All You Ever Wanted To Know About Servlets

But Were Afraid to Ask

Three Embedded Scripting Languages

- **ASP** is proprietary to Microsoft and only works on certain servers
- **JSP** is an open standard for use with many servers
  - Built on Java
- **PHP** is open source freeware
- All allow you to insert code, objects, and do text substitutions in webpages

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Java Servlets

- Not as simple to use as JSP, but easier to install
- We don't have JSP at Dal FCS

- Run on the server (like SSI or CGI)
- Threaded (unlike SSI or CGI)
- Run inside the single JVM owned by **`http`**

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But what about `mod_perl`?

- `mod_perl` is server-side and light weight (like a thread)
- Java has some network support that is more sometimes more convenient than using perl
- Particularly for session tracking

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Session Tracking With Servlets

Programs written in java produce output which is sent to the client like any CGI program

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Session Tracking With Servlets

- All servlets implement the `Servlet` interface or extend a class the implements it
- Important methods:

```
Init          Service          Destroy

getServletConfig  getServletInfo
```

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Common Methods

- We will use **`HttpServlet`** and these methods:
  - **`doGet`**
  - **`doPost`**
  - **`doPut`**
  - **`doDelete`**
  - **`init`**
  - **`destroy`**
  - **`getServletInfo`**
- One of those methods must be overridden for each servlet

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Example: Hello Servlet

- Source Code
- Run it
- See Compilation Record
- Must be compiled and run from borg
- Note how it overrides the `doGet` method
- Which process runs the servlet?

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Session Tracking

Four ways to maintain state:

1. Cookies
2. Hidden fields in `form`s
3. URL rewriting
4. Servlets
   - Will use cookies if possible
   - Will use URL rewriting if no cookies

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How Does The Servlet Track The Session?

- Each session has a unique ID
- The first time a session is begun an ID is assigned
- Every subsequent connection must send the ID (through a cookie or the URL)

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Servlet Sessions

- **`HttpSession session = request.getSession();`**
- If `null` then this is a new session
- Force a new session like this…

```
request.getSession(true);
```

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Storing Information in Sessions

- **`setAttribute`**(String name, Object value)
- **`getAttribute`**(String name)
- **`removeAttribute`**(String name)
- **`getAttributeNames`**()

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Information About Sessions

- `getId()`
- `isNew()`
- `getCreationTime()`
- `getLastAccessedTime()`
- `getMaxInactiveInterval()`

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Example: Session Tracking

- Source Code
- Run it

Note the encoding of the URL

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Questions?

- Which process executes the servlets?
- How are they like CGI programs?
- How are they different from CGI programs?
- What advantages do they have over other technologies we've seen so far?

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