COMP4621 Course Project
HTTP Server

COMP4621 TAs

April 1, 2018

1 Background

The Hypertext Transfer Protocol (HTTP) is an application protocol for distributed, collaborative, and hypermedia information systems. HTTP is the foundation of data communication for the World Wide Web. HTTP is built on top of TCP layer.You can consult the **RFC** [1] and Wikipedia [2] for more detailed information.

HTTP applications (applications that use HTTP to exchange hypertexts) usually involve two entities, HTTP client and HTTP server. HTTP client is the web browser for most cases while the HTTP server is one piece of program running on server to provide web service.

In this course project, you are required to design and implement the HTTP server and use your web browser to test your HTTP server.

2 Requirements

You should:

1. Implement the HTTP server using C/C++ (recommended), Java or Python.
2. Support multiple threads.
3. Support parse for different files. Such as HTML, CSS, JPG, PDF and PPTX.
4. Support gzip content-encoding/compression.
5. Support chunked transfer encoding.
6. Prepare several HTML files for testing. The content of the HTML files should include at least your name, your student ID, one image and one link to PDF file. The HTML files should use at least one CSS file.

You should **NOT**:

1. Directly use third-party libraries that provide HTTP support.
2. Use multiplexing facilities, such as `EPOLL` or `SELECT`.
3. Copy from others.
4. Copy from Github.

3 Grading

You do **NOT** need to submit a report.

You should send TAs an email along with your code (link to Github or Bitbucket is preferred) to reserve a time slot for interview. Detailed information will be published on course website later.

During the interview,

1. You need to run your code and show results to TAs.
2. You need to explain your implementations to TAs.
3. TAs will ask several questions related to your implementations.

The grading scheme is as follows:

1. Multi-thread (30 points).
2. Parse different types of files (40 points).
3. Display user-friendly information when the requested file was not found (10 points).
4. Support gzip compression (15 points).
5. Support chunked transfer encoding (15 points).
6. Q&A (10 points).

If you get more than 100 points for the project, the extra scores will be added to you final grade. But your final grade cannot exceed 100.

References

[1] RFC for HTTP: `https://www.ietf.org/rfc/rfc2616.txt`

[2] Wikipedia page for HTTP: `https://en.wikipedia.org/wiki/Hypertext_Transfer_Protocol`