

# Java Web Basic

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## Servlet & JSP

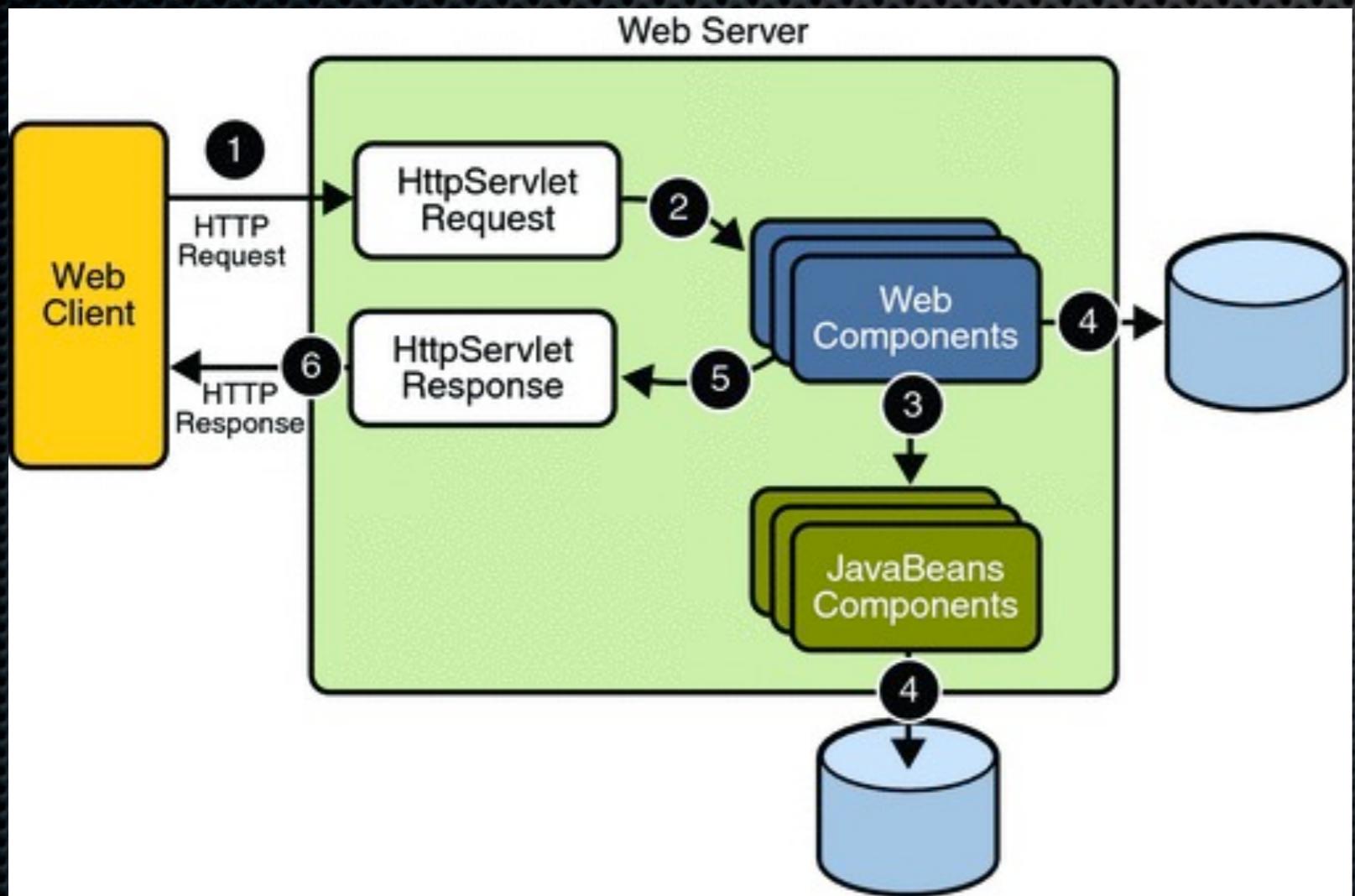
Ji Hao

# Servlet

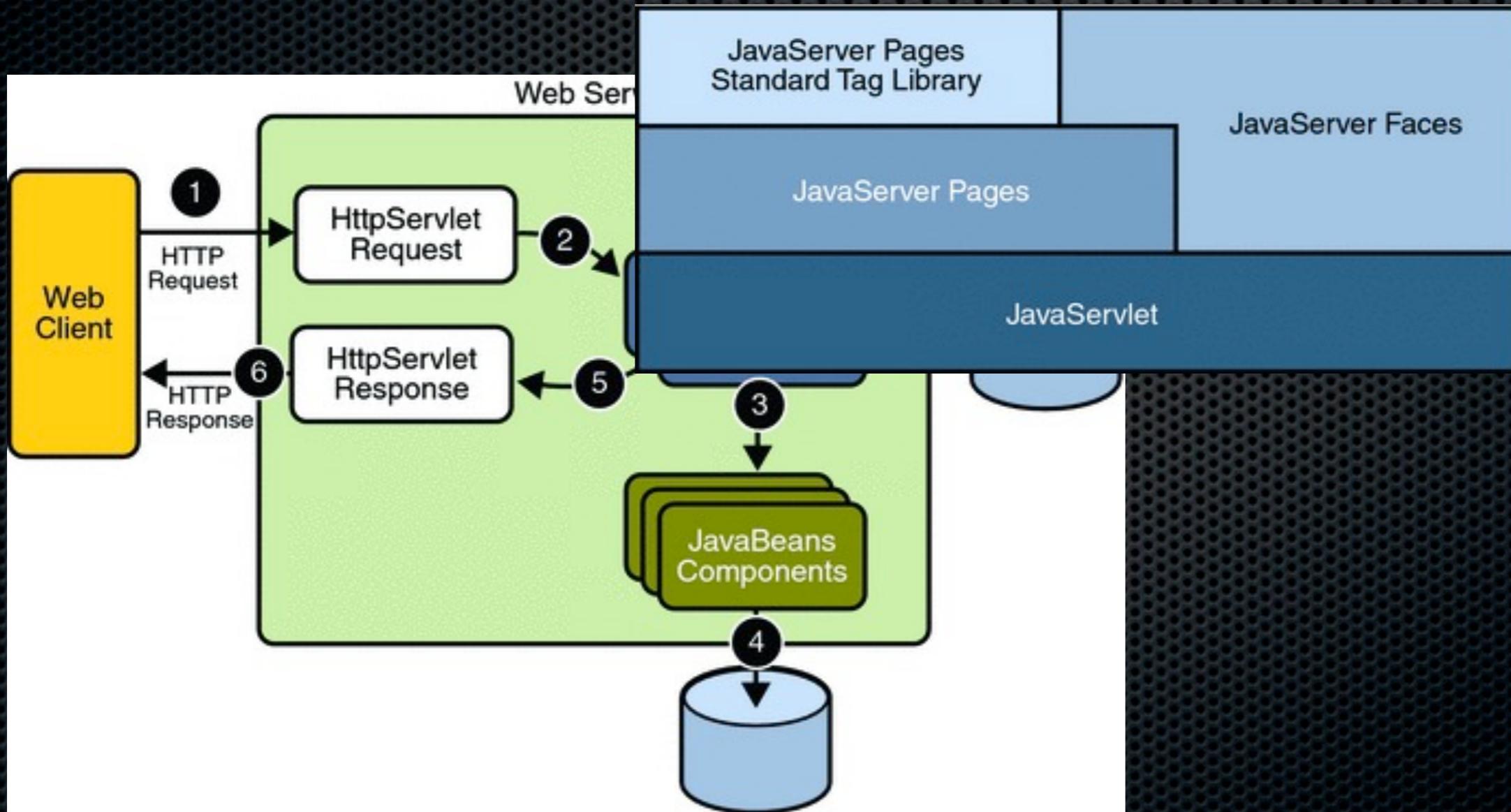
- CGI vs. Servlet
- Servlet vs. JSP
- JSP vs. ASP

**Live Demo - first servlet**

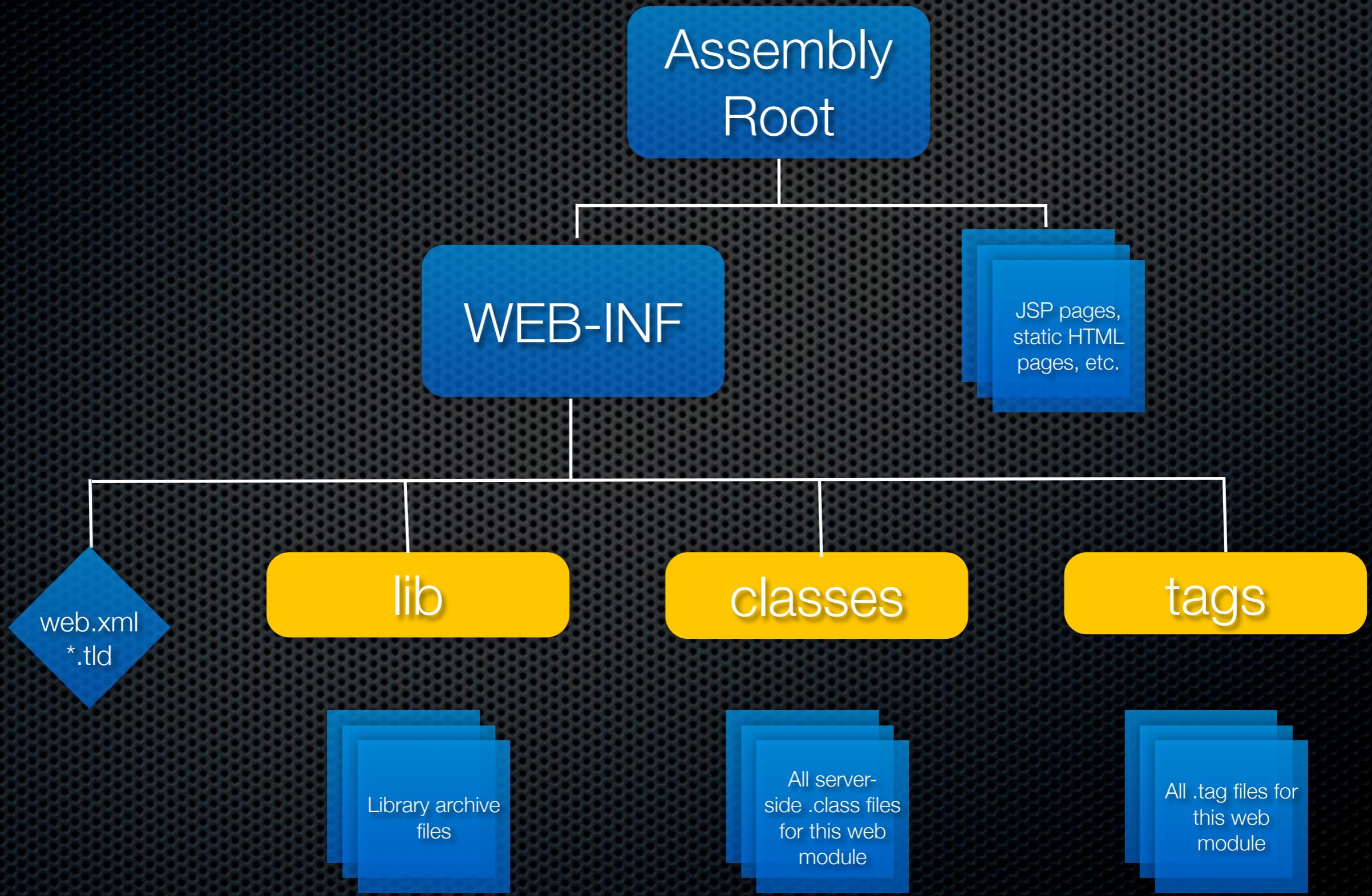
# Java Web Application Request Handling



# Java Web Application Request Handling



# Web Application Structure



# Deployment Descriptor (web.xml)

- welcome file
- servlet / servlet-mapping
  - init parameters
- filter / filter-maping
- error-page
- listeners
- context-parameters
- ...

# Servlet life cycle

Class loading  
instantiation  
`init()`  
`service()`  
`destroy()`

# Servlet life cycle

- The life cycle of a servlet is controlled by the container in which the servlet has been deployed. **When a request is mapped to a servlet, the container performs the following steps.**
- If an instance of the servlet does not exist, the web container
  - Loads the servlet class.
  - Creates an instance of the servlet class.
  - **Initializes the servlet instance by calling the init method.**
- Invokes the **service** method, passing request and response objects.
- If the container needs to remove the servlet, it finalizes the servlet by calling the servlet's destroy method.

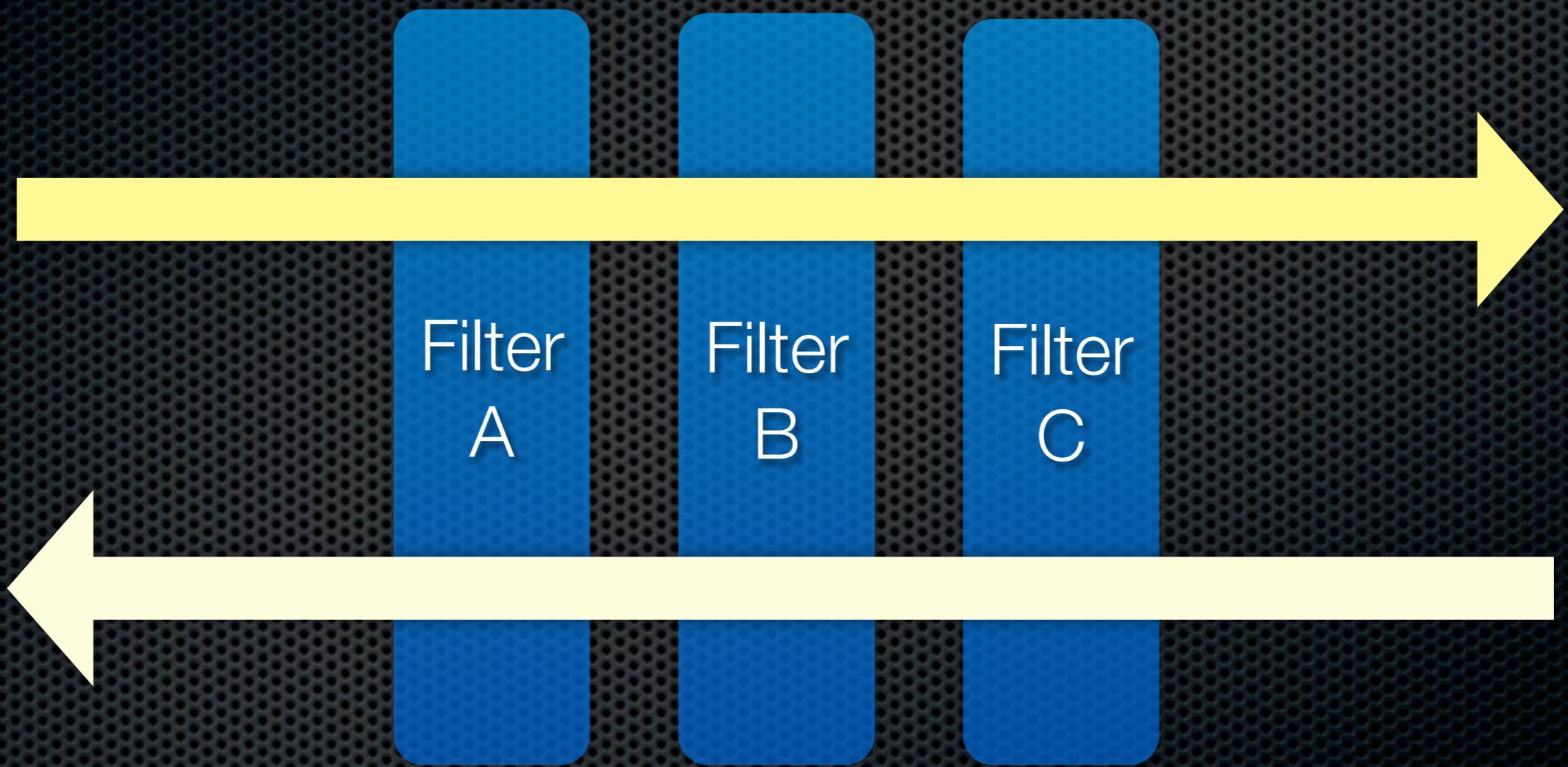
# Servlet thread model

- multi-thread (service method)
- A servlet must be able to handle multiple concurrent requests.

# Assignment 1

- keep track of how many threads currently running on the FirstServlet
- tip: <http://docs.oracle.com/javaee/5/tutorial/doc/bnags.html>

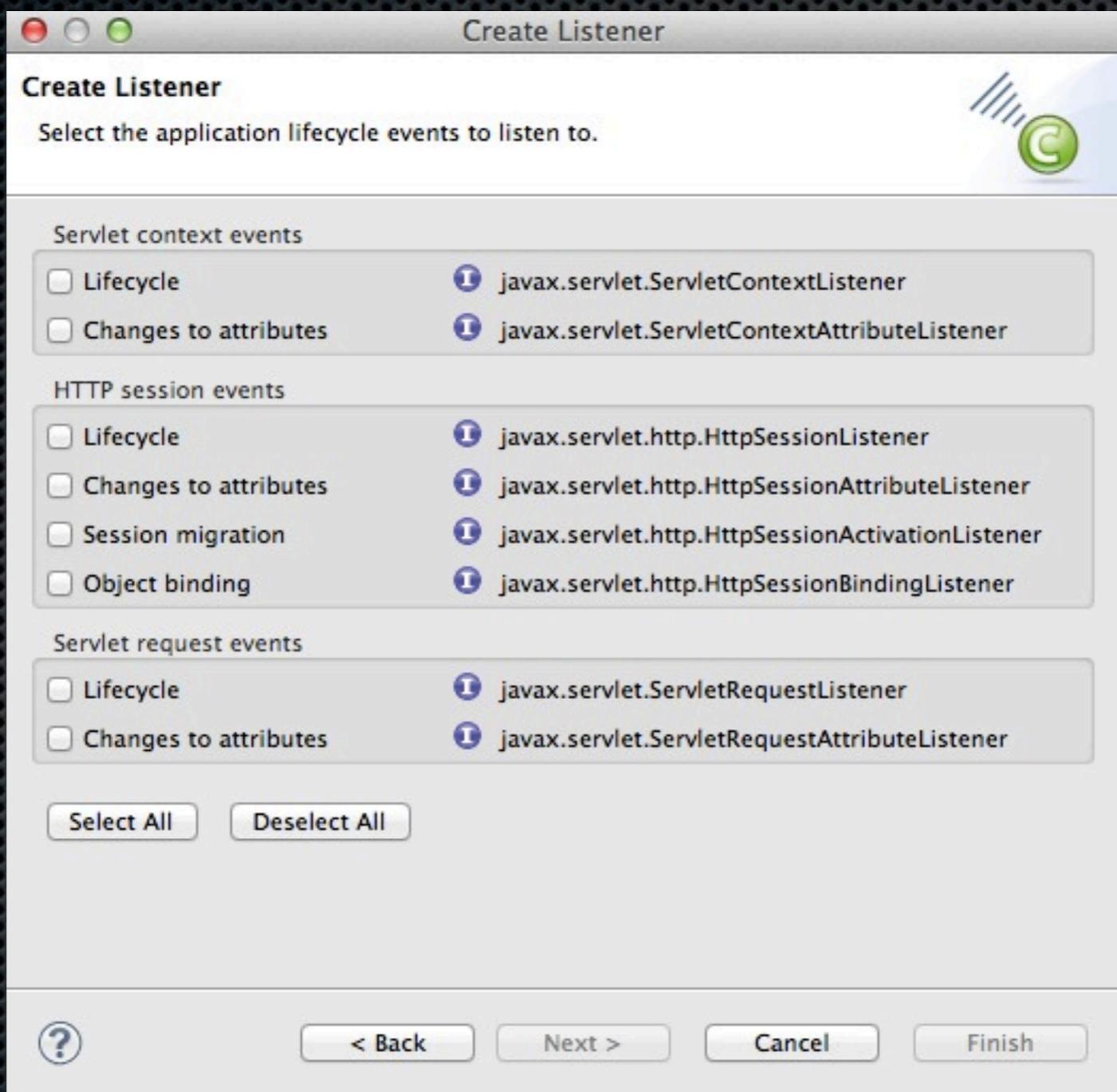
# Filter Chain



```
chain.doFilter(request, response);
```

Live Demo

# Listeners



# GET & POST

<form method="GET" action="/list" >

http://\*.com/list?id=abc

```
protected void  
doGet(HttpServletRequest request,  
HttpServletResponse response)  
throws ServletException, IOException  
{
```

indempotent

<form method="POST" action="/list" >

http://\*.com/list

```
protected void  
doPost(HttpServletRequest request,  
HttpServletResponse response) throws  
ServletException, IOException {
```

html

url

servlet  
code

diff

Live Demo

12年3月21日星期三

What is the maximum length of a URL?

<http://www.boutell.com/newfaq/misc/urllength.html>

从这一步开始，用一个简单的用户管理系统作为LiveDemo的线索

# Servlet Request

- fetching parameters

**Live Demo**

# Servlet Response

- forward
- redirect
- flow control with servlet
- flow control with jsp standard action

**Live Demo**

# Session & Cookie

- Difference?
- Where was it stored?

Live Demo

# Session & Cookie

- Difference?
- Where was it stored?

Live Demo

# Assignment 2

- implement a remember me function based on current login function

# JSP

- JavaServer Pages
- static + dynamic

**Live Demo**

# JSP implicit objects

- request, response, out, session, application, config, pageContext, page, exception

# JSP Actions

- <jsp: include />
- <jsp: forward />
- <jsp: useBean />
- <jsp: getProperty />
- <jsp: setProperty />

# JSP JSTL & EL

```
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
```

- **Core:** <http://java.sun.com/jsp/jstl/core>
- **XML:** <http://java.sun.com/jsp/jstl/xml>
- **Internationalization:** <http://java.sun.com/jsp/jstl/i18n>
- **SQL:** <http://java.sun.com/jsp/jstl/sql>
- **Functions:** <http://java.sun.com/jsp/jstl/functions>

Table 7-1 JSTL Tags

Area	Subfunction	Prefix
Core	Variable support	c
	Flow control	
	URL management	
	Miscellaneous	
XML	Core	x
	Flow control	
	Transformation	
I18N	Locale	fmt
	Message formatting	
	Number and date formatting	
Database	SQL	sql
Functions	Collection length	fn
	String manipulation	

# JSP EL implicit objects

- There are three types of JSTL EL implicit objects:
  - Maps for a single set of values, such as request headers and cookies:
    - param, paramValues, header, headerValues, initParam, cookie
  - Maps for scoped variables in a particular scope:
    - pageScope, requestScope, sessionScope, applicationScope
  - The page context: pageContext

# Assignment 3

- implement the view, edit, delete function based on current code.

# Q&A

# References

- <http://docs.oracle.com/javaee/5/tutorial/doc/bnadv.html>