

CS320 Web and Internet Programming

Generating HTTP Responses

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HTTP Response Example

```
HTTP/1.1 200 OK
Content-Type: text/html;charset=ISO-8859-1
Content-Length: 168
Date: Sun, 03 Oct 2004 18:26:57 GMT
Server: Apache-Coyote/1.1
```

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
<html><head><title>Servlet Life Cycle</title></head>
<body>
n is 299 and m is 440
</body>
</html>
```

HTTP Response

- ◆ Status line
 - Protocol
 - Status code
- ◆ Header
- ◆ [Message body]

Common Status Codes

- ◆ 200 (OK)
- ◆ 401 (Unauthorized)
- ◆ 403 (Forbidden)
- ◆ 404 (Not Found)
- ◆ 500 (Internal Server Error)

Status Codes

- ◆ 100 – 199: Informational. Client should respond with further action
- ◆ 200 – 299: Request is successful
- ◆ 300 – 399: Files have moved
- ◆ 400 – 499: Error by the client
- ◆ 500 – 599: Error by the server

Redirect Codes

- ◆ 301 (Moved Permanently)
 - GET
- ◆ **302** (Found)
 - a.k.a. (Moved Temporarily)
 - GET
- ◆ 303 (See Other)
 - GET *and* POST
- ◆ 307 (Temporary Redirect)
 - GET but *not* POST

<error-page> in web.xml

- ◆ Showing customized error pages for common errors, e.g. 404 Page Not Found

- ◆ Example:

```
<error-page>
  <error-code>404</error-code>
  <location>/WEB-INF/404.html</location>
</error-page>

<error-page>
  <error-code>403</error-code>
  <location>/WEB-INF/403.html</location>
</error-page>
```

Header Fields

- ◆ Request

- Accept
- Accept-Charset
- Accept-Encoding
- Accept-Language
- Connection
- Content-Length
- Cookies

- ◆ Response

- Content-Type
- Content-Encoding
- Content-Language
- Connection
- Content-Length
- Set-Cookie

More Response Header Fields

- ◆ Location
 - for redirect
- ◆ Refresh
 - "Push"
 - Incremental display
- ◆ Content-Disposition (RFC2183)

RFC2616, Section 14
<http://www.w3.org/Protocols/rfc2616/rfc2616-sec14.html>

HttpServletResponse

- ◆ <http://download.oracle.com/javaee/6/api/javax/servlet/http/HttpServletResponse.html>

Header Methods in HttpServletResponse

- ◆ addHeader(), setHeader()
- ◆ addIntHeader(), setIntHeader()
- ◆ addDateHeader(), setDateHeader()
- ◆ containsHeader()

More HttpServletResponse Methods

- ◆ setContentype(String type)
- ◆ sendRedirect(String location)
 - Set status code to 302
 - Relative URL with a leading "/" is relative to the server root
- ◆ getWriter()
 - For text responses, e.g. HTML pages
- ◆ getOutputStream
 - For binary responses, e.g. images

Example: Add Revisited

- ◆ Redirect the user back to the input form if the parameters are missing or invalid
 - `sendRedirect()`

Example: Countdown

- ◆ Automatically refreshes the display every second
 - The `Refresh` header

Example: Download

- ◆ Download an image file from the server
 - File I/O
 - Content type
 - Binary response
 - The `Content-Disposition` header

HTTP Response as Program Output

- ◆ Understand the HTTP response format
- ◆ Remember the status code ranges and the common status codes
- ◆ Use of headers to generate non-HTML responses
- ◆ And it's still Java!