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| Lightbulb Icon Flat Vector Illustration Design Stock Vector ... |
| Design Document  Protocol Design & Implementation |
| |  |  |  | | --- | --- | --- | | Deirdre Lee | 3/12/24 | Distributed Computing | |

Documenting Design & Implementation  
Design

* Objectives and overview
* Design philosophy
* Server-side design classes: UML diagrams
* Client-side design classes: UML diagrams

Implementation

* Objectives and overview
* Application layer implementation: Sequence diagrams and code sections for interesting code
* Presentation layer implementation: Sequence diagrams and code sections for interesting code
* Service layer implementation: Sequence diagrams and code sections for interesting code
* User Manual with screen capture

# Conclusions

# Protocol for Client-Server Communication

# Describe the protocol that governs the interaction between clients and servers during a session of the service…

# Format of Each Message Type

## Request

Requests exchanged between client and server will be encoded in JSON format

Example:

{

“parameters”: {

“type”: “LOGIN”,

“username”: “user”,

“password”: “password”

}

}

## Response

## Requests exchanged between client and server will be encoded in JSON format

## Example:

## **{**

## **“status”: “SUCCESS”,**

## **“data”: {**

## **“message”: “Login successful”**

## **}**

## **}**

## Error

Format & example…

# Pseudo-code for Functional Requirements

## Client Side

Pseudocode…

## Server Side

Pseudocode…

# Inter-process Communication

In the system, communication between the client and the server processes is facilitated through a secure connection established using SSL/TLS.

## Sequence of Inter-process Communication

* 1. The client initiates a connection request to the server using SSL/TLS.
  2. The server listens for incoming client connections and accepts them.
  3. Upon successful connection establishment, the client and server perform an SSL/TLS handshake to establish a secure communication channel.
  4. The client acknowledges the server's acknowledgement over the secure connection.
  5. The client sends requests to the server.
  6. The server processes requests.
  7. The server sends back responses to the client.
  8. Communication continues until the session is terminated.

# Conclusion

Summarise the key points of the protocol specification and emphasise its importance for ensuring proper communication between clients and servers…