CS320 Web and Internet Programming
Handling HTTP Requests

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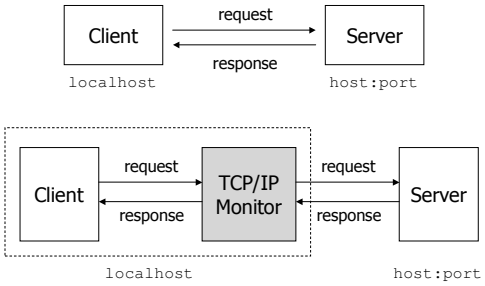
TCP/IP Monitor in Eclipse ...



... TCP/IP Monitor in Eclipse

- `Window` → `Preferences` → `Run/Debug` → `TCP/IP Monitor`
- Example: monitor the access of http:///sun.calstatela.edu/~cysun/index.html
  - *Local Monitoring Port?? Host?? Port??*
  - *Browser URL??*

HTTP Request Example

http://cs.calstatela.edu:4040/foo

GET /foo 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/xml,application/xml,application/xhtml+xml,text/html;q=0.9,...
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: nxt/gateway.dll/uid=4B4CF072; SITESERVER=ID=f1675...

HTTP Request

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

Request Methods

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

HttpServlet Methods

service()

- GET → doGet()
- POST → doPost()
- PUT → doPut()
- DELETE → doDelete()
- HEAD → doHead()
- OPTIONS → doOptions()
- TRACE → 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

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

HttpServletRequest

- get*Xxx*() methods
- http://download.oracle.com/javaee/6/api/javax/servlet/http/HttpServletRequest.html

Example: RequestInfo

- Display some request information
  - Method, request URI, request URL ...
- Display the IP address of the client
- Determine if gzip compression supported

Request Parameters

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

Example: Add

- Get two integers from request parameter and display the sum

Parameter Methods

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

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

Understand URL

- Absolute URL
- Relative URL
  - Relative to server root
  - Relative to application root
  - Relative to current URL

<input>

- name
- value
- type
  - Text field ??
  - Password field ??
  - Submit button ??
  - Reset button ??
  - Check box ??
  - Radio button ??
- more types
  - File upload
  - Hidden field

<textarea>

- name
- rows
- cols

<select>

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

Example: Guest Book

My Guest Book

John says:	Hello!
Jane says:	Your website looks nice.
Joe says:	Nice to meet you. I'm from China.

Add Comment

My Guest Book – Add Comment

Your name:

Submit

Guest Book Implementation

- Data
  - `GuestBookEntry`
  - `List<GuestBookEntry>`
- Display
  - Create some test data
- Update
  - Display form using `doGet()`
  - Process form using `doPost()`
  - `response.sendRedirect()`

Filter HTML Special Characters

- <: `<`
- >: `>`
- &: `&`
- ": `&quot;`
- ': `&apos;`

HTTP Request as User Input

- HTTP Request
  - Request line and header fields
  - Query string
  - Form data
- Important classes
  - `HttpServletRequest` and its superclass `ServletRequest`
- It's still Java!