ITMO UNIVERSITY

National Research University ITMO

Faculty of Software Engineering and Computer Systems

SYSTEM SOFTWARE FUNDAMENTALS

Lab Work #6 (4)

TCP/IP Communication

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Assignment

Part I

Implement client-server communication over TCP/IP in C and Perl.

The client should:

1. Accept *host name* and *directory paths* as command line arguments;
2. Establish a TCP/IP connection and request file listings for the specified directories;
3. Output the listing to `stdout`.

The server should:

1. Use a text protocol;
2. Handle multiple simultaneous connections;
3. Create a new thread (using `pthreads`) for each connection.

In addition to this, the following diagrams should be provided:

- a BPMN diagram;
- UML sequence, class, activity, use case, deployment, state, and component diagrams, written using the PlantUML notation.

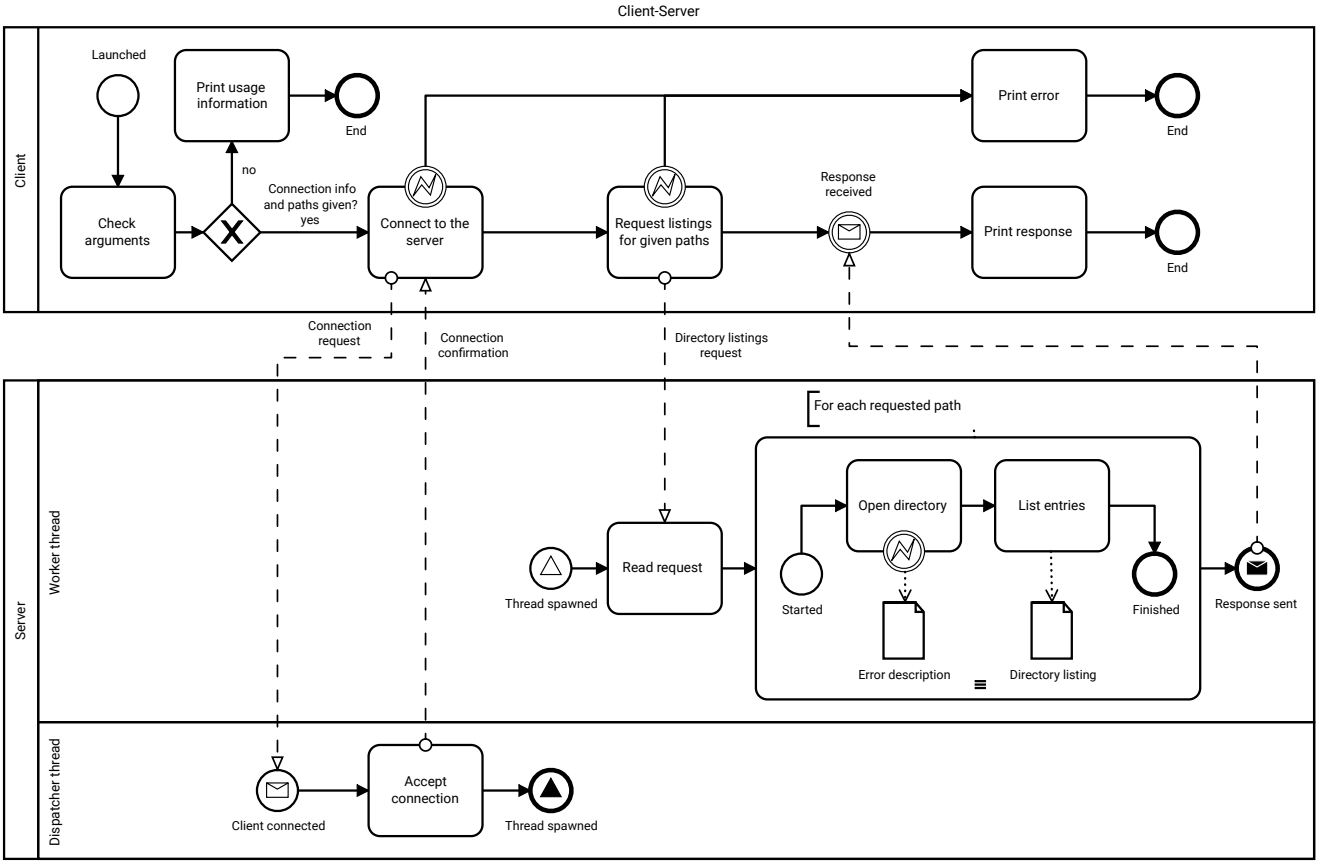
Code Listing

`.c`, `.pl`, and `.plantuml` files are available at

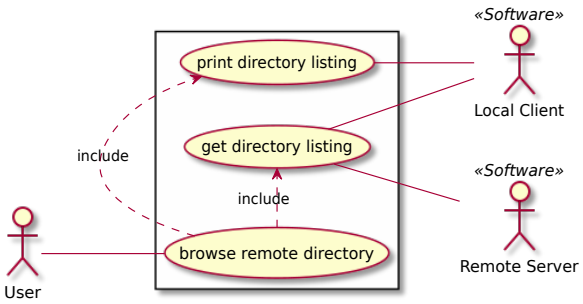
`https://github.com/timlathy/itmo-third-year/tree/master/System-Programming-Fundamentals-5th-Term/Lab6-TCP`

Diagrams

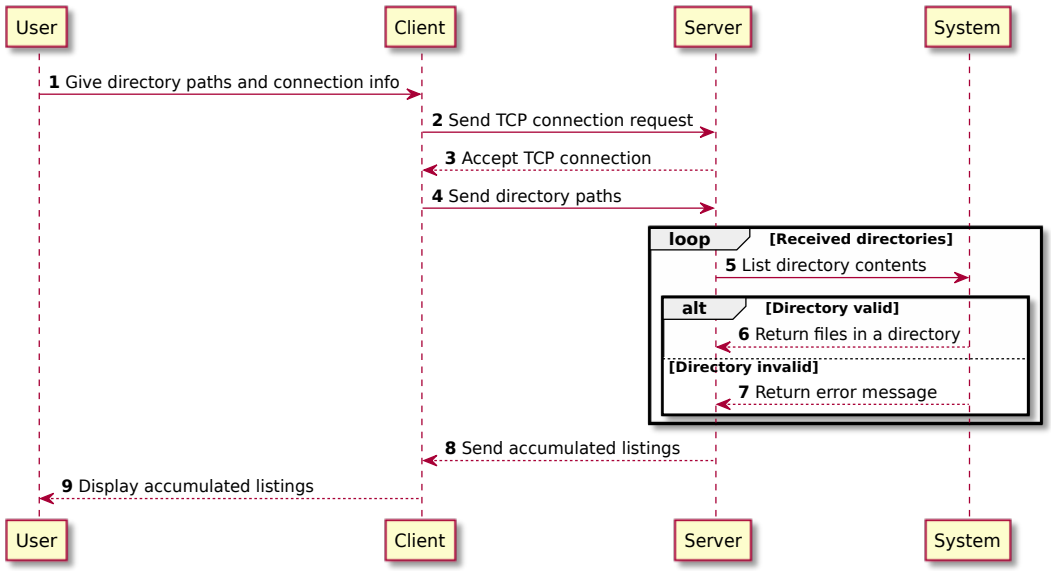
BPMN



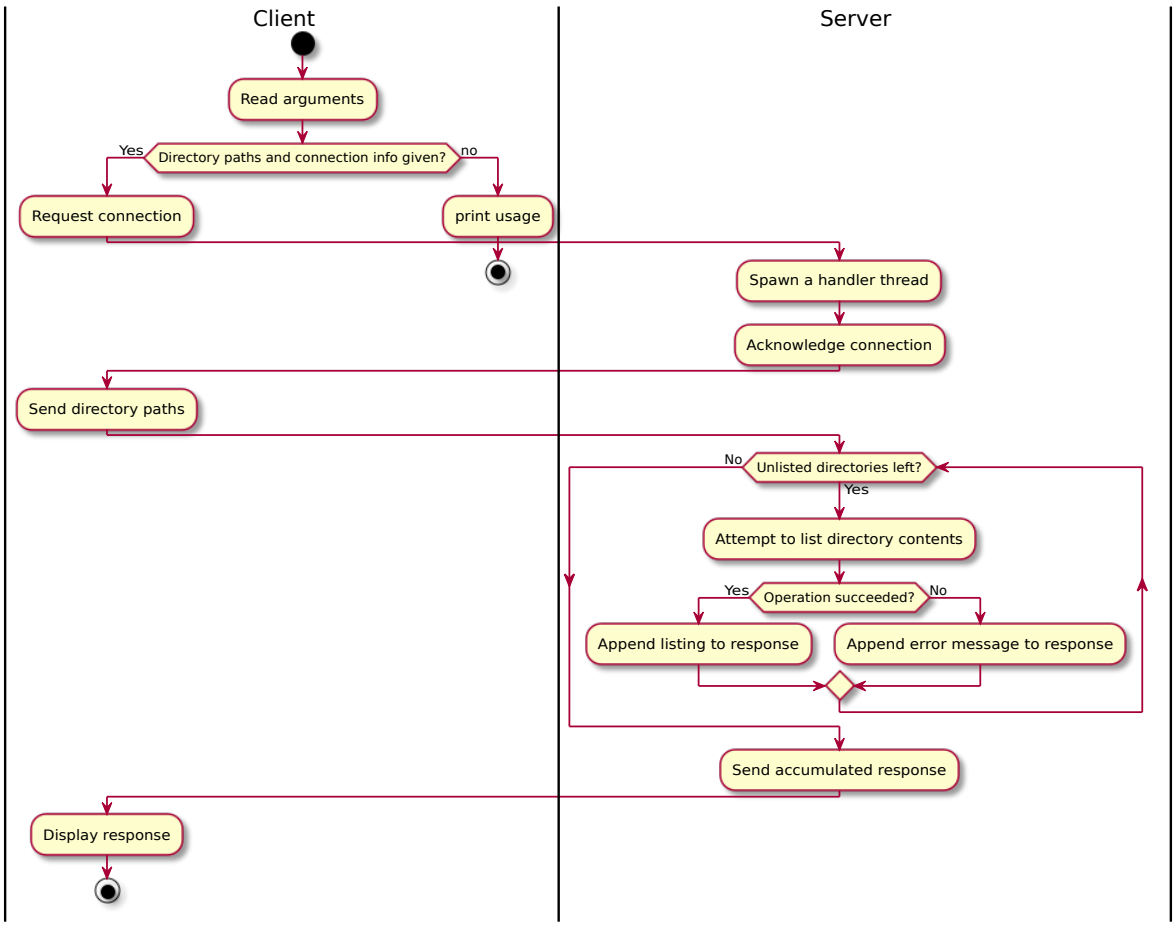
UML Use Case



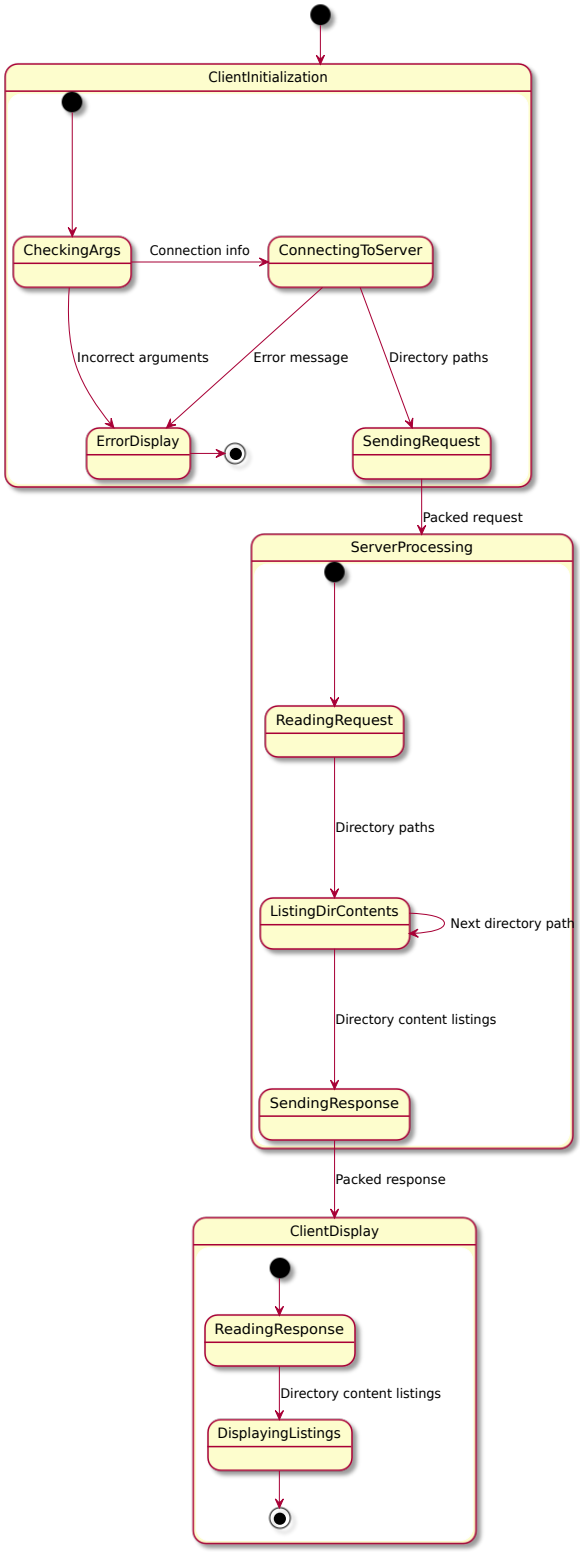
UML Sequence



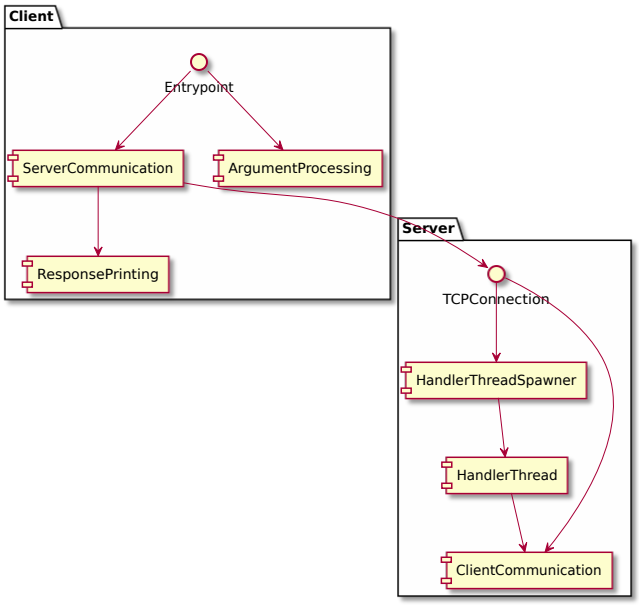
UML Activity



UML State



UML Component



UML Deployment