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198:352 - Assignment 7
Peer to Peer Web Server

Implementation

- We chose to go with a basic implementation (the 80 %) for the project.
- We made a **Java makefile**. To use it, just type in "make" into the command line in the appropriate directory.
- Our program consists of a client and a web server.
- Client
    - We have a client that sends PUT + DELETE commands to the server. When starting up the Client, it looks for two parameters.
        - Pass in the hostname and port of the server that the client will connect to.
        - The client NEEDS these two arguments to run.
        - Ex: java pClient localhost 4354
            - pClient is the name of our java client
            - Localhost is the hostname
            - 4354 is the port
    - PUT Command:
        - After starting up the pClient program, you'll be prompted for information.
        - To run the PUT Command, type in:
            - ex: PUT path/to/filename
        - After inputting the command, our client will look for the specified file and copy it over into a string to send to the server.
        - An error will be reported if file is not found.
        - The Client should get a response from the Server saying the PUT request was OK.
    - DELETE Command:
        - To run the DELETE command, type in:
            - ex: DELETE path/to/filename
        - The Client will send a message to the server telling it to delete the specified file.
        - The client should then receive a message saying whether the file was deleted or it didn't exist.
    - GET Command:
        - To run the GET command, type in the follow in the browser:
            - ex: localhost:[port number]/path/to/file
        - If the path is "local.html", the server will respond with a predefined HTTP OK response
        - If the path is any other than "local.html", the server will attempt to look if the file exists within its network of peers. It will respond with the following:
            - if found: HTTP OK, file size in bytes, and file content
            - if not found: HTTP file not foundss
- P2P Server

- Code is in p2pws.java.
- To run it, you need to specify a port number.
  - ex: java p2pws 4354
- The server will then listen for PUT, DELETE, GET, and LIST requests.
- If the server receives a PUT Command, it will store the one in the message in a HashMap.
  - To see what type of command it is, the first line of the request is parsed. If the first word is a PUT, then we hash the pathname provided and store the content as the value for that hash key.
- If the server receives a DELETE Command, it will look in the hashmap to see if the specified pathname exists by comparing the hashes. If it exists, it will be deleted from the Hashmap. If it doesn't, the server will send back a File Not Found message.