Assignment 3 Write Up

1. **Testing**

   The first part of testing I conducted was parsing the options from the command line in order to assure of proper logging and caching. I made sure that if logging was enabled that contents were printed in hex correctly and to the write file while also making sure the file would be able to append further requests without overwriting previous request, unless the server is closed and reopened. The second part of testing I did was to check whether my caching was implemented correctly by adding the file name and content along with the content appropriately to their respective vectors. Once that was in order, I would check to see if the cached requests would be updated if a PUT request was made with the same filename. However, I realized now that the checking I did isn't exactly correct since all I did to check for differences was use the content length. This is not valid since a file could have the content length but different content, so therefore it lacks in consistency and correctness.

2. **Answer**

   There was a noticeable difference when caching was turned on compared to when it was turned off, specifically for larger files, since it wouldn't have to take as much time to read from a file or a socket. Instead, it would just check in the vector to see if the literal strings would match up and then send it back through the socket or write it to disk, which in this case is the file. It was significantly faster for large files when doing a PUT request for the second time after the first had been cached. Similarly, GET request from the same large file on the server side produced a much faster response as well.