

CSE 344 System Programming

Final Project

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Firstly, I implemented the structure of the program as,

For server side, I read the input file and then store it inside a 2d char array Linked List. Since there can be limited number of columns, I stored rows in 2d arrays. But since there may be even millions of records and for given SQL queries, I have to check every row anyway, the drawback of LinkedList, which is its time complexity for get operation ($O(n)$) is minimized for this task.

For client side, a simple program that reads file line by line, extracts pid part from the line and sends the plain query to server.

Inside server the data structure is stored inside database.h header file which is one outer layer. That header file is responsible for receiving SQL queries and execute them. Read store operations are 2dArrayLinkedList files responsibility. Database.h file parses given SQL query, sends values and column indexes to 2dArrayLinkedList and thre rest is handled and returned inside 2dArrayLinkedList.

And the last outer layer for server.c is server.c file itself. It handles more general operations like reading parameters, opening/closing files, receiving request/sending response from/to other socket clients.