COMP 7005

Assignment 1

Design

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# Purpose

This program implements a client-server model using Unix Domain Sockets. The server listens for client connections, processes file read and write requests, and sends responses. The client connects to the server, sends a request, and receives a response.

# Data Types

## Client-Side

|  |  |  |
| --- | --- | --- |
| **Field** | **Type** | **Description** |
| socket\_path | string | The path to Unix domain socket to connect to |
| request\_data | string | Date sent by client |
| response | string | Response received from the server |

## Server-Side

|  |  |  |
| --- | --- | --- |
| **Field** | **Type** | **Description** |
| socket\_path | string | The path to Unix domain socket to connect to |
| connection | socket | Client-server connection established |
| request | string | Request sent by client |
| response | string | Response sent by server |

# Pseudocode

## Client-Side

**Create\_client**

### Parameters

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Type** | **Description** |
| socket\_path | string | Path to Unix socket to connect to |
| request\_data | string | Request data sent to the server |

### Pseudocode

1. Create Unix domain socket.
2. Try to connect to server using socket path.
3. Send the request data to server.
4. Receive server’s response and print it.
5. Handle different types of errors.
6. Close the connection.

## Server-Side

**Create\_server**

### Parameters

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Type** | **Description** |
| socket\_path | string | Path to Unix socket to connect to |

### Pseudocode

1. Create Unix domain socket and bind to specific path.
2. Listen for client connection requests.
3. Accept the connection and read the request.
4. Depending on the request:
   1. If it is READ, read the specified txt file and return its content
   2. If it is WRITE, write to the specified txt file and return whatever was written
5. Send response back
6. Listen for next connection request.