HTTP Parsing

Athula Balachandran
Wolfgang Richter
Homework 1

- Please write your name and andrew id
  - 2 answer sheets without name, need to claim!
- Don’t just show calculations without any explanation.
  - Need partial credits?
- Please make it legible
  - If not, type it up!
PJ 2 CP 2

- GET, POST and HEAD requests
- Read the documents first to understand the rules.
- RFC 2616
- Check the annotated RFC
HTTP request

- Request =
  Request-Line ;
  *((( general-header ;
    request-header ;
    entity-header ) CRLF) ;
  CRLF [ message-body ] ;
HTTP response

• Response =
  Status-Line ;
  *(( general-header ;
    response-header ;
    entity-header ) CRLF) ;
  CRLF [ message-body ] ;
Tools

- Use tools to look at these requests and see the pattern for real
  - Wireshark
    - http://www.wireshark.org/
  - Use the dumper code
  - Play with the headers
    - Tamperdata
    - Poster
  - Online tools
    - http://web-sniffer.net/
Sample GET request


GET request was done on this page.
Do you see the pattern?
Sample POST request

POST method called while submitting this form. Can you identify the values that were submitted?
HEAD is similar to GET!
## Sample GET response

**HTTP/1.1 200 OK**

- **Date:** Wed, 28 Sep 2011 04:34:20 GMT
- **Server:** Apache/2.2.16 (Ubuntu)
- **Last-Modified:** Wed, 28 Sep 2011 04:30:32 GMT
- **ETag:** "14391f-79-4ad8db7b700"
- **Accept-Ranges:** bytes
- **Vary:** Accept-Encoding
- **Content-Encoding:** gzip

**Content-Length:** 116

- **Keep-Alive:** timeout-15, max=100
- **Connection:** keep-alive
- **Content-Type:** text/html

**Content-encoding entity body (gzip):** 116 bytes -> 121 bytes

**Line-based text data:** text/html

```html
<html>
<head>
</head>
<body>
It works!</h1>
Welcome to Athula’s page
</body></html>
```
Sample POST response

For this checkpoint you just have to send status code. More on dynamic content later!
Minimal Implementation

• Status codes
  – 200_OK
  – 404_NOT_FOUND
  – 411_LENGTH_REQUIRED
  – 500_INTERNAL_SERVER_ERROR
  – 501_NOT_IMPLEMENTED
  – 503_SERVICE_UNAVAILABLE
  – 505_HTTP_VERSION_NOT_SUPPORTED
Minimal Implementation

• General Headers
  – Connection
  – Date

• Response Headers
  – Server should always be: Liso/1.0

• Entity Headers
  – Content-Encoding
  – Content-Length
  – Content-Type
  – Last-Modified
Be careful with the buffers!

• Requests may straddle multiple recv calls
  – Need to maintain state information.
• If request header size > 8192 bytes
  – For now, send error message and disconnect.