

Network System Programming Quiz 1

2025/10/14 Tuesday

Your task is to build a basic Remote Procedure Call (RPC) simulator using two distinct processes: a Commander and an Executor. The Commander sends a UNIX command name to the Executor, which runs the command, captures its output, and returns it to the Commander for display.

You must use Linux pipes (*pipe()*) for inter-process communication. Crucially, the Executor process must utilize the *dup()* system call (or *dup2()*) to redirect the standard output (stdout) of the executed UNIX command into the pipe, allowing the Commander to retrieve the command's result.

For example:

\$myrpc

Commander, please input command: ls

.....result from Executor.....

Commander, please input command: cat .bashrc

.....result from Executor.....

\$myrpc -f result

Commander, please input command: ls

.....result from Executor is saved in “result” file.....