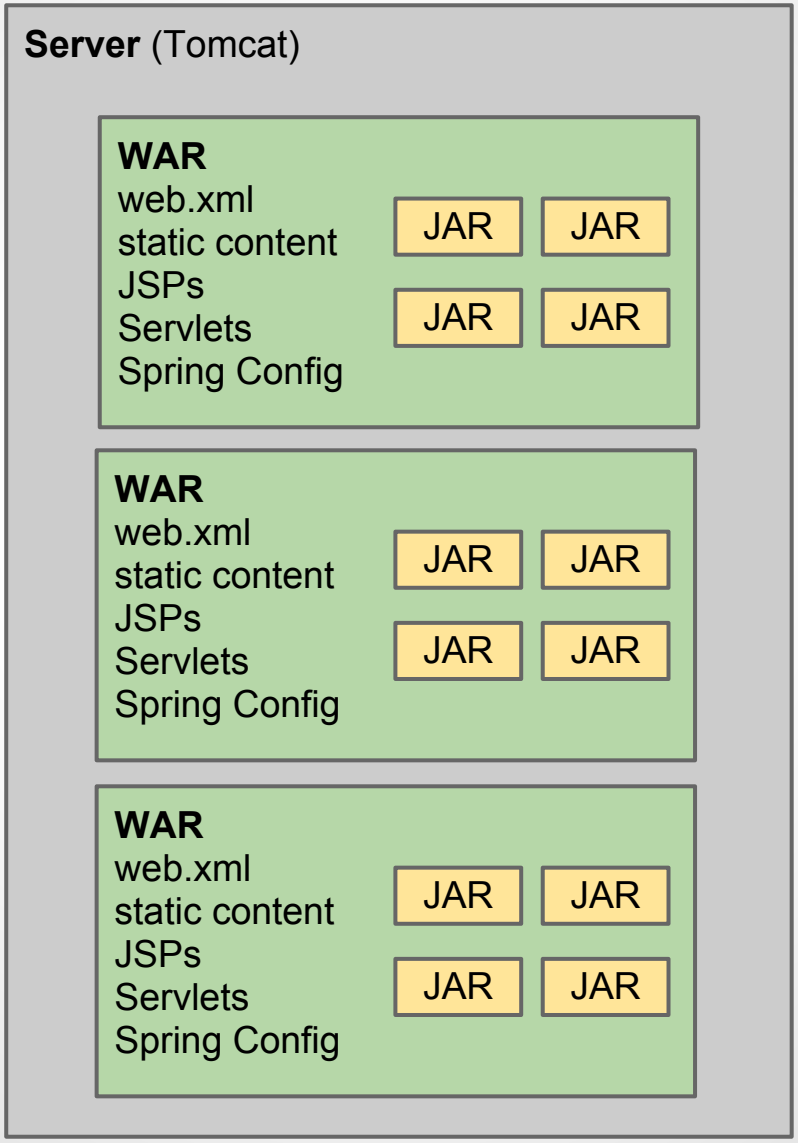
JSPs & Servlets & Stuff

EARs, WARs, and JARs - OH My!

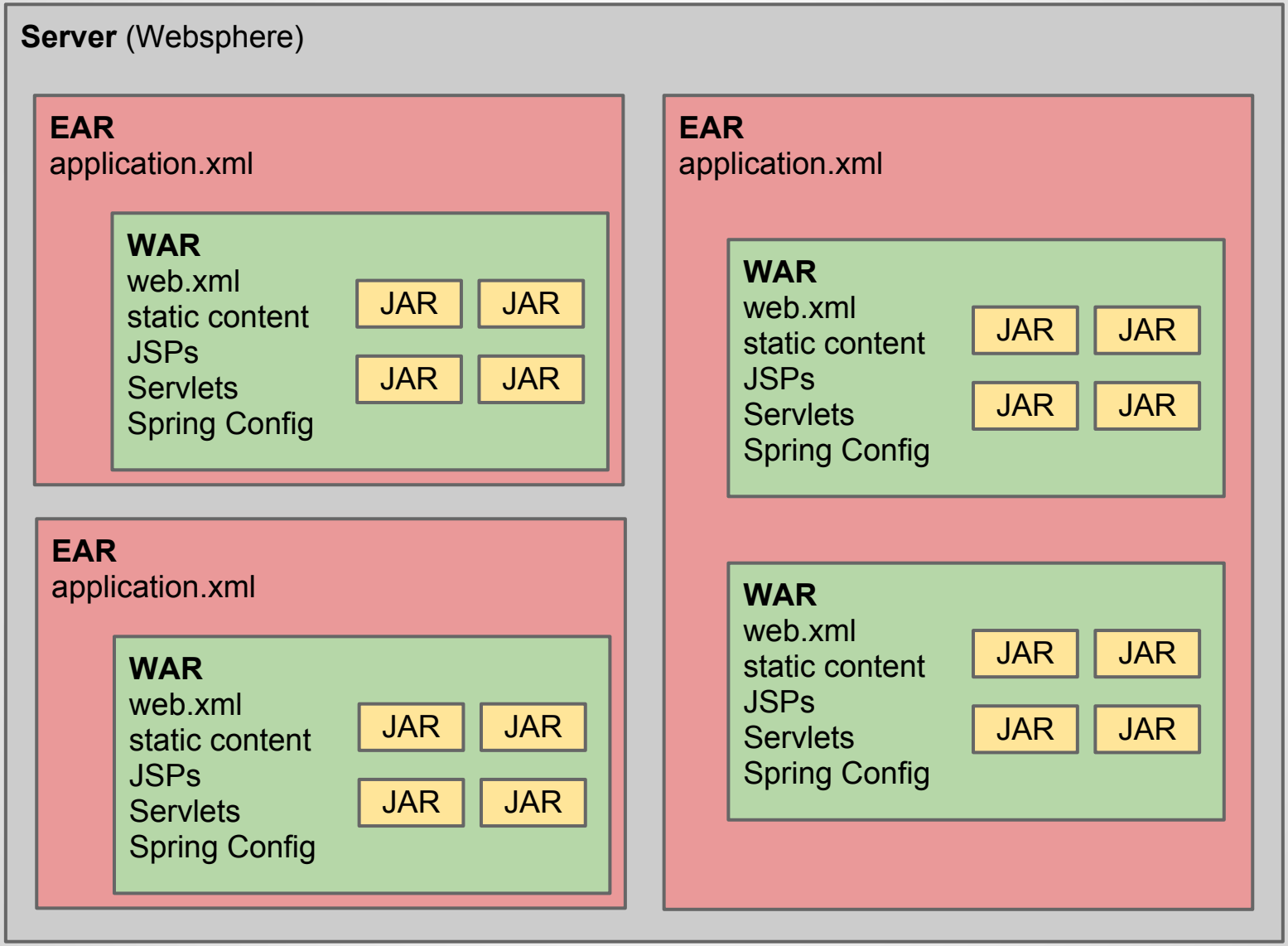
Alphabet Soup

- **E**nterprise **AR**chive (contains JARs & WARs)
- **W**eb **AR**chive (contains code & JARs)
- **J**ava **AR**chive (contains code)

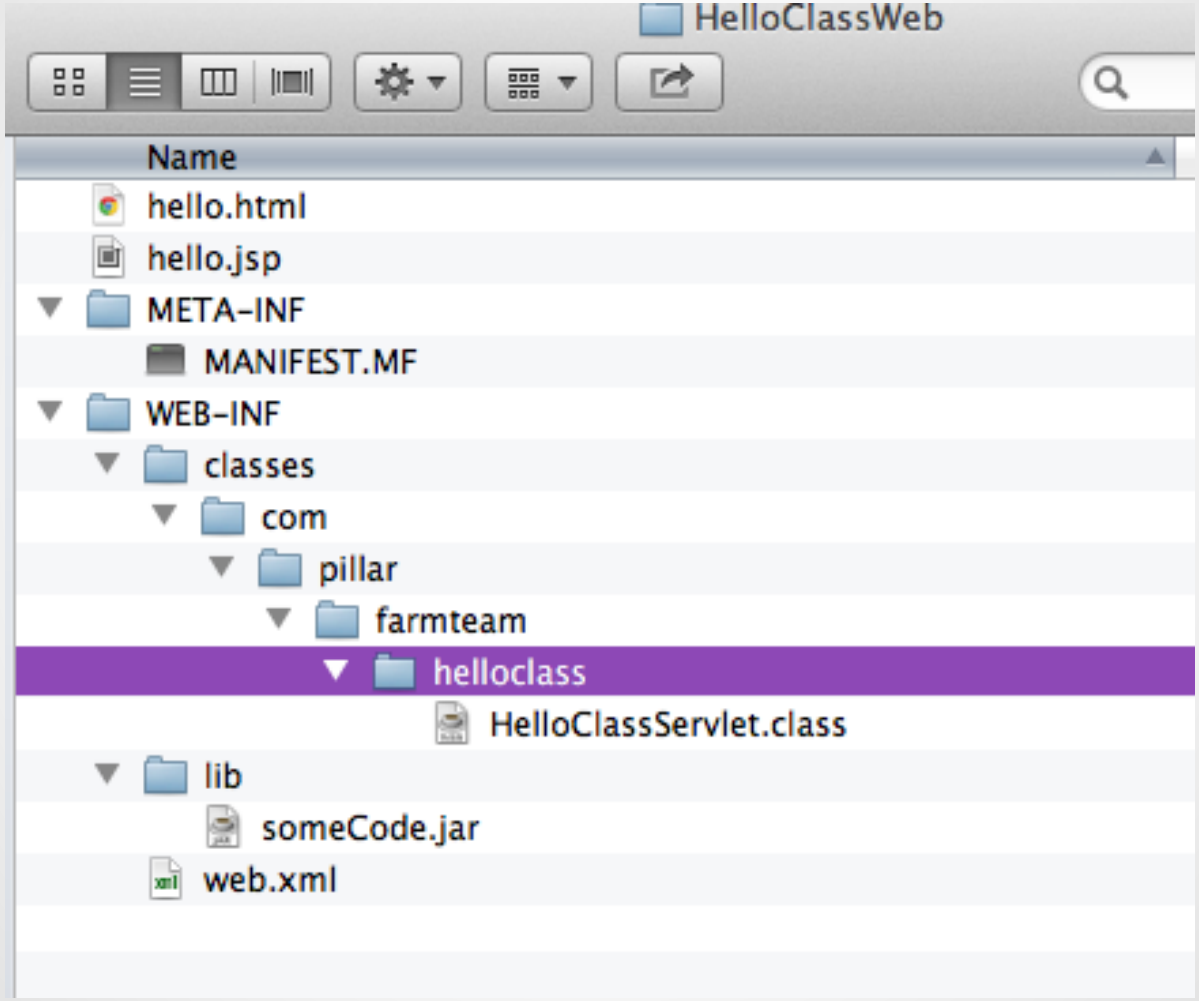
How do they all fit together?



and for funsies...



How is a WAR laid out?



What's in web.xml?

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xmlns="http://java.sun.com/xml/ns/javaee"
        xmlns:web="http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd"
        xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
                http://java.sun.com/xml/ns/javaee/web-app_3_0.xsd"
        id="WebApp_ID" version="3.0">

        <display-name>HelloClassWeb</display-name>

        <welcome-file-list>
                <welcome-file>hello.html</welcome-file>
                <welcome-file>hello.jsp</welcome-file>
        </welcome-file-list>

</web-app>
```

Servlets

So what is a servlet?

It is a java class that handles web requests.

```
public class HelloClassServlet extends HttpServlet {

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

		response.getWriter().println("Hello! I was called with GET");
	}

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

		response.getWriter().println("Hello! I was called with POST");
	}

}
```

How do I call this thing?

Get

http://localhost:8080/HelloClassWeb/helloClass

http://localhost:8080/HelloClassWeb/helloClass?name=Bob&age=42

Post

You can post via a form in your html. The data in your form can be referenced in your servlet via the form element name.

How do I take in data?

```
public class HelloClassServlet extends HttpServlet {

	protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
			ServletException, IOException {
		String [] name = request.getParameter("name");
		response.getWriter().println("Hello " + name[0] + "! I was called with GET");
	}
}
```

Glueing the url to the servlet

```
<web-app>
...
        <servlet>
                <servlet-name>helloClass</servlet-name>
                <servlet-class>com.pillar.farmteam.helloclass.HelloClassServlet</servlet-class>
        </servlet>
        <servlet-mapping>
                <servlet-name>helloClass</servlet-name>
                <url-pattern>/helloClass</url-pattern>
        </servlet-mapping>
...
</web-app>
```

Data Scope

Data... how long does it live?

Data is available depending on the scope in which it's referenced

The 4 scopes are:

Page Scope

Objects with page scope are accessible only by the page that created it. The data is valid only during the processing of the current response.

Request Scope

Objects with request scope are accessible from pages processing the same request in which they were created. It can be forwarded to another page. It will not be available on a redirect.

Session Scope

Objects with session scope are accessible from pages processing requests that are in the same session as the one in which they were created. This is until the user either closes the browser or logs out of the application.

Application Scope

Objects with application scope are accessible from JSP pages that reside in the same application. This creates a global object that's available to all pages.

Scope Example?

Should we do this??

JSPs and You

JSP - why?

It allows you to get back dynamic data from the servlet and render it on the screen.

Scriptlets

```
<%@ page language="java" %>

<HTML>
  <BODY>

        <h2>Hello my name is: <%= session.getAttribute("name")%></h2>
        <p>You have visited <%= session.getAttribute("visitCount")%>
        <%
                Integer visitCount = (Integer)session.getAttribute("visitCount")
                if(visitCount == 1) {
        %>
                time
        <% } else { %>
                times
        <% } %>
        </p>
   </BODY>
</HTML>
```

JSTL

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

<HTML>
  <BODY>

        <h2>Hello my name is: <%= session.getAttribute("name")%></h2>
        <c:set var="visitCount" value="${session.getAttribute('visitCount'}" />
        <p>You have visited <c:out value="${visitCount}" />
        <c:choose>
              <c:when test="${visitCount == 1}">time</c:when>
              <c:otherwise>times</c:otherwise>
         </c:choose>
         </p>
   </BODY>
</HTML>
```

http://jstl.java.net/

You can use external code too!

```
<%@ page import="java.util.Date" %>
<%@ page import="com.pillar.farmteam.SomeUtility" %>
<HTML>
<BODY>

<%
        System.out.println( "Evaluating date now" );
        SomeUtility.printMyStuff();
        Date date = new Date();
%>

Hello!  The time is now <%= date %>
</BODY>
</HTML>
```