COMP4621 Programming Project

Due Date: 23:59:00 May 5, 2015 (Tuesday)

1. Project requirements

In this project, we will implement a simple web server, which is able to:

- **Handle basic request of web page**
  This means that when client requests a webpage, say the default one "/", this web server should return a simple web page which shows your name and student ID (for the basic HTML programming, in tutorial# 3), as shown in Figure 1.

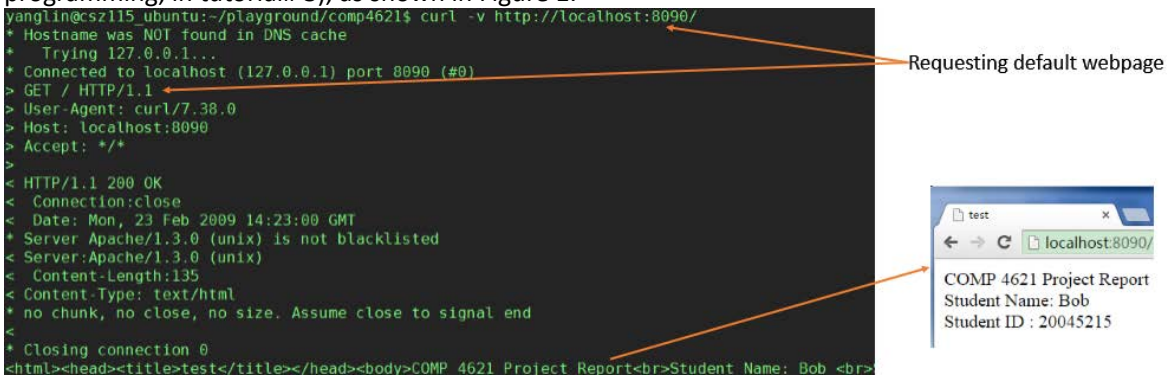


Figure 1. Response to web page request

- **Handle request of downloading large file with HTTP Range**
  When client requests a file, *i.e.*, the "test.mp4" in our project, start a HTTP range download. Figure 2 demonstrates an example of HTTP range request/response.

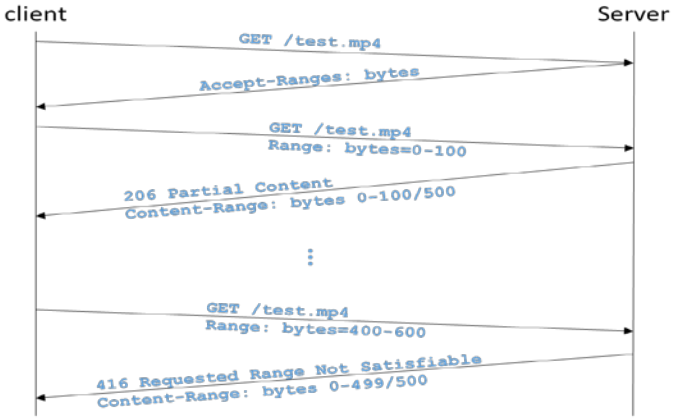
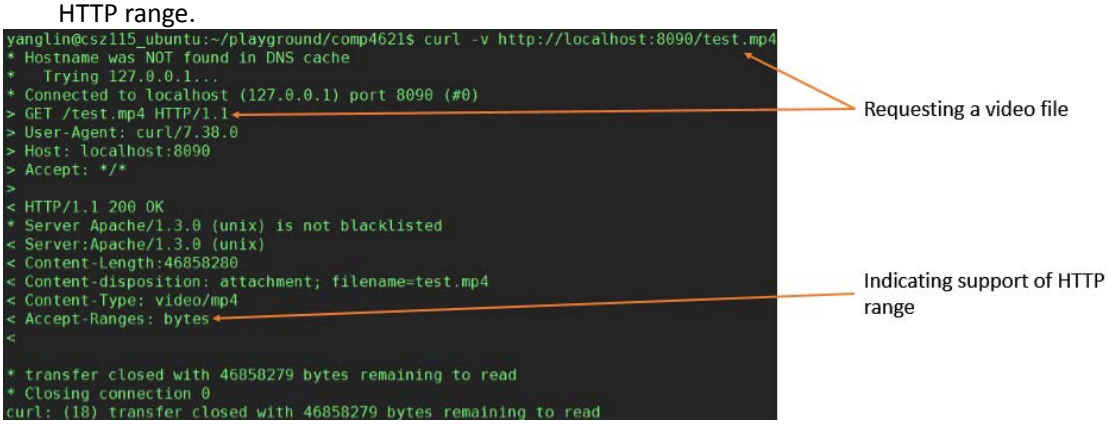


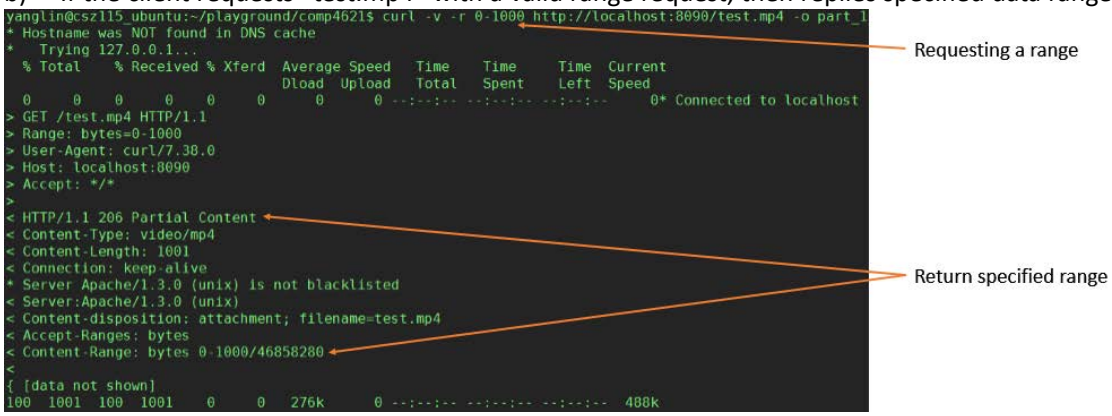
Figure 2. HTTP Range

The detailed behavior of webserver should be:

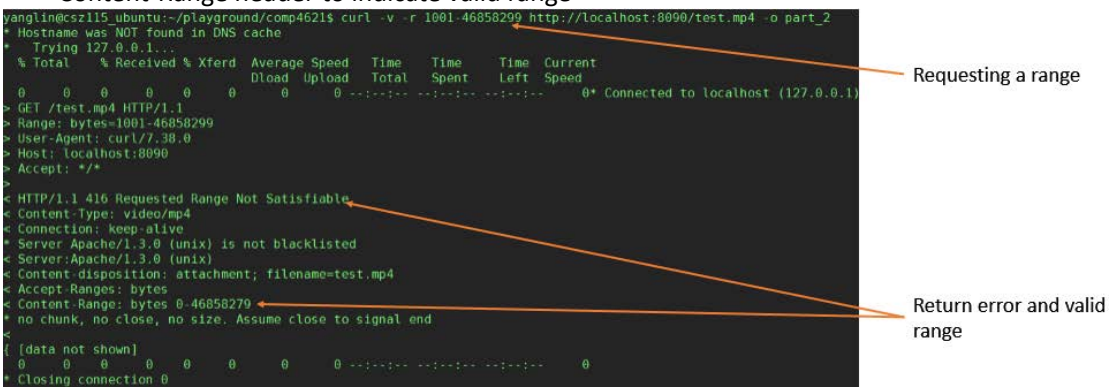
a) If the client requests “test.mp4” (hardcode this name in your code), then show support of HTTP range.



b) If the client requests “test.mp4” with a valid range request, then replies specified data range.



c) If client request an invalid range, then return 416 Requested Range Not Satisfiable, use Content-Range header to indicate valid range



- **Handle multiple requests simultaneously**

  This webserver should be able to handle multiple requests at the same time: while a client is downloading a large file, another client should be able to get a webpage from this web server.

2. Implementation details

You may start with the webserver example we have implemented in lab tutorial 3, some more functions need to implement:

- Parse HTTP Request.
- Parse Range-related header.
- Implement HTTP range.

Note:

- When you access the test.mp4, please use a relative path: "./test.mp4".
- Do not package your code.

3. Marking Scheme

Your code will be compiled with Java 7, and tested by the curl command on a Linux server, the marking scheme is:

- Handle basic request of web page correctly (20%)
- Handle multiple requests simultaneously (20%)
- Handle request of downloading large file with Range support appropriately (30%)
  - Support of range (10%)
  - Handle valid range request (10%)
  - Handle invalid range request (10%)
- Project report (30%)

4. Submission

Please submit a folder via CASS, with folder name like "studentName_studentID", which includes:

- All your source code in Java.
- A two-page project report (Times New Roman, 11pts, single column, in PDF), which explains:
  a) Structure of your code, give explanation for import functions
  b) How to handle multiple HTTP requests simultaneously?
  c) How to handle HTTP request of webpage? Please paste your test result with curl
  d) How to handle HTTP Range requests? Please paste your test result with curl
- Do NOT submit test.mp4, just hardcode this name in your code.