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HOW TO RUN FOR TESTING:

Must be run in this order port/mount and serveraddress are changeable this is simply an example

```
./server -port 15668 -mount /tmp/myfuse
```

```
./client -port 15668 -address localhost -mount /tmp/OS416_kvtFUSE
```

```
./testclient /tmp/OS416_kvtFUSE
```

Program Layout:

Client folder:

Contains the client code to capture system calls and relay to our server code

Server folder:

Contains the server code, client connects to this and relays the command given to it from the test client:

Testclient folder:

Contains all the code to test our server/client setup.

Work Done:

First, we built the server and client and connected them through RPC communication. This was our first step as it seemed the most important to get everything working. Next up we mounted the FUSE system on the client program and got most of the operations needed working locally before exporting them to the server. Past this obviously we started sending the commands to the server to be executed remotely instead of locally on the client. Lastly was to build a testclient that would be used to ensure all of our commands were getting sent the server and executed correctly.

Difficulties:

Overall throughout the design and implementation of this project I experience a multitude of difficulties. Originally, I misinterpreted the exact layout of the project, I assumed somehow both the server and client had to be mounted with FUSE. Secondly, I struggled with how and what exactly to send over socket communication between the client and the server.

Working Examples: Run testclient

RPC working:

```
[kjs264@grep server]$ ./server -port 15668 -mount /tmp/aaafuse
15668 ./server -f
Starting ThreadWatch
got 01|/.Trash
Com:1
getattr received
got 01|/.Trash-85400
Com:1
setattr received

[kjs264@grep client]$ ./client -port 15668 -address localhost -mount /tmp/fusecl
ass11
./client localhost /tmp/fuseclass11 15668
HERE
Connection Established
GETATTR /.Trash
GETATTR /.Trash-85400
```

Mkdir working: - Highlighted is where the client sends the command to the server to create and the server received it. Lastly is the folder that is created.

```
getattr received
got 01|/aaaaa
Com:1
setattr received
got 06|/aaaaa|448
Com:6
mkdir received
DIR:/tmp/aaafuse/aaaaa
got 01|/aaaaa
Com:1
setattr received
got 01|/aaaaa
Com:1

[kjs264@grep client]$ ./client -port 15668 -address localhost -mount /tmp/fusecl
ass11
./client localhost /tmp/fuseclass11 15668
HERE
Connection Established
GETATTR /.Trash
GETATTR /.Trash-85400
GETATTR /aaaaa
DIR:/aaaaa 448
GETATTR /aaaaa
got create /aaaaa
GETATTR /aaaaa
```

Read/Write working:

```
[kjs264@grep testclient]$ ./testclient /tmp/fuseclass11
Mkdir test started:dir already exists
CREATE TEST: NOT IMPLEMENT YET
getattr test started:st_mode is 764233813 for file /tmp/fuseclass11/test.txt
Write Test Started: Created test.txt on server - writing Hello, World
Read test started:read 12 bytes got : Hello, World
```

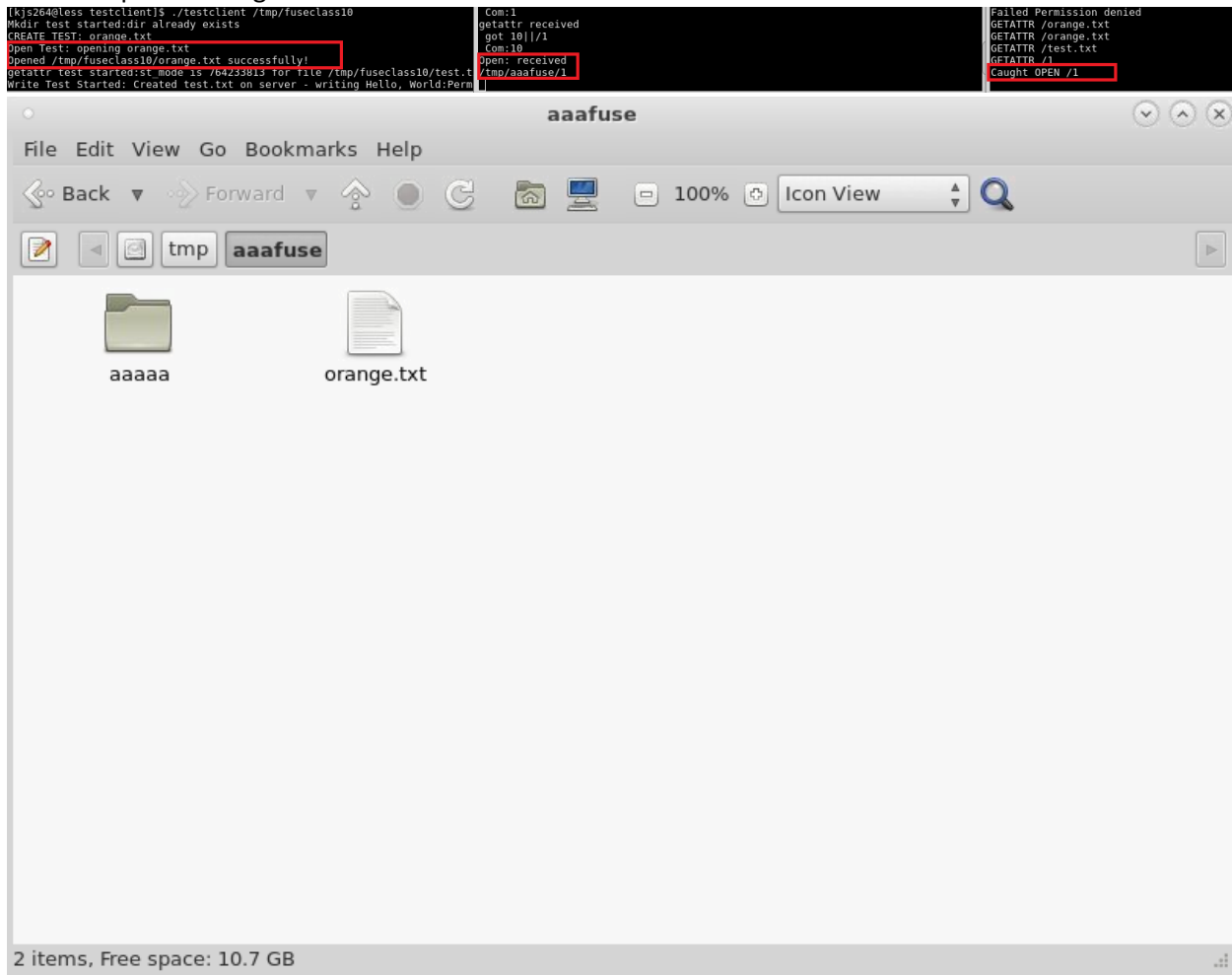
Create working: Highlighted in order is the testclient sending the command to the client(far right) and then finally sent to the server for creation (Middle client)

```
[kjs264@grep testclient]$ ./testclient /tmp/fuseclass10
Mkdir test started:dir already exists
CREATE TEST: NOT IMPLEMENT YET
getattr test started:st_mode is 764233813 for file /tmp/fuseclass10/test.txt
Write Test Started: Created test.txt on server - writing Hello, World
Read test started:read 12 bytes got : Hello, World////
[kjs264@grep testclient]$

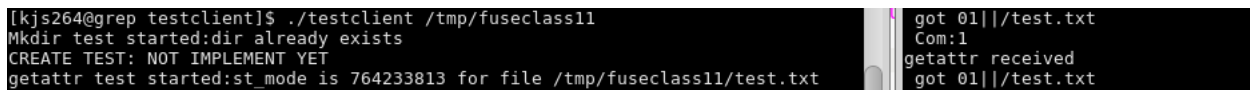
got 01|/orange.txt
Com:1
setattr received
got 13|/orange.txt|33216
Com:13
create received
got 01|/orange.txt

GETATTR /test.txt
got create /test.txt
GETATTR /test.txt
GETATTR /aaaaa
DIR:/aaaaa 448
GETATTR /orange.txt
got create /orange.txt
```

Open working:



Getattr working:



Responsibilities:

Kevin Slachta: server/client and report

Vivek Rajan: server and report