

ClientWorker (Thread)
<ul style="list-style-type: none"> <li>- __client_socket: socket</li> <li>- __keep_running_client: bool</li> <li>- __id: int</li> <li>- __server: Server</li> <li>- __user: user</li> <li>- __database: Database</li> </ul>
<ul style="list-style-type: none"> <li>+ sign_in_user(username, password): bool</li> <li>+ sign_out_user(): bool</li> <li>+ run()</li> <li>+ terminate_connection()</li> <li>+ process_client_request(msg: str)</li> </ul>

Database
<ul style="list-style-type: none"> <li>- __users: []</li> <li>- __outgoing_messages: []</li> </ul>
<ul style="list-style-type: none"> <li>+ sign_up_user(username, password, display_name): bool</li> <li>+ send_message(user_from, user_to, message): bool</li> <li>+ relay_message_to(user_from, message_id, message): bool</li> <li>+ message_relayed(user_from, user_to, message_id): bool</li> <li>+ save_to_file(filename): bool</li> <li>+ load_from_file(filename): bool</li> </ul>

User
<ul style="list-style-type: none"> <li>- __username: str</li> <li>- __password: str</li> <li>- __display_name: str</li> </ul>
<ul style="list-style-type: none"> <li>+ __init__(username, password, display_name)</li> </ul>

Server
<ul style="list-style-type: none"> <li>- __ip: str</li> <li>- __port: int</li> <li>- __backlog: int</li> <li>- __server_socket: Socket</li> <li>- __client_socket: Socket</li> <li>- __keep_running: bool</li> <li>- __keep_running_client: bool</li> <li>- __database: Database</li> <li>- __list_of_cw: []</li> <li>- __connection_count: int</li> </ul>
<ul style="list-style-type: none"> <li>+ terminate_server()</li> <li>+ run()</li> </ul>

Client
<ul style="list-style-type: none"> <li>- __ip: str</li> <li>- __port: int</li> <li>- __is_connected: bool</li> <li>- __client_socket: Socket</li> <li>- __server_worker: ServerWorker</li> </ul>
<ul style="list-style-type: none"> <li>+ connect()</li> <li>+ disconnect()</li> <li>+ send_message(msg: str)</li> <li>+ print_received_messages()</li> <li>+ sign_in_user(username, password)</li> <li>+ display_menu()</li> </ul>

message
<ul style="list-style-type: none"> <li>- __id: int</li> <li>- __content: str</li> </ul>
<ul style="list-style-type: none"> <li>+ __init__(id, content)</li> </ul>

ServerWorker(Thread)
<ul style="list-style-type: none"> <li>- __incoming_messages: []</li> <li>- __client_socket: Socket</li> </ul>
<ul style="list-style-type: none"> <li>+ receive_message(max_length: int)</li> <li>+ run()</li> </ul>