

Project3: RWG System



NP TA 王瑞渝

4/27 23:59

Project 3 Deadline

Demo: 4/28 Mon.

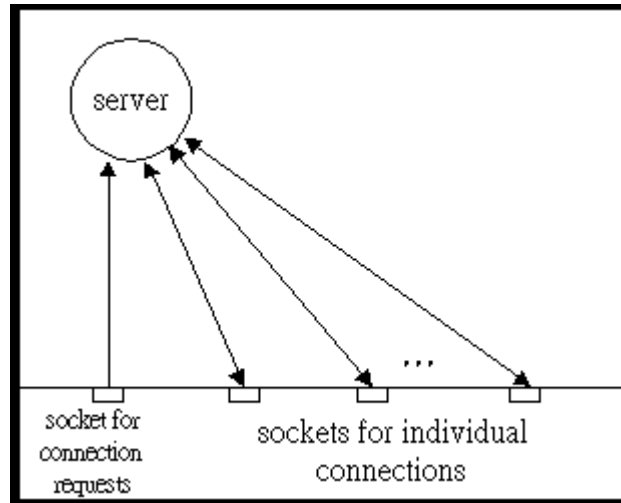
Project 3

In this project, you are asked to implement a rwg server similar to part 2 of Project 2, but with differences:

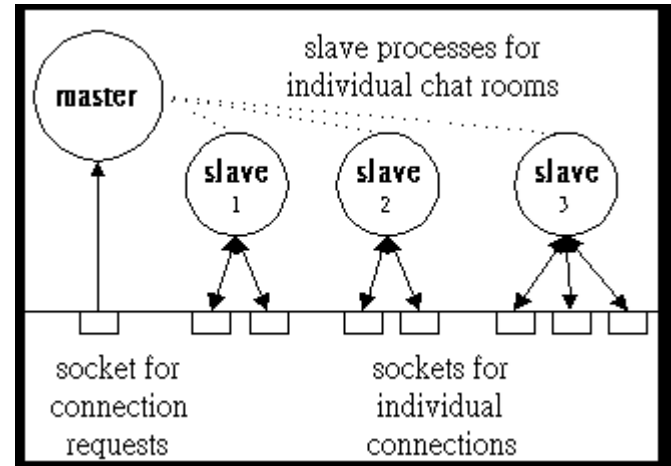
- np_single_proc (Project 2)
 - **Project 1** + **User pipe** + **4 functions** + **Broadcast message**
 - **Single-process concurrent**
- np_multi_proc (Project 3)
 - **Project 1** + **User pipe** + **4 functions** + **Broadcast message**
 - **Concurrent connection-oriented** + **FIFO** + **Shared memory**
 - FIFO: User pipe
 - Shared memory: Broadcast message, client information

Client-server Model

Single-process concurrent



Concurrent connection-oriented



Difference between Project2 and Project3

- Project2 (np_single_proc)
 - **Single-process concurrent**
 - Use **pipe** to implement user pipe
 - Use socket to send messages directory
- Project3 (np_multi_proc)
 - **Concurrent connection-oriented**
 - Use **FIFO** to implement user pipe
 - Use **shared memory** to save **clients infos** and **messages**

Server functions

- **Same as Project 2**
- Chat-like system
- Provide all functions in **project 1**
- New functions
 - **Login/Logout message**
 - **who** - get information of all users
 - **name** - rename
 - **tell** - send message to someone
 - **yell** - broadcast message
 - **User pipe**

Scenario example

- Same as Project 2
- Text only ver.
 - <https://hackmd.io/@q12we34rt5/rkM8WMCeC>
- Video demonstration
 - https://youtu.be/o_d1kY-j_BM

Implementation

Server3 (np_multi_proc) - User Pipe send



Server3 (np_multi_proc) - User Pipe recv

Client2: **cat <1**

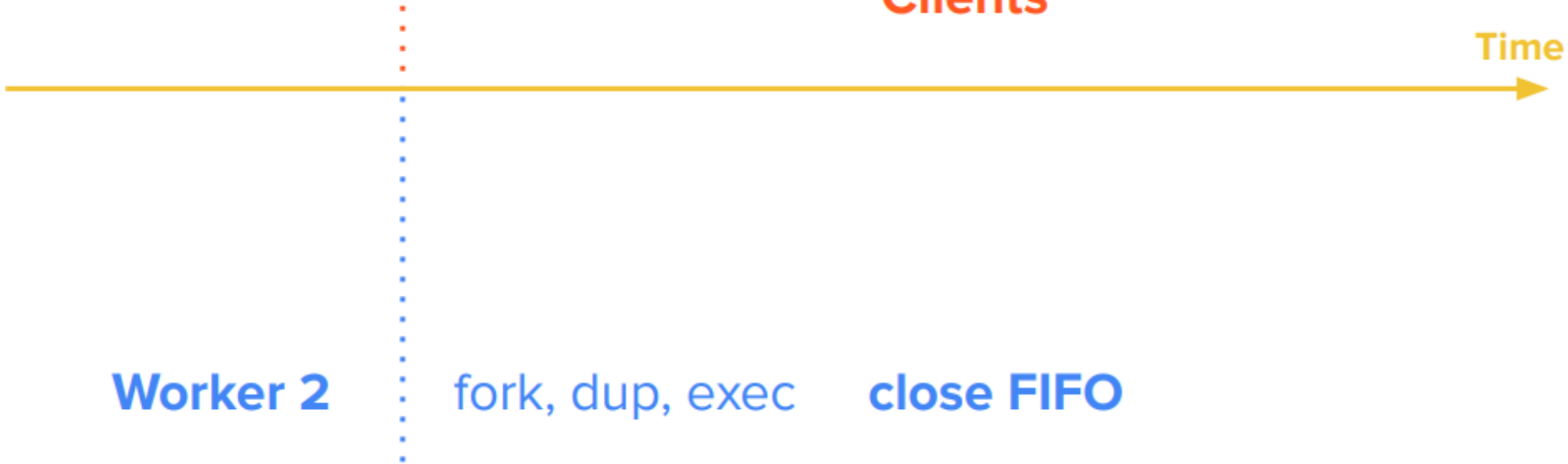
Clients

Time

Worker 2

fork, dup, exec

close FIFO



Other

Project 3: Info

- You are **HIGHLY** encouraged to publish your questions on Project 3 討論區
 - Check the spec and other questions first.
- You can contact TAs by e3. (Mails sent to other addresses will **NOT** be replied)
- TA hours (Tuesday: 15:00 ~ 17:00) on **4/15, 4/22** will be held online.
 - You **MUST** make a reservation by email in advance.
- TAs will **NOT** debug for you.

Project 3: Demo

- You are **NOT** allow to demo if we are unable to compile your project with a single make command.
- 4/28 Mon. 17:30 ~ 21:20.
- We will announce demo slots 1 ~ 3 days before.
- Tasks:
 - Correct format and compile.
 - QA.
 - Pass testcases.
 - Implement extra function with limit time.

Q&A