

Group 13 – Phase 2: Remote CLI Shell:

Jun & Sonya

Usage of the program

We upgraded Phase1 with socket communication. The client takes inputs from the user and sends requests to the server. The client will then receive the output/result from the server and print it on the screen.

To run the client/server

- 1) Open the directory in TWO separate UNIX-based terminals
- 2) In one of the terminals, run the server by running the command “gcc Phase2-server.c -o Phase2-server.o && ./Phase2-server.o”
- 3) In the other terminal, run the client by running the command “gcc Phase2-client.c -o Phase2-client.o && ./Phase2-client.o”
- 4) The order is important! The server should be run first before the client, otherwise the client will report “Connection error” as there is no server to connect to.
- 5) Once the connection is created, the client terminal will report the successful connection. You can start entering commands listed on the CLI to send to the server, and the server will run the commands before sending back the output of the commands to the client.
- 6) If the input commands are not among the listed ones, then the client will get an error message specifying “commands are not available”.
- 7) To exit the program, input “exit” on the client end. Do not enter ctrl+c on the client because it will not close the server properly.

Example test cases and results

valid test cases

--- 3 pipes ---

```
"cat words.txt | grep yasin | tee output1.txt | wc -l"
```

6

```
"cat words.txt | uniq | sort | head -10"
```

Android

Banana

Cat

Coffee

Edamame

Hello

Hersheys

Mcdonalds

Starbucks

Sun

```
"sort alphabets.txt | head -10 | tail -n 5 | tee output3.txt"
```

f

g

h

i

k

--- 2 pipes ---

```
"sort words.txt | head -10 | grep 'a'"
```

Banana

Cat

Edamame

Mcdonalds

Starbucks

```
"cat words.txt | grep yasin | wc -l"
```

6

--- 1 pipe ---

```
"cat alphabets.txt | tail -10"
```

l

w

q

r

z

f

u

g

n

h

"cat words.txt | uniq"

Hello

Mcdonalds

Coffee

yasin hey

Starbucks

Banana

yasin

Water

Test

fish

yasin yo

bread

potato

Cat

Edamame

yasin more

Sun

burger

Hersheys

Swimming

Android

```
"df | tee disk_usage.txt"
```

Filesystem	1K-blocks	Used	Available	Use%	Mounted on
rootfs	249467900	217039252	32428648	88%	/
none	249467900	217039252	32428648	88%	/dev
none	249467900	217039252	32428648	88%	/run
none	249467900	217039252	32428648	88%	/run/lock
none	249467900	217039252	32428648	88%	/run/shm
none	249467900	217039252	32428648	88%	/run/user
tmpfs	249467900	217039252	32428648	88%	/sys/fs/cgroup
C:\	249467900	217039252	32428648	88%	/mnt/c
D:\	249470972	46119964	203351008	19%	/mnt/d

```
--- 0 pipes ---
```

```
"cat alphabets.txt"
```

b

d

k

e

m

a

c

p

i

t

y

l

w

q

r

z

f

u

g

n

h

"ls -l"

```
-rwxrwxrwx 1 yaya1721 yaya1721 2550 Apr  5 18:32 Phase2-client.c
-rwxrwxrwx 1 yaya1721 yaya1721 17328 Apr  4 23:17 Phase2-client.o
-rwxrwxrwx 1 yaya1721 yaya1721 15541 Apr  5 18:52 Phase2-server.c
-rwxrwxrwx 1 yaya1721 yaya1721 22048 Apr  4 23:17 Phase2-server.o
-rwxrwxrwx 1 yaya1721 yaya1721 12665 Apr  4 23:17 Phase2Report.docx
-rwxrwxrwx 1 yaya1721 yaya1721 13024 Apr  5 18:51 a.out
-rwxrwxrwx 1 yaya1721 yaya1721   63 Apr  3 11:25 alphabets.txt
-rwxrwxrwx 1 yaya1721 yaya1721  581 Apr  6 02:40 disk_usage.txt
-rwxrwxrwx 1 yaya1721 yaya1721   54 Apr  6 02:37 output1.txt
-rwxrwxrwx 1 yaya1721 yaya1721   15 Apr  6 02:38 output3.txt
-rwxrwxrwx 1 yaya1721 yaya1721  189 Apr  3 11:25 words.txt
```

"man"

What manual page do you want?

"pwd"

/mnt/c/Users/Sonya/Documents/GitHub/OS-Project/Phase2

"echo hello"

hello

"ps"

PID	TTY	TIME	CMD
-----	-----	------	-----

9	tty1	00:00:01	bash
---	------	----------	------

27334	tty1	00:00:00	a.out
-------	------	----------	-------

27433	tty1	00:00:00	ps
-------	------	----------	----

"whoami"

yaya1721

"exit"

Closing socket from clientside

Exited

invalid test cases

"cd"

Command is currently unavailable, change one...