

Project2: rwg Systems



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Project 2 Deadline.

Demo: 11/26 Tue.

rwg - Remote Working Ground

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

3 Servers

- np_simple (Single user)
 - **Project1**
 - Concurrent connection-oriented
- np_single_proc (Multiple users)
 - **Project1** + **User pipe** + **4 Functions** + Broadcast message
 - Single-process concurrent
- np_multi_proc (Multiple users)
 - **Project1** + **User pipe** + **4 Functions** + Broadcast message
 - Concurrent connection-oriented + **Fifo** + Shared memory

Project 2: Submission

- Create a directory named as your student ID, put all files into the directory.
- You must provide Makefile. Three executable files named **np_simple** (server 1), **np_single_proc** (server 2) and **np_multi_proc** (server 3) should be produced after typing make command.
- You are **NOT** allowed to demo if we are unable to compile your project with a single make command.
- Upload only your code and Makefile. Do NOT upload anything else (e.g. noop, removetag, test.html, **.git**, **__MACOSX**)
- zip the directory and upload the .zip file to the E3 platform.

ATTENTION! We only accept .zip format

About Testing

- We will provide our client program and demo script. Before that, you can use **telnet** to test your server
- **Only one** user enter command at one time
- No inevitable race condition
- No space at the end of commands

Testcase Example

login1

login2

login3

1:name Pikachu

3:name Rayquaza

3:who

2:ls | cat | cat | cat | cat | cat | cat | cat | cat | cat | cat | cat | number

3:yell Find hotel

2:yell Trivago

...

Invalid Testcases

- % ls >2 | number (two outputs)
- % ls |1 number <1 (two inputs)
- User pipe to himself/herself
- % cat <1 >2 , but >2 cause error
- Wrong arguments for build-in functions
 - % tell hahaha

Important Details

- All ' are ' on spec , do not copy directly
- Set flag **SO_REUSEADDR** in server socket
 - Hint: use function **setsockopt**
- All servers should listen on the port assigned by the first argument
 - **./np_single_proc 12345**
- Listen for connection again on np_simple (server 1) after user exit
- Handle Signal **SIGINT** to clean shared memory

About Demo

- Correct format and compile
- QA
- Pass np-basic test cases
- Pass np-hard test cases
- Implement 1 or 2 extra functions with limited time

Remind

- You can only implement this project with **C and C++**, other third-party libraries are **NOT allowed**.
- Start project2 earlier
- You are **HIGHLY** encouraged to publish your questions on E3 討論區
- Don't leave any zombie processes in the system
- **We take plagiarism seriously**
- Protect your code from being stolen
- Enjoy the project !!