COMP 4981

Assignment 1

server.c server

Report

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# 

# Purpose

The server.c’s program purpose is to act as a basic HTTP server in C that can handle both GET, POST, and HEAD requests.

# Requirements

| **Task** | **Status** |
| --- | --- |
| GET | Fully implemented |
| HEAD | Fully implemented |
| POST | Fully implemented |
| DATABASE READ/WRITE NDBM | Fully implemented |
| CONCURRENCY I/O Multiplexing | Fully implemented |
| Error Handling | Fully implemented |

# Platforms

server.c has been tested on:

* macOS 12.2
* Fedora 34
* Manjaro
* Ubuntu 23.1
* Windows 11

Browsers

* GET and HEAD can be run from these browsers
  + Chrome
  + Chrome mobile(android)
  + Brave
  + Opera
  + Chromium
  + Edge
  + Edge mobile(android/ios)
* POST can be used for
  + Take a string to the server
  + Store it in the database
  + Override the current data stored
  + Read it back
  + Send it back to the client as a response

# Language

* ISO C17
* Compiles with gcc and clang

# Documents

* [Design](https://docs.google.com/document/d/18oPzDjnE2xTBqkONBLzCgOYVKKna5XXY9yluB8NNf20/edit?usp=sharing)
* [Testing](https://docs.google.com/document/d/1c3MscVtGdRb3vt4UJ7DNpsLFEvbr7t9MKJvOcZqx7UM/edit?usp=sharing)
* [User Guide](https://docs.google.com/document/d/1pHwipGddB6WWkPm9lbRW_rFzK_LCv2s6vCd4rXuHNLQ/edit?usp=sharing)

# Findings

* Features
  + It can work with most browsers and almost all Operating systems
  + Implemented webroot file tree to access via “/”
  + Users can add any HTML or text-based files
  + Can work with either HTTP 1.0 and HTTP 1.1
    - Always on working for GET client request
  + Data Layer created for db.h and db.c
    - ./db/
  + Access to sub-directories
    - <IP\_addr>:<PORT>/sub\_dir/sub
* Limitations works in most browsers but breaks
  + Other MIME types are not implemented and are limited to HTML only
  + Discovered a bug with Firefox only on any OS
    - Can only load media after server close
  + Can only read from webroot where creation is not allowed