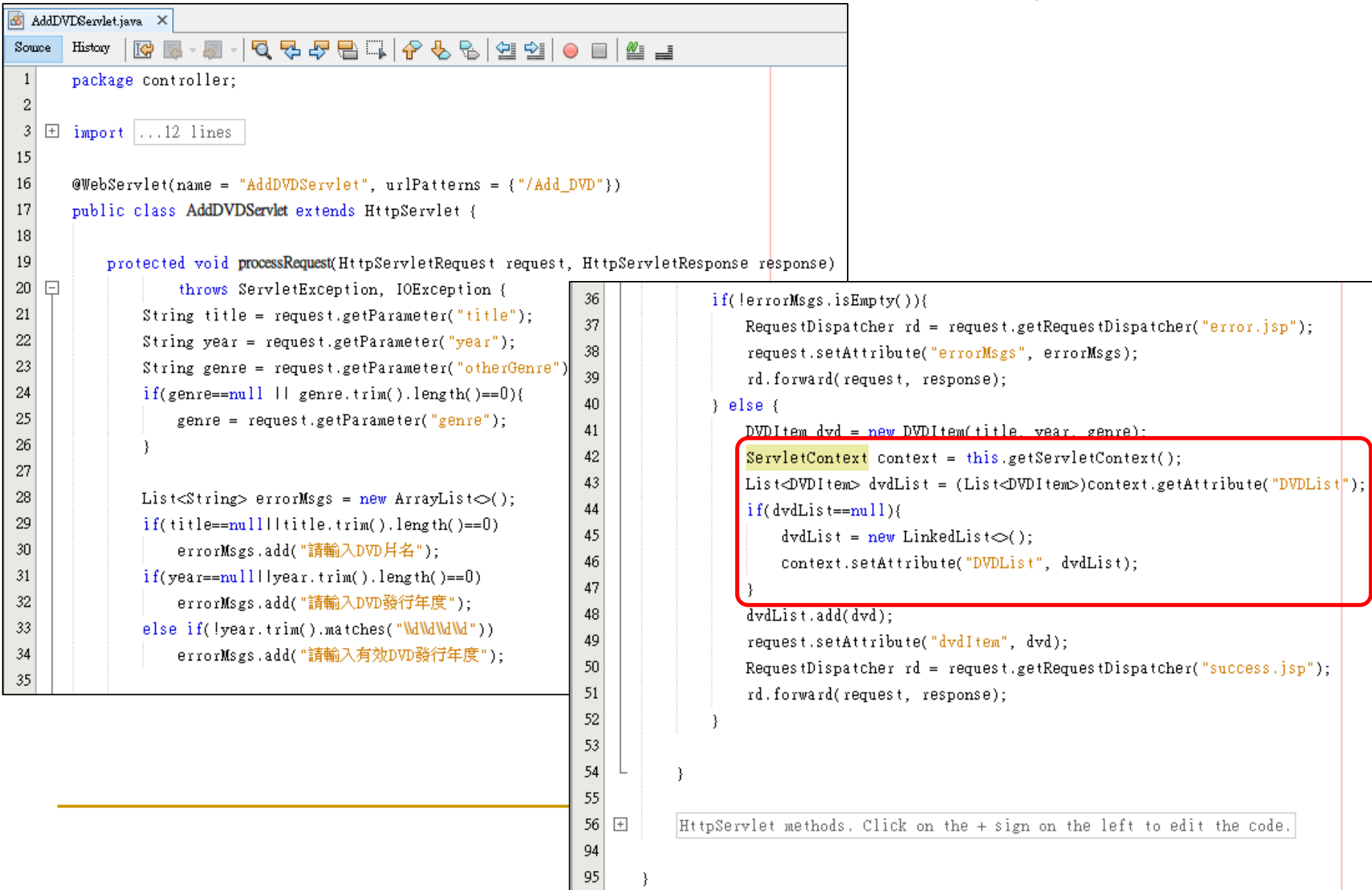   - 將DVDItem物件加入DVD清單
    - 將請求轉送至success.jsp

Lab 1

- 修改index.html
  - 修改List_Library連結至list_library.jsp
- 刪除 controller.ListLibraryServlet.java
- 修改 list_library.jsp
  - 取得應用程式共用之DVD清單
    - 使用隱含變數application取得ServletContext屬性 "DVDList"
  - 將DVD清單資訊顯示於網頁
- 測試、執行

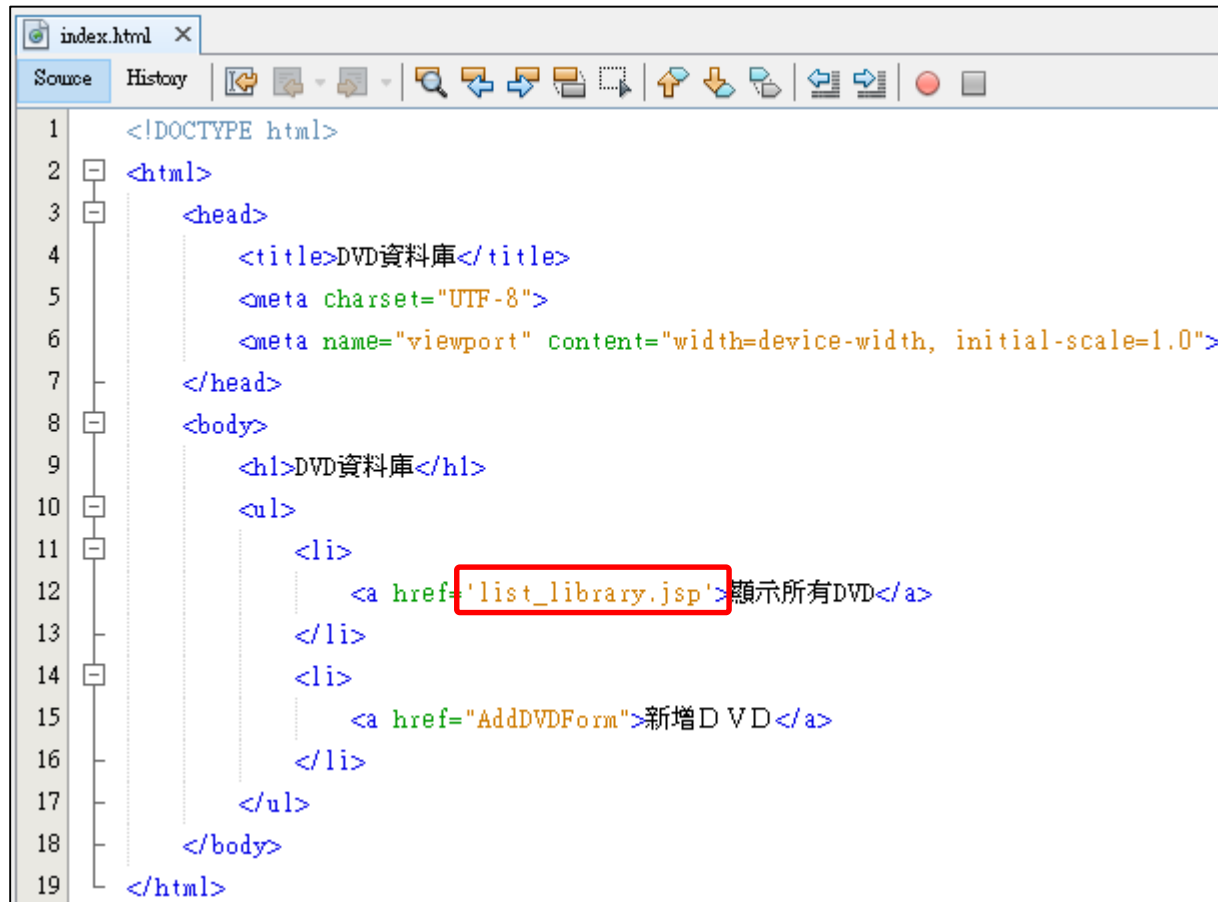# DVDLibrary專案

controller.AddDVDServlet.java

```java
package controller;

import ...12 lines

@WebServlet(name = "AddDVDServlet", urlPatterns = {"/Add_DVD"})
public class AddDVDServlet extends HttpServlet {

    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        String title = request.getParameter("title");
        String year = request.getParameter("year");
        String genre = request.getParameter("otherGenre");
        if(genre==null || genre.trim().length()==0){
            genre = request.getParameter("genre");
        }

        List<String> errorMsgs = new ArrayList<>();
        if(title==null||title.trim().length()==0)
            errorMsgs.add("請輸入DVD片名");
        if(year==null||year.trim().length()==0)
            errorMsgs.add("請輸入DVD發行年度");
        else if(!year.trim().matches("\\d\\d\\d\\d"))
            errorMsgs.add("請輸入有效DVD發行年度");
```

```java
        if(!errorMsgs.isEmpty()){
            RequestDispatcher rd = request.getRequestDispatcher("error.jsp");
            request.setAttribute("errorMsgs", errorMsgs);
            rd.forward(request, response);
        } else {
            DVDItem dvd = new DVDItem(title, year, genre);
            ServletContext context = this.getServletContext();
            List<DVDItem> dvdList = (List<DVDItem>)context.getAttribute("DVDList");
            if(dvdList==null){
                dvdList = new LinkedList<>();
                context.setAttribute("DVDList", dvdList);
            }
            dvdList.add(dvd);
            request.setAttribute("dvdItem", dvd);
            RequestDispatcher rd = request.getRequestDispatcher("success.jsp");
            rd.forward(request, response);
        }
    }

}
```

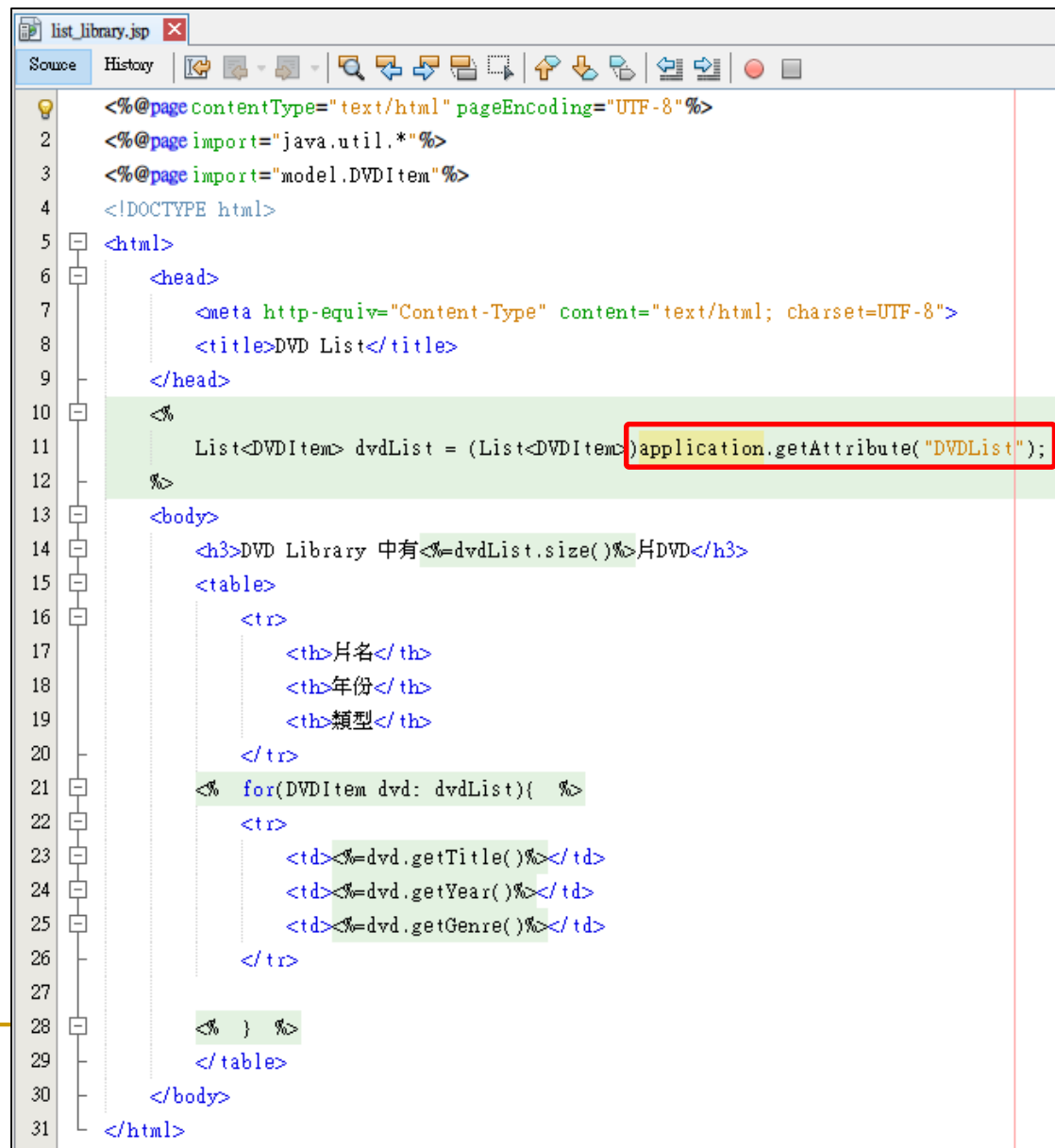HttpServlet methods. Click on the + sign on the left to edit the code.

Index.html

list_library.jsp

```jsp
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page import="java.util.*"%>
<%@page import="model.DVDItem"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>DVD List</title>
    </head>
    <%
        List<DVDItem> dvdList = (List<DVDItem>)application.getAttribute("DVDList");
    %>
    <body>
        <h3>DVD Library 中有<%=dvdList.size()%>片DVD</h3>
        <table>
            <tr>
                <th>片名</th>
                <th>年份</th>
                <th>類型</th>
            </tr>
        <%  for(DVDItem dvd: dvdList){  %>
            <tr>
                <td><%=dvd.getTitle()%></td>
                <td><%=dvd.getYear()%></td>
                <td><%=dvd.getGenre()%></td>
            </tr>

        <%  }  %>
        </table>
    </body>
</html>
```
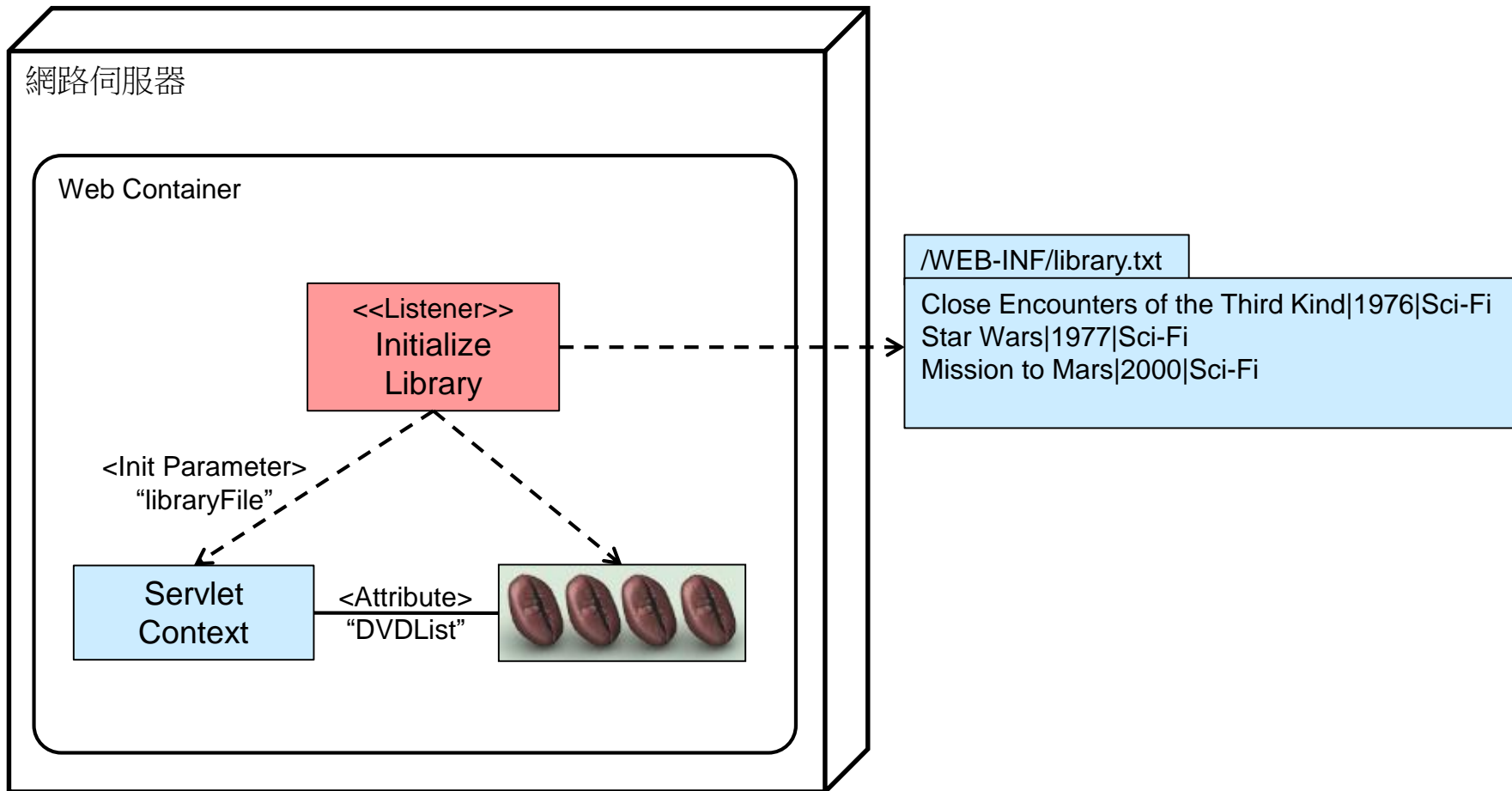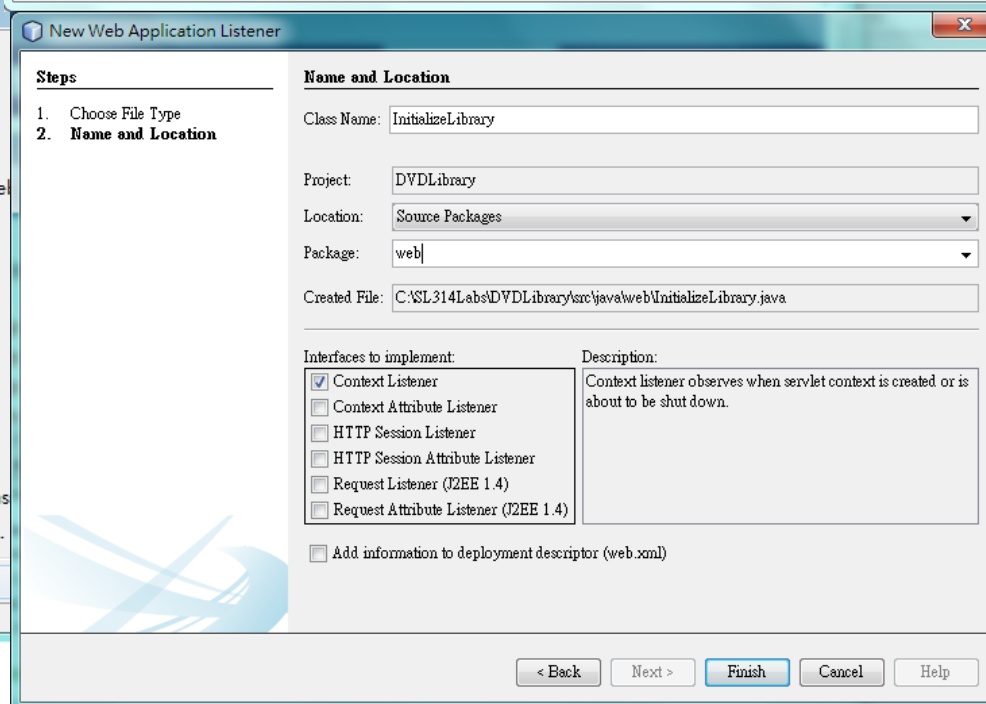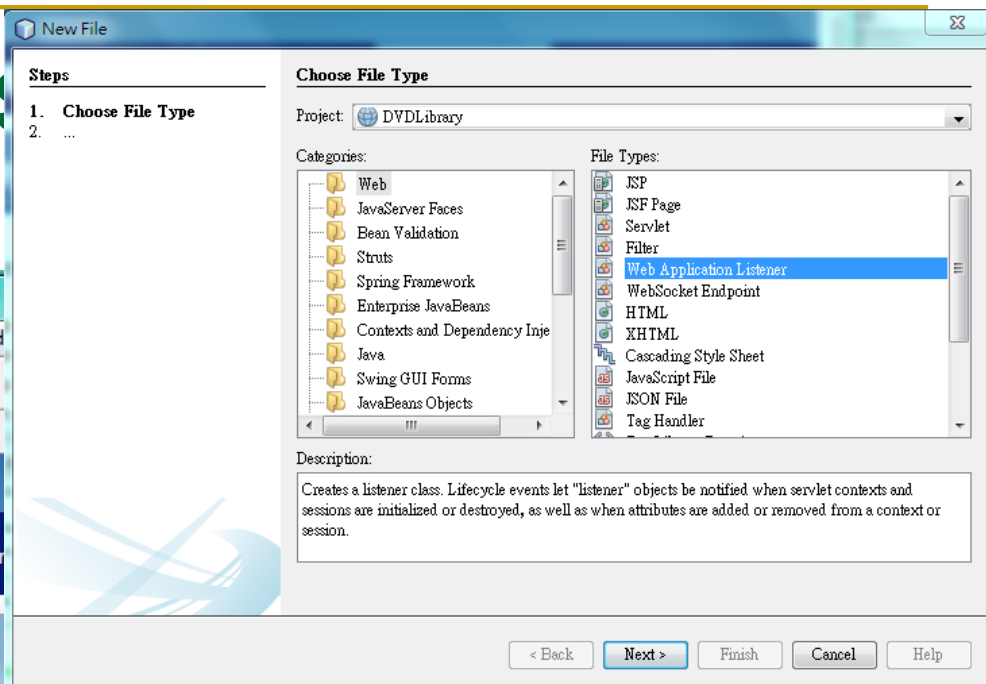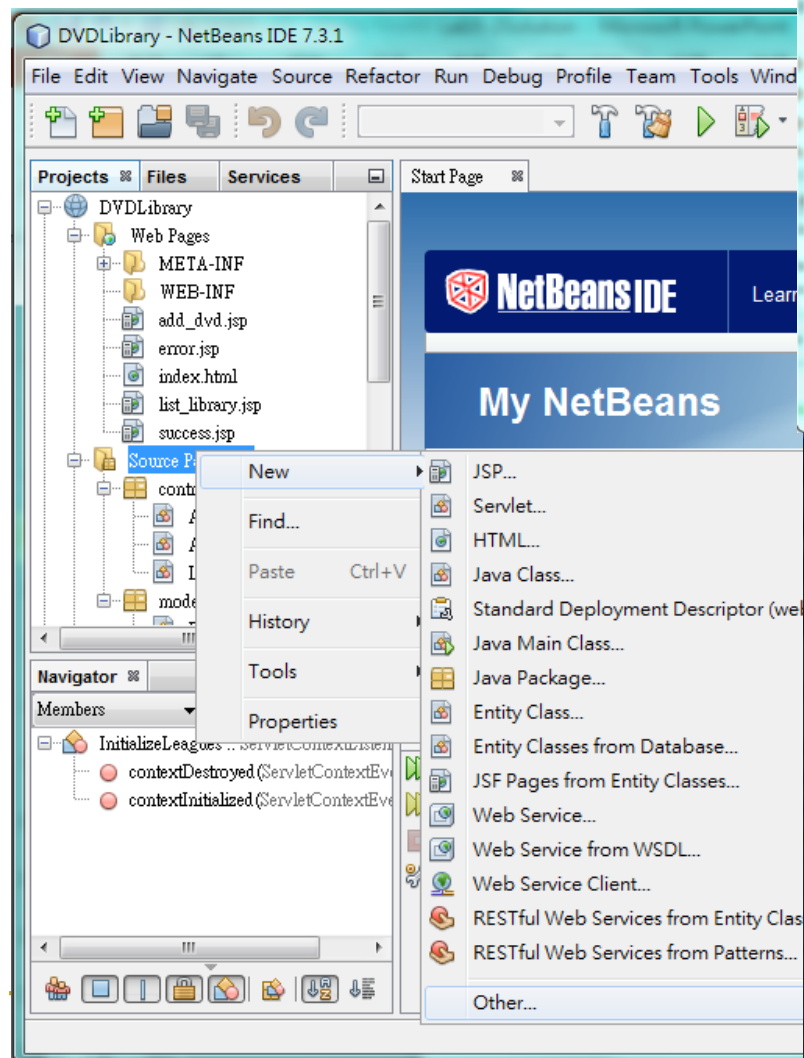
測試、執行

Lab 2 應用程式資源初始化

Lab 2

- 新增Context Listener
  - 新增一個Context Listener 檔 web.InitializeLibrary.java
  - 修改 contextInitialized(ServletContextEvent sce)
    - 由 ServletContextEvent 取得 ServletContext 物件
    - 由 ServletContext 取得應用程式初始參數 "libraryFile"
      - Library資料檔所在位置
    - 建立一個LinkedList儲存DVD清單
    - 由 ServletContext物件建立讀取資料檔的InputStream物件
      - getResourceAsStream()
      - 再包裝為BufferedReader物件
    - 讀取資料檔資料
      - 讀取每一行資料
      - 使用字串的split()切割
      - 建立對應之DVDItem物件
      - 將DVDItem物件加入DVD清單
    - 將DVD清單加入ServletContext 屬性 "DVDList"

Lab 2

- 建立Library資料檔

  - 複製 library.txt 至 <專案路徑>\web\WEB-INF 資料夾之下

- 網路應用程式設定資料

  - 新增 web.xml

  - 加入初始參數 "libraryFile"

  - 參數值為/WEB-INF/library.txt
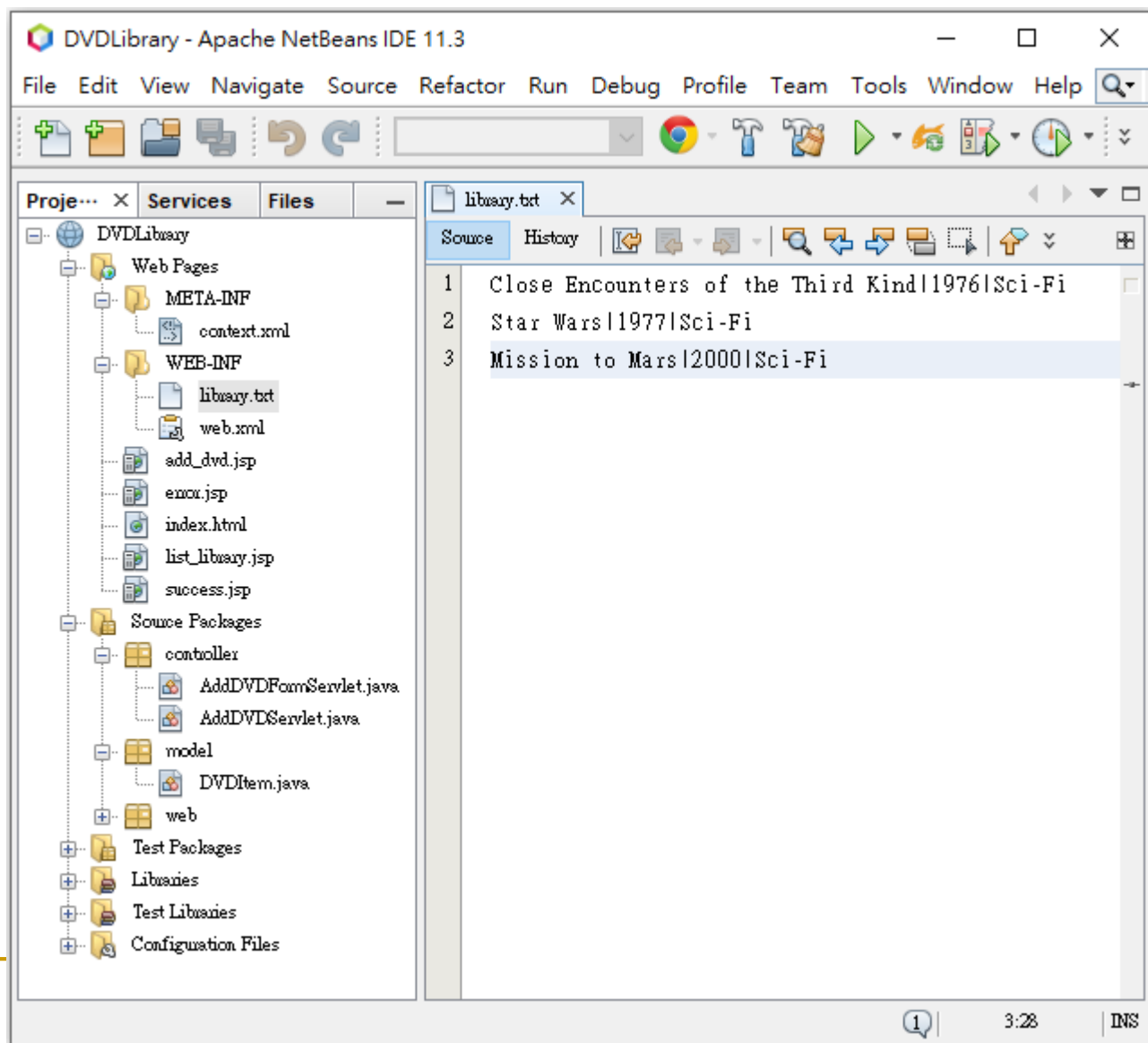
- 測試、執行

新增 Context Lis...

web.InitializeLibrary.java

```java
package web;

import ...8 lines

@WebListener()
public class InitializeLibrary implements ServletContextListener {

    @Override
    public void contextInitialized(ServletContextEvent sce) {
        ServletContext context = sce.getServletContext();
        String libraryFile = context.getInitParameter("libraryFile");
        List<DVDItem> dvdList = new LinkedList<>();
        try(InputStream is = context.getResourceAsStream(libraryFile);
            BufferedReader br = new BufferedReader(new InputStreamReader(is))){
            String record;
            while((record=br.readLine())!=null){
                try{
                    String[] data = record.split("\\|");
                    DVDItem dvd =new DVDItem(data[0],data[1],data[2]);
                    dvdList.add(dvd);
                } catch(Exception e){
                    context.log("wrong data:"+record);
                }
            }
            context.setAttribute("DVDList", dvdList);
            context.log("The library file has been loaded!");
        } catch(Exception e){
            context.log("Processing library file exception: " + e);
        }
    }
```
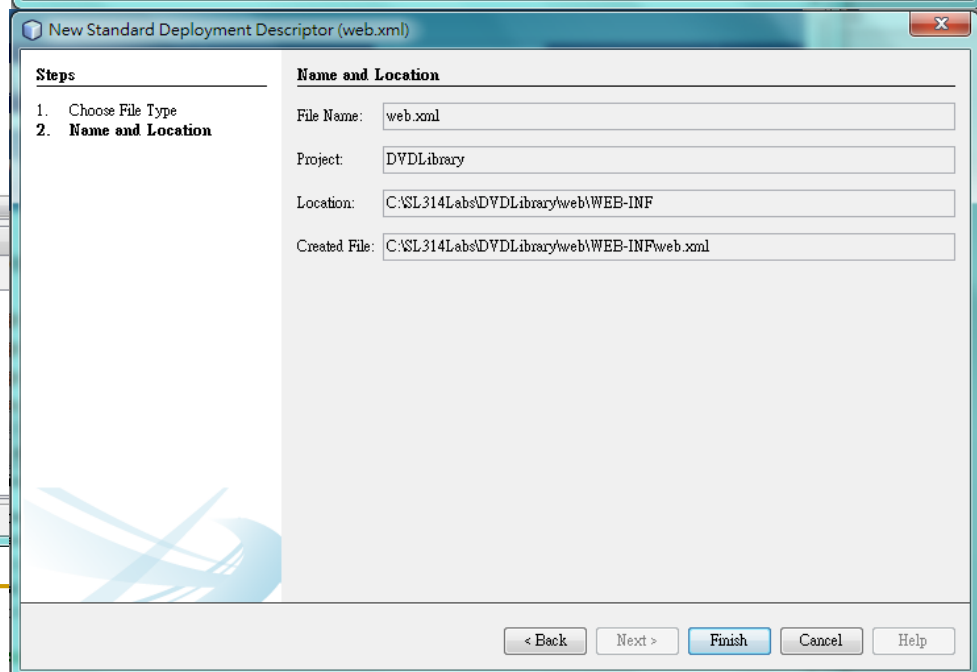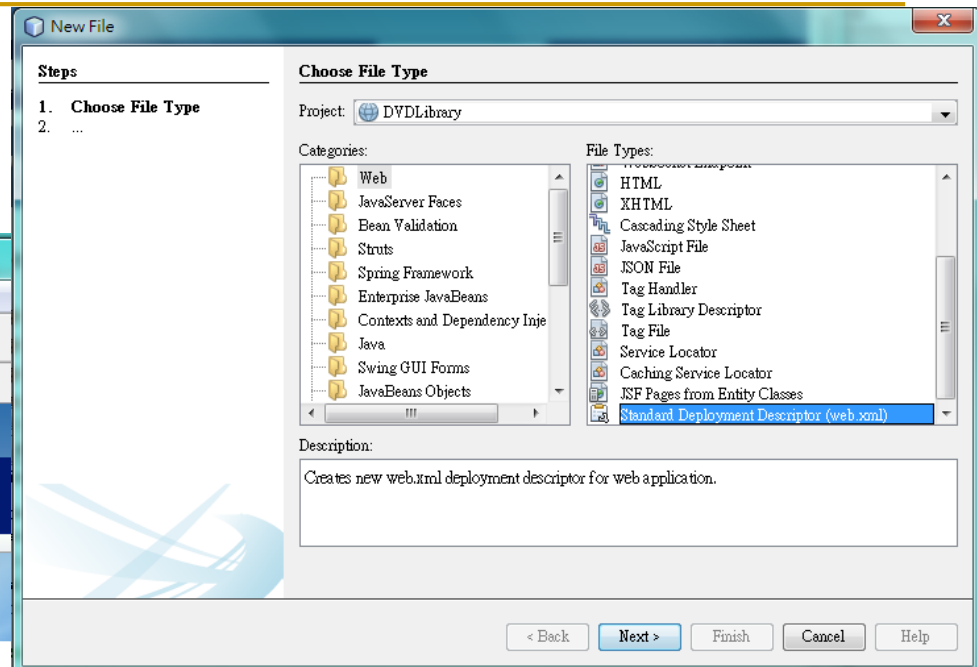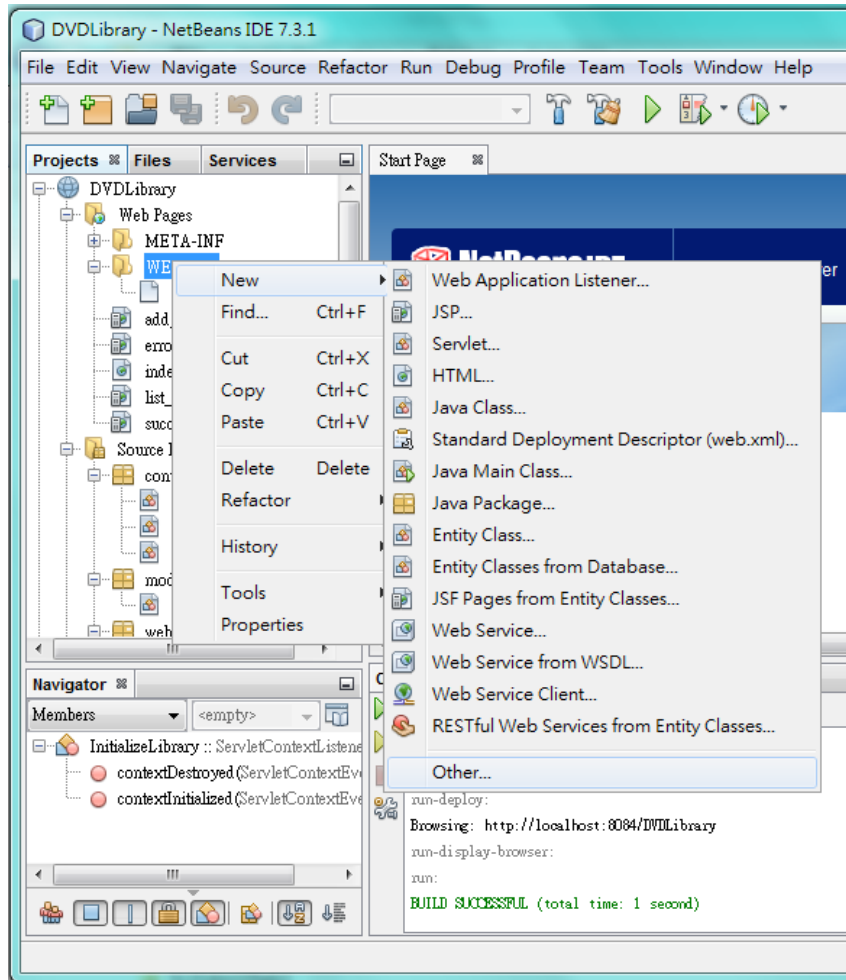
```java
    @Override
    public void contextDestroyed(ServletContextEvent sce) {
        ServletContext context = sce.getServletContext();
        context.log("The Context will be destroyed!");
    }
}
```

複製 Library 資料檔

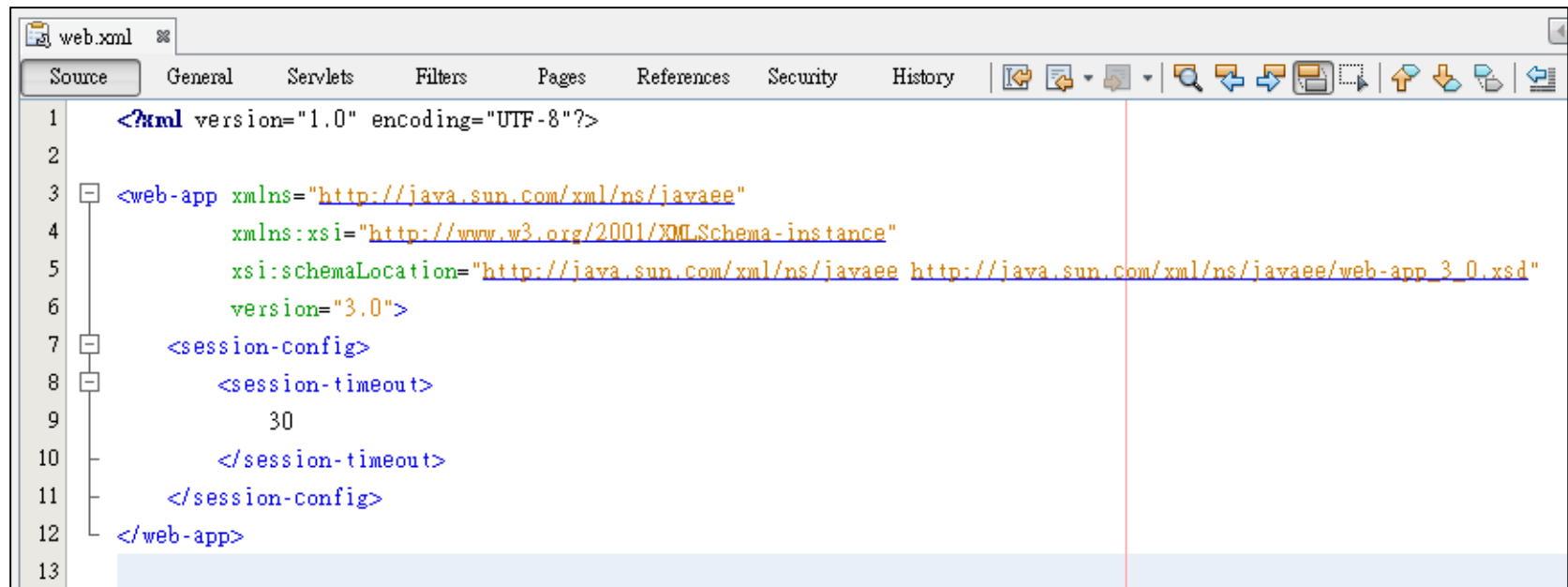# 新增 web.xml
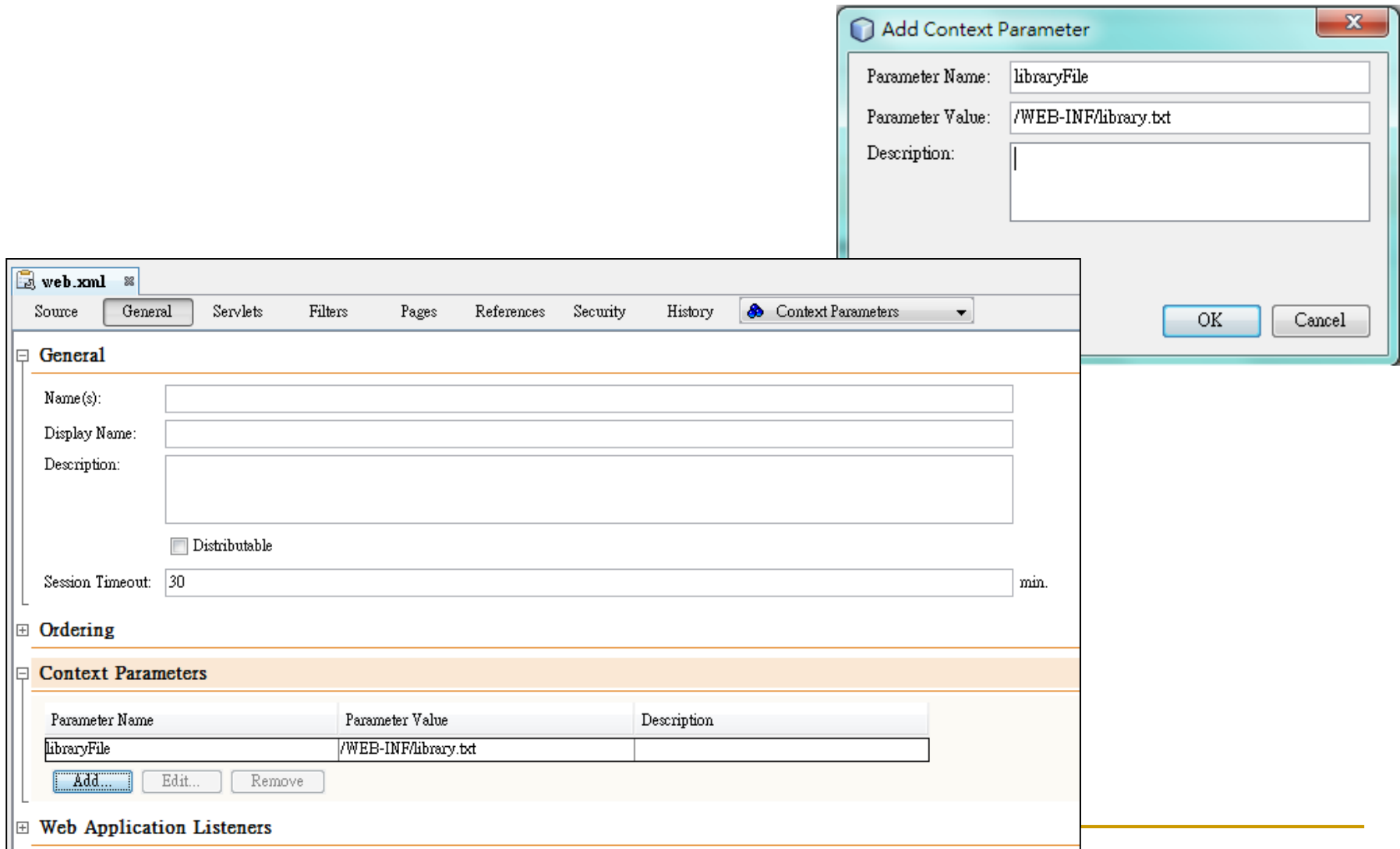
web.xml


```
1    <?xml version="1.0" encoding="UTF-8"?>
2
3    <web-app xmlns="http://java.sun.com/xml/ns/javaee"
4             xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
5             xsi:schemaLocation="http://java.sun.com/xml/ns/javaee http://java.sun.com/xml/ns/javaee/web-app_3_0.xsd"
6             version="3.0">
7        <session-config>
8            <session-timeout>
9                30
10           </session-timeout>
11       </session-config>
12   </web-app>
13
```
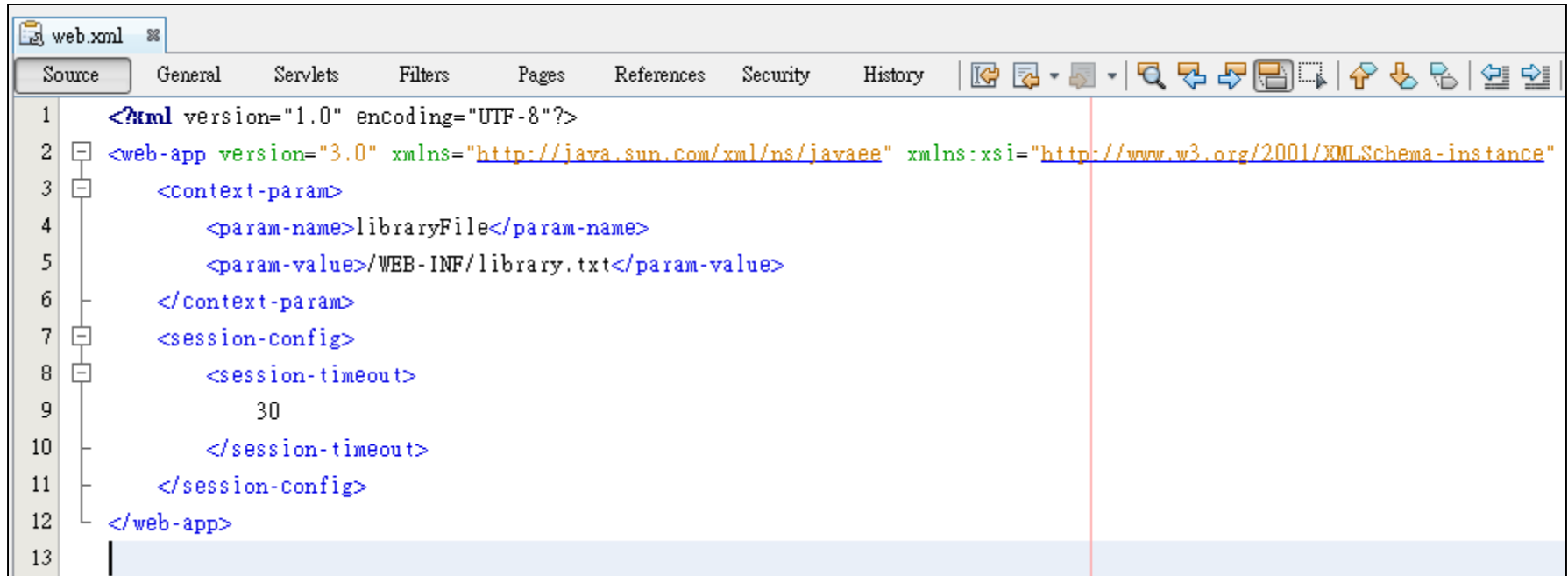
新增初始參數至 web.xml

web.xml

測試、執行

DVD資料庫

- 顯示所有DVD
- 新增ＤＶＤ

DVD Library 中有3片DVD

片名	年份	類型
Close Encounters of the Third Kind	1976	Sci-Fi
Star Wars	1977	Sci-Fi
Mission to Mars	2000	Sci-Fi

DVD Library 中有4片DVD

片名	年份	類型
Close Encounters of the Third Kind	1976	Sci-Fi
Star Wars	1977	Sci-Fi
Mission to Mars	2000	Sci-Fi
Life of PI	2012	Sci-Fi

新增 ＤＶＤ

片名: Life of PI

年份: 2012

類型: Sci-Fi 或其他種類:

儲存

新增DVD成功

您新增了一部DVD:

片名: Life of PI
發行年份: 2012
類型: Sci-Fi

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