

README File

Overview

This Java-based client-server application demonstrates basic socket programming, allowing the client to send messages to the server, and the server to process and respond back. It is suitable for understanding how basic network communication works using **TCP sockets** in Java.

- **Server:** Listens on a predefined port and processes incoming messages from the client.
- **Client:** Connects to the server using the server's IP address and port, sends a request, and receives a response.

Features

- **TCP socket communication:** Client and server communicate via TCP protocol.
- **Multithreading:** The server can handle multiple clients concurrently.
- **Simple message exchange:** Client sends a request and receives a response from the server.
- **Error handling:** Basic error handling for network connection issues.

Technologies Used

- Java 12 (or later)
- TCP Sockets
- Multithreading (for handling multiple clients)

Requirements

To run this project, you'll need:

- Java Development Kit (JDK) version 8 or later.
- A terminal/command line interface to run the application.

- (Optional) IDE like IntelliJ IDEA, Eclipse, or VS Code for easier management and debugging.

How to Run

1. Download the Zip File.
2. This project consists of four main folders Server, Client, Common and Resources.
3. The Server must be started first before the client can be run. Multiple clients can be supported simultaneously.
4. Once the Client is connected to the server the server generates the keys and stores them in a Resources folder

Follow these steps to set up the client and server.

1. Server Setup

- Navigate to the src/parent folder.
- Navigate to the common folder to compile the common codes:

```
javac -cp .. *.java
```

- Similarly, compile the server codes in the server folder.
- Run the server:

```
java server.Server
```

- The server will start listening on the specified ports, waiting for incoming client connections.

2. Client Setup

- Open the Client.java file.

Navigate to the client folder within 'src' and compile the code:

```
javac -cp .. *.java
```

- Run the client:

```
java client.Client
```