Network Programming Laboratory

18 July 2022

Exercise

In the following we will implement a networked version of the *fortune* application, in which a *fortune client* requests for a fortune sentence to a (possibly remote) *fortune server*. The application is supposed to run over UDP by using an arbitrary port (e.g. 12000).

Fortune client. Initiates the communication by sending a `fortune request` message to the server. The message is formatted as JSON and carries the `type` of message set to `REQ` and the (empty) `text` field. Then, the client waits for the message reply from the server. Once received, the message is parsed and printed to screen.

Fortune server. Listen for client requests. When a request is received, it prepares a *fortune* message and sends it back to the client. Again, the message is formatted as JSON with `type = REP` and the `text` field filled with the fortune sentence.

1. Write a C++ program that implements the fortune server. For your convenience, the `2022-07-18.hpp` header file is available in the exam folder with a few utilities functions (for JSON translation and fortune text crafting).
2. Write a C++ program that implements the fortune client.

Note: all library functions from the NPL repository developed in the course can be used, as well as your favorite external JSON library (e.g., the `nlohmann` library).