

## 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>/404.html</location>
</error-page>

<error-page>
  <error-code>403</error-code>
  <location>/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
- ◆ Cache-Control, Expires, Pragma
  - for cache policies

## HttpServletResponse

- ◆ [http://java.sun.com/products/servlet/2.5/docs/servlet-2\\_5-mr2/javax/servlet/http/HttpServletResponse.html](http://java.sun.com/products/servlet/2.5/docs/servlet-2_5-mr2/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 )
  - 302
  - Handle relative URL
- ◆ 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 "special" responses
- ◆ And it's still Java!