

Lab1 - TCP & UDP

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Key point

1. used **thread pool** to implement multi-thread operations.
2. used **strategy design pattern** to reduce maintenance difficulty, and clear the code.
3. used **regular expression** to handle command parsing.
4. used **TCP** for handle the commands, **UDP** for transferring files.
5. considered **robustness**.

How to run

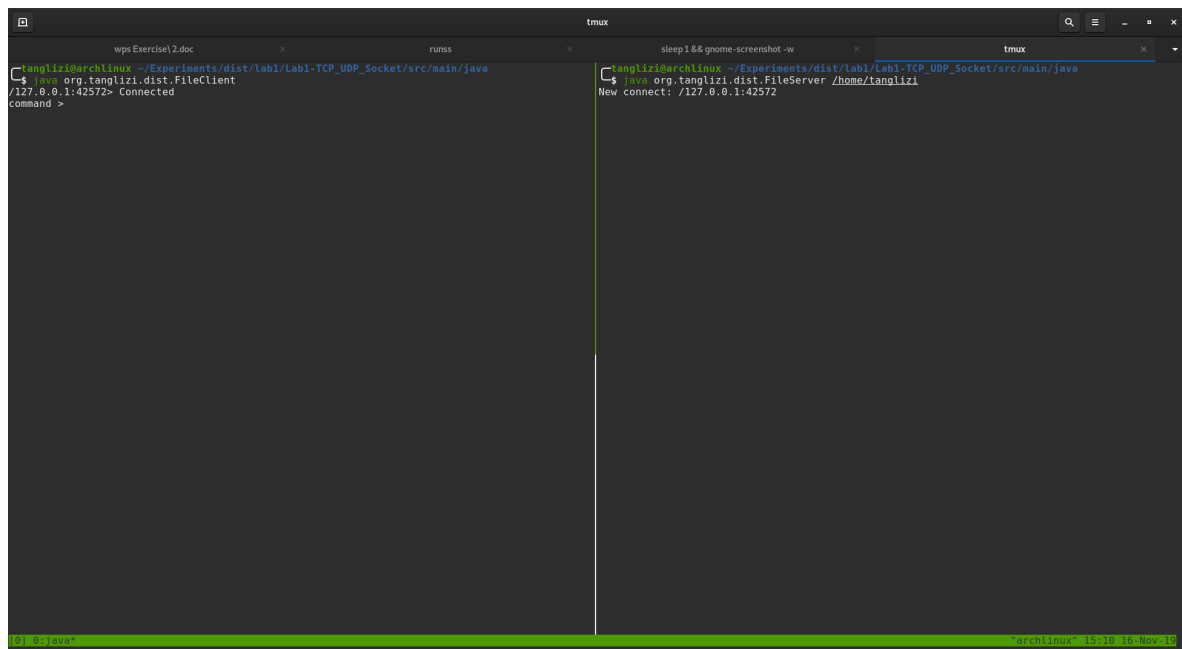
Deploy

```
cd Lab1-TCP_UDP_Socket/src/main/java
javac org/tanglizi/dist/FileServer.java org/tanglizi/dist/FileClient.java
```

Run

```
# run FileServer:
java org.tanglizi.dist.FileServer /home/
# run FileClient:
java org.tanglizi.dist.FileClient
```

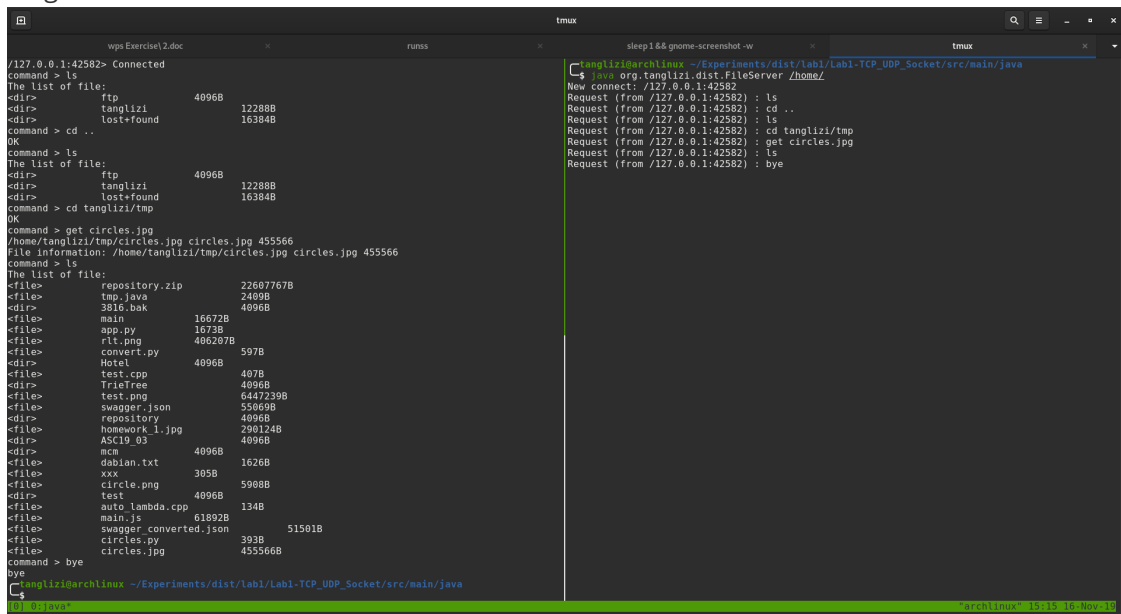
And then your terminal will be like this:



Demo screen shot

Left side is client, and right side is server.

- Single client



- Two client

```
tmux
wps Exercise1.2.doc
runss
sleep 1&6 gnome-screenshot -w
tmux

tanglizhi@archlinux ~/Experiments/dist/lab1/Lab1-TCP_UDP_Socket/src/main/java
$ java org.tanglizhi.dist.FileClient
/127.0.0.1:42588> Connected
command > ls
The list of file:
<dir>      ftp      4096B
<dir>      tanglizi  12288B
<dir>      lost+found 16384B
command > cd tanglizi/tmp
OK
command > get circles.jpg
/home/tanglizhi/tmp/circles.jpg circles.jpg 455566
File information: /home/tanglizhi/tmp/circles.jpg circles.jpg 455566
command > bye
bye
tanglizhi@archlinux ~/Experiments/dist/lab1/Lab1-TCP_UDP_Socket/src/main/java
$

tanglizhi@archlinux ~/Experiments/dist/lab1/Lab1-TCP_UDP_Socket/src/main/java
$ java org.tanglizhi.dist.FileClient
/127.0.0.1:42590> Connected
command > ls
The list of file:
<dir>      ftp      4096B
<dir>      tanglizi  12288B
<dir>      lost+found 16384B
command > get circles.py
no such file
File information: no such file
server has no such file, please check the filename.
command > cd tanglizi/tmp
OK
command > get circles.py
/home/tanglizhi/tmp/circles.py circles.py 393
File information: /home/tanglizhi/tmp/circles.py circles.py 393
command > bye
bye
tanglizhi@archlinux ~/Experiments/dist/lab1/Lab1-TCP_UDP_Socket/src/main/java
$

tanglizhi@archlinux ~/Experiments/dist/lab1/Lab1-TCP_UDP_Socket/src/main/java
$ java org.tanglizhi.dist.FileServer /home/
New connect: /127.0.0.1:42588
New connect: /127.0.0.1:42590
Request (from /127.0.0.1:42588): ls
Request (from /127.0.0.1:42588): ls
Request (from /127.0.0.1:42588): cd tanglizi/tmp
Request (from /127.0.0.1:42588): get circles.jpg
Request (from /127.0.0.1:42590): get circles.py
Request (from /127.0.0.1:42590): cd tanglizi/tmp
Request (from /127.0.0.1:42590): get circles.py
Request (from /127.0.0.1:42590): bye
Request (from /127.0.0.1:42588): bye
```

- Robustness test (pay attention to the error message)

```
tmux
wps Exercise1.2.doc
runss
sleep 1&6 gnome-screenshot -w
tmux

tanglizhi@archlinux ~/Experiments/dist/lab1/Lab1-TCP_UDP_Socket/src/main/java
$ java org.tanglizhi.dist.FileClient
/127.0.0.1:42602> Connected
command > ls
The list of file:
<dir>      ftp      4096B
<dir>      tanglizi  12288B
<dir>      lost+found 16384B
command > get xxx
no such file
File information: no such file
server has no such file, please check the filename.
command > cd xxx
no such directory
command > cd ..
OK
command > ls
The list of file:
<dir>      ftp      4096B
<dir>      tanglizi  12288B
<dir>      lost+found 16384B
command > unknownCommand
no such command
command > get tanglizi/tmp/circles.py
/home/tanglizhi/tmp/circles.py circles.py 393
File information: /home/tanglizhi/tmp/circles.py circles.py 393
command > get tanglizi/tmp/circles.py
/home/tanglizhi/tmp/circles.py circles.py 393
File information: /home/tanglizhi/tmp/circles.py circles.py 393
same file is in local current directory.
command >

tanglizhi@archlinux ~/Experiments/dist/lab1/Lab1-TCP_UDP_Socket/src/main/java
$ java org.tanglizhi.dist.FileServer /home/
New connect: /127.0.0.1:42602
Request (from /127.0.0.1:42602): ls
Request (from /127.0.0.1:42602): get xxx
Request (from /127.0.0.1:42602): cd xxx
Request (from /127.0.0.1:42602): cd ..
Request (from /127.0.0.1:42602): ls
Request (from /127.0.0.1:42602): unknownCommand
Request (from /127.0.0.1:42602): get tanglizi/tmp/circles.py
Request (from /127.0.0.1:42602): get tanglizi/tmp/circles.py
```