

# COMP4621 Course Project

## Proxy Server

COMP4621 TA

March 1, 2019

### 1 Background

A proxy server is an application that acts as an intermediary for requests from clients seeking resources from other servers. The proxy server may exist in the same machine as a firewall server or it may be on a separate server, which forwards requests through the firewall. You can consult the **RFC** [1] and Wikipedia [2] for more information.

### 2 Requirements

You should:

1. Implement the local proxy server using C/C++, Java or Python.
2. Support multiple threads.
3. Support forwarding HTTP requests.
4. Support forwarding HTTPS requests.
5. Support access control. For example, if user wants to access `sing.cse.ust.hk`, return "404 Not Found" status code.
6. Support caching.

You should **NOT**:

1. Directly use third-party libraries that provide HTTP or proxy 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 TA 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 TA.
2. You need to explain your implementations to TA.
3. TAs will ask several questions related to your implementations.

The grading scheme is as follows:

1. Multi-thread (30 points).
2. HTTP requests forwarding (20 points).
3. HTTPS requests forwarding (20 points).
4. Access control (20 points).
5. Caching (20 points).
6. Q&A (10 points).

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

### 4 Other useful links

- HTTP/1.1: Semantics and Content - methods, status codes and headers [3]
- HTTP/1.1: Caching - browser and intermediary caches [4]

### References

- [1] RFC for HTTP message syntax and routing: <https://tools.ietf.org/html/rfc7230>
- [2] Wikipedia page for proxy: [https://en.wikipedia.org/wiki/Proxy\\_server](https://en.wikipedia.org/wiki/Proxy_server)
- [3] RFC for HTTP semantics and content: <https://tools.ietf.org/html/rfc7231>
- [4] RFC for HTTP caching: <https://tools.ietf.org/html/rfc7234>