Advanced Internet Technology Lab

Lab # 6

HTTP Status Codes

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Objectives

- To be familiar with HTTP response format.
- To know what are the status codes and how to set them.

HTTP Response Format

Status Line

The status line consists of:

- HTTP version (HTTP/1.1 in the preceding example).
- A status code (an integer; 200 in the example).
- A very short message corresponding to the status code (OK in the example).

What are the Status Codes?

Status Code is the status of the HTTP response, it tells the browser what it will represent to the user.
HTTP 1.1 Status Codes

Status Codes fall into five general categories:

- **100–199**
  Codes in the 100s are informational, indicating that the client should respond with some other action.

- **200–299**
  Values in the 200s signify that the request was successful.

- **300–399**
  Values in the 300s are used for files that have moved and usually include a Location header indicating the new address.

- **400–499**
  Values in the 400s indicate an error by the client.

- **500–599**
  Codes in the 500s signify an error by the server.

**Common HTTP 1.1 Status Codes**

**200 (OK)**
- Everything is fine; document follows.
- Default for servlets.

**302 (Found)**
- Requested document temporarily moved elsewhere (indicated in Location header).
- Browsers go to the new location automatically.
- Servlets should use sendRedirect, not setStatus, when setting this header.

**404 (Not Found)**
- No such page.
- Servlets should use sendError to set this.
Setting Arbitrary Status Codes: setStatus

The setStatus method of HttpServletResponse is used to set an arbitrary status code of the response. A code of 200 is set automatically, so servlets don’t usually need to specify a status code at all.

**Note:**
Set status codes **before** sending any document content to the client.

- `response setStatus(int statusCode)`

The setStatus method takes an int (the status code) as an argument, but instead of using explicit numbers, for readability and to avoid typos, use the constants defined in HttpServletResponse. The name of each constant is derived from the standard HTTP 1.1 message for each constant, all upper case with a prefix of SC (for Status Code) and spaces changed to underscores.

Setting 302 and 404 Status Codes

- `response.sendRedirect(String URL)`

It sets status code to 302. Also, it sets **Location** response header to the given URL.

**Note:**
The constant representing 302 is SC_MOVED_TEMPORARILY, not SC_FOUND.

- `response.sendError(int code,String message)`.

The sendError method sends a status code (usually 404) along with a short message that is automatically formatted inside an HTML document and sent to the client.
Example: A Front End to Various Search Engines

You want to let users enter a query, select the search engine, and then send them to that search engine’s results page for that query. If users omit the search keywords or fail to select a search engine, you have no site to redirect them to, so you want to display an error page informing them of this fact.

Form1.html

```html
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Search Engine</title>
</head>
<body>
<h1>WEB SEARCH</h1>
<form action="http://localhost/StatusCodes/engine">
  Search Keywords<br>
  <input type="text" name="keywords" />
  Choose Your Search Engine: <br>
  <input type="radio" name="engine" value="Google"> Google<br>
  <input type="radio" name="engine" value="MSN"> MSN<br>
  <input type="radio" name="engine" value="Yahoo"> Yahoo<br>
  <input type="Submit" value="OK"/>
</form>
</body>
</html>
```

Running
Engine Servlet

```java
protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
    response.setContentType("text/html");
    PrintWriter out=response.getWriter();
    String keywords= request.getParameter("keywords");
    String Engine=request.getParameter("engine");
    if((keywords=="" & Engine==null){
        response.sendError(404,"Missing Search Keywords and Engine");
        return;
    }
    else if(keywords==""){
        response.sendError(404,"Missing Search Keywords");
        return;
    }
    else if(Engine==null){
        response.sendError(404,"Missing Search Engine");
        return;
    }
    else{
        keywords=URLEncoder.encode(keywords);
        String URL="";
        if(Engine.equals("Google"))
            URL="http://www.google.com/search?q="+keywords;
        else if(Engine.equals("MSN"))
            URL="http://www.bing.com/search?q="+keywords;
        else if(Engine.equals("Yahoo"))
            URL="http://search.yahoo.com/bin/search?p="+keywords;
        response.sendRedirect(URL);
    }
}
```

The Output:

![Image of search engine interface and error report]
Exercise

Most major browsers contain the string Mozilla in their User-Agent header, but only Microsoft Internet Explorer contains the string MSIE.

Write a servlet that use of this fact to send Internet Explorer users to the Microsoft home page, and all other users to the Google home page.