

Typescript

Here I will display the valid input of each program.

Also, the situations when the program meets invalid input will also be listed to show the robust.

Copy

- Valid input

```
//input
./Copy src.txt dest.txt 100

//output
The total is 29348.
Time used:0.278000 millisecond.
```

- Invalid input

```
//input Missing parameters
./Copy src.txt dest.txt

//output
usage:./Copy <source_file> <destination_file> <buffer_size>
```

Shell

- Valid input

```
//input
./shell 8088

//client input
telnet localhost 8088

//client received
I can hear youuuuu!

//server output
Get a new connection, client number: 1.
```

```
//client input
pwd

//client received
/home/snorlax/Documents/Course/CS2303/Project_1

//server output
No pipe commands detected.
```

//client input

ls -l

//client received

total 1028

```
-rwxrwxr-x 1 snorlax snorlax 17296 Mar 26 09:15 Copy
-rw-rw-r-- 1 snorlax snorlax  2057 Mar 26 08:02 Copy.c
-rw-rw-r-- 1 snorlax snorlax   300 Mar 25 09:45 data.in
-rw-rw-r-- 1 snorlax snorlax   613 Mar 26 08:11 data.out
-rw-rw-r-- 1 snorlax snorlax 29348 Mar 26 09:16 dest.txt
drwxrwxr-x 2 snorlax snorlax  4096 Mar 26 09:07 GNUpIot
-rw-rw-r-- 1 snorlax snorlax   202 Mar 26 01:19 makefile
drwxrwxr-x 2 snorlax snorlax  4096 Mar 26 09:07 Matrix_test
-rwxrwxr-x 1 snorlax snorlax 22040 Mar 26 09:15 multi
-rw-rw-r-- 1 snorlax snorlax   9041 Mar 26 09:15 multi.c
-rw-rw-r-- 1 snorlax snorlax 11840 Mar 26 09:15 multi.o
-rw-rw-r-- 1 snorlax snorlax   289 Mar 26 08:07 Prj1README.md
-rw-rw-r-- 1 snorlax snorlax 803317 Mar 26 01:22 random.out
-rwxrwxr-x 1 snorlax snorlax 22160 Mar 26 09:15 shell
-rw-rw-r-- 1 snorlax snorlax   9354 Mar 26 08:02 shell.c
-rw-rw-r-- 1 snorlax snorlax 10920 Mar 26 08:10 shell.o
-rwxrwxr-x 1 snorlax snorlax 17384 Mar 26 09:15 single
-rw-rw-r-- 1 snorlax snorlax   3441 Mar 26 08:40 single.c
-rw-rw-r-- 1 snorlax snorlax   5648 Mar 26 09:15 single.o
-rw-rw-r-- 1 snorlax snorlax 29348 Mar 26 01:23 src.txt
```

//server output

No pipe commands dectected.

//client input

cd

//client received

Your path now:

/home/snorlax

//server output

No pipe commands dectected.

//client input

ls -l | wc

//client received

```
21      182     1160
```

//client input

exit

//client received

GOODBYE!

//server output

One client is disconnected.

- Invalid input

```
//client input Invalid commands
aaa

//client received
Commands Error

//server output
No pipe commands dectected.
execvp: No such file or directory
```

```
//client input Invalid pipe command
ls -l |

//client received
Invalid pipe
```

```
//client input Invalid pipe command
| ls

//client received
Invalid pipe
```

```
//client input
cd aaa

//client received
Invalid path.

//server output
No pipe commands dectected.
```

single

- Valid input

```
//input
./single

//output
The size is 10x10.
Time consumed: 0.003000 milliseconds.
```

multi

- Valid input

```
//input
```

```
./multi
```

```
//output
```

```
The size is 10x10.
```

```
Time consumed: 0.616000 milliseconds.
```

```
//input
```

```
./multi 100
```

```
//output
```

```
Time consumed: 3.823000 milliseconds.
```