CS320 Web and Internet Programming
Handling HTTP Requests

Chengyu Sun
California State University, Los Angeles

Echo Server

- \texttt{http://cs.calstatela.edu:4040}
- Display HTTP requests

HTTP Request Example

\textit{http://cs.calstatela.edu:4040/whatever}

\textbf{GET} /whatever HTTP/1.1
Host: cs.calstatela.edu:4040
User-Agent: Mozilla/5.0 (Windows; U; Windows NT 5.0; en-US; rv:1.7.3) (...)
Accept: text/html,application/xhtml+xml,application/xml,text/json,text/plain
Accept-Language: en-us,en;q=0.5
Accept-Encoding: gzip, deflate
Accept-Charset: ISO-8859-1; utf-8;q=0.7,*;q=0.7
Keep-Alive: 300
Connection: keep-alive
Cookie: net/gateway.dll/id=4B4C5D72; SETESERVER=ID=1F675...

HTTP Request

- Request line
  - Method
  - Request URI
  - Protocol
- Header
- [Message body]

Request Methods

- Actions to be performed regarding the resource identified by the \textit{Request URI}
  - Browser
    - GET
    - POST
  - Editor
    - PUT
    - DELETE
  - Diagnosis
    - HEAD
    - OPTIONS
    - TRACE

HttpServlet Methods

- service()
  - GET \rightarrow \texttt{doGet()}
  - POST \rightarrow \texttt{doPost()}
  - PUT \rightarrow \texttt{doPut()}
  - DELETE \rightarrow \texttt{doDelete()}
  - HEAD \rightarrow \texttt{doHead()}
  - OPTIONS \rightarrow \texttt{doOptions()}
  - TRACE \rightarrow \texttt{doTrace()}
Override HttpServlet Methods

- Default implementation returns an HTTP Bad Request error
- doGet(), doPost()
  - Simply call one method from the other

Request Header Fields

- User-Agent
- Accept
- Accept-Charset
- Accept-Encoding
- Accept-Language
- Host
- Connection/Keep-alive
- Content-Length
- Cookie
- Referer

HttpServletRequest

- getThis(), getThat(), ...
- http://jakarta.apache.org/tomcat/tomcat-5.0-
doc/servletapi/javax/servlet/HttpServletRequest.html

HttpServletRequest Exercises

- List all header fields
- Find the client address
- Is gzip compression supported?

Request Parameters

- Query string
  - ?param1=value1&param2=value2&...
- Form data

Parameter Methods

- Inherited from ServletRequest
  - String getParameter(String p)
  - Enumeration getParameterNames()
  - String[] getParameterValues()
  - Map getParameterMap()
Parameter Examples

- A+B = C
- File read

HTML Forms

- `<form>`
  - action – URL of the server-side program that process the submitted form data
  - method – GET or POST
  - enctype
    - multipart/form-data
      - for file uploading
      - require POST

<input>

- name
- value
- type
  - Text field ??
  - Password field ??
  - Submit button ??
  - Reset button ??
  - Check box ??
  - Radio button ??

<textarea>

- name
- rows
- cols

<select>

- name
- size
- multiple
- `<option value="something">some text`

JavaScript Controls

- Button
- `onthis, onthat, ...`
Form Example – Guestbook

- Filter HTML characters
  - `<`: &lt;
  - `>`: &gt;
  - `"`: &quot;
  - `&`: &amp;

HTTP Request as User Input

- **HTTP**
  - Request line and header fields
  - Query string
  - Form data
- **Servlet classes**
  - HttpServletRequest and HttpServletRequest
  - It’s still Java!
    - Strings, streams, Enumerations, ArrayLists ...