

Lab 6

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2018A7PS0243G

There are many screenshots attached, all screenshots are in order as they were clicked i.e. in increasing time reference.

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server.c - Documents [WSL: Ubuntu-20.04] - Visual Studio Code
File Edit Selection View Go Run Terminal Help
C server.c ../madsem C server.c ../server C client.c ../madsem C client.c ../lab6 X ... C server.c X README
CN > lab6 > C client.c > main(int, char *[])
5 #include<string.h>
6 #include<unistd.h>
7
8
9 int main(int argc, char *argv[]){
10
11     if(argc != 3){
12         printf("command line argument not proper\n");
13     }
14 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
lab6$ gcc -o server server.c -lpthread -lrt
lab6$ ./server 12345
connection established with client.
[]

CN > lab6 > C server.c > connection(void *)
5 #include<string.h>
6 #include<semaphore.h>
7 #include<pthread.h>
8
9
10 sem_t sem;
11 void* connection(void* param);
12
13 int main(int argc, char *argv[]){
14 }

lab6$ gcc -o client client.c
lab6$ ./client 127.0.0.1 12345
Sucessfully connected with server
[]

1: server, client
```

```
server.c - Documents [WSL: Ubuntu-20.04] - Visual Studio Code
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C server.c ../madsem C server.c ../server C client.c ../madsem C client.c ../lab6 X ... C server.c X README
CN > lab6 > C client.c > main(int, char *[])
5 #include<string.h>
6 #include<unistd.h>
7
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9 int main(int argc, char *argv[]){
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11     if(argc != 3){
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14 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
lab6$ ./server 12345
connection established with client.
[]

CN > lab6 > C server.c > connection(void *)
5 #include<string.h>
6 #include<semaphore.h>
7 #include<pthread.h>
8
9
10 sem_t sem;
11 void* connection(void* param);
12
13 int main(int argc, char *argv[]){
14 }

lab6$ ./client 127.0.0.1 12345
Sucessfully connected with server
hello!
[]

1: server, client
```

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File Edit Selection View Go Run Terminal Help
server.c - Documents [WSL: Ubuntu-20.04] - Visual Studio Code

C server.c .../madsem C server.c .../server C client.c .../madsem C client.c .../lab6 X ... C server.c X README

CN > lab6 > C client.c > main(int, char *[])
5 #include<string.h>
6 #include<unistd.h>
7
8
9 int main(int argc, char *argv[]){
10
11     if(argc != 3){
12         printf("command line argument not proper\n");
13     }
14 }

CN > lab6 > C server.c > connection(void *)
15 #include<stdio.h>
16 #include<string.h>
17 #include<pthread.h>
18 #include<semaphore.h>
19
20 sem_t sem;
21 void* connection(void* param);
22
23 int main(int argc, char *argv[]){
24     pthread_t t;
25     pthread_create(&t, NULL, connection, (void*)1);
26     pthread_join(t, NULL);
27     return 0;
28 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

lab6\$./server 12345
connection established with client.
hello
reply

lab6\$./client 127.0.0.1 12345
Sucessfully conected with server
hello
tylper

1: server, client

WSL: Ubuntu-20.04 master 0 0 0 Ln 77, Col 35 Tab Size: 4 UTF-8 LF C Linux

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8
9 int main(int argc, char *argv[]){
10
11     if(argc != 3){
12         printf("command line argument not proper\n");
13     }
14 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
lab6$ ./server 12345
connection established with client.
lolleh
reply1
zollleh
reply2
[]

lab6$ ./client 127.0.0.1 12345
Successfully connected with server
hellol
tylper
hellol2
2ylper
[]

1: server, client
```

```
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server.c - Documents [WSL: Ubuntu-20.04] - Visual Studio Code

C server.c ./madsem C server.c ./server C client.c ./madsem C client.c ./lab6 X ... C server.c X README
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11     if(argc != 3){
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13     }
14 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
lab6$ ./server 12345
connection established with client.
lolleh
reply1
zollleh
reply2
A client left
[]

lab6$ ./client 127.0.0.1 12345
Successfully connected with server
hellol
tylper
hellol2
2ylper
exit
lab6$
```

```
File Edit Selection View Go Run Terminal Help
server.c - Documents [WSL: Ubuntu-20.04] - Visual Studio Code

C server.c .../main.c C server.c .../server C client.c .../main.c C client.c .../lab6 X ... C server.c X README
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6 #include<unistd.h>
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CN > lab6 > C server.c > connection(void *)
5 #include<string.h>
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8 #include<pthread.h>
9
10 sem_t sem;
11 void* connection(void* param);
12
13 int main(int argc, char *argv[]){
14 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
lab6$ ./server 12345
connection established with client.
lolleh
reply1
zolleh
reply2
A client left
connection established with client.
connection established with client.
connection established with client.
connection established with client.
[]

lab6$ ./client 127.0.0.1 12345
Successfully connected with server
hello1
yylper
hello2
yylper
exit
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
[]

lab6$ ./client 127.0.0.1 12345
Successfully connected with server
[]

lab6$ ./client 127.0.0.1 12345
Successfully connected with server
[]

lab6$ ./client 127.0.0.1 12345
Successfully connected with server
[]

WSL: Ubuntu-20.04 master* 0 0 0 Ln 77, Col 35 Tab Size: 4 UTF-8 LF C Linux
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File Edit Selection View Go Run Terminal Help
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10 sem_t sem;
11 void* connection(void* param);
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13 int main(int argc, char *argv[]){
14 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
lab6$ ./server 12345
connection established with client.
lolleh
reply1
zolleh
reply2
A client left
connection established with client.
connection established with client.
connection established with client.
connection established with client.
itnleic morf lolleh
[]

lab6$ ./client 127.0.0.1 12345
Successfully connected with server
hello1
yylper
hello2
yylper
exit
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
hello1 from client
[]

lab6$ ./client 127.0.0.1 12345
Successfully connected with server
[]

lab6$ ./client 127.0.0.1 12345
Successfully connected with server
[]

lab6$ ./client 127.0.0.1 12345
Successfully connected with server
[]

WSL: Ubuntu-20.04 master* 0 0 0 Ln 77, Col 35 Tab Size: 4 UTF-8 LF C Linux
```

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File Edit Selection View Go Run Terminal Help
server.c - Documents [WSL: Ubuntu-20.04] - Visual Studio Code

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CN > lab6 > C server.c > connection(void *)
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8 #include<pthread.h>
9
10 sem_t sem;
11 void* connection(void* param);
12
13 int main(int argc, char *argv[]){
14 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
lab6$ ./server 12345
connection established with client.
101leh
reply1
201leh
reply2
A client left
connection established with client.
connection established with client.
connection established with client.
1tnelc morf 101leh
2tnelc morf 201leh
3tnelc morf 301leh
4tnelc morf 401leh
lab6$ ./client 127.0.0.1 12345
Successfully conected with server
hello1
1ylper
hello2
2ylper
exit
lab6$ ./client 127.0.0.1 12345
Successfully conected with server
hello1 from client1
lab6$ ./client 127.0.0.1 12345
Successfully conected with server
hello2 from client2
lab6$ ./client 127.0.0.1 12345
Successfully conected with server
hello3 from client3
lab6$ ./client 127.0.0.1 12345
Successfully conected with server
hello4 from client4
```

```
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server.c - Documents [WSL: Ubuntu-20.04] - Visual Studio Code

C server.c ./main.c C server.c ./server C client.c ./main.c C client.c ./lab6 X ... C server.c X README
CN > lab6 > C client.c > main(int, char *[])
5 #include<string.h>
6 #include<unistd.h>
7
8
9 int main(int argc, char *argv[]){
10
11     if(argc != 3){
12         printf("command line argument not proper\n");
13     }
14 }

CN > lab6 > C server.c > connection(void *)
5 #include<string.h>
6 #include<unistd.h>
7 #include<semaphore.h>
8 #include<pthread.h>
9
10 sem_t sem;
11 void* connection(void* param);
12
13 int main(int argc, char *argv[]){
14 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
lab6$ ./server 12345
connection established with client.
101leh
reply1
201leh
reply2
A client left
connection established with client.
connection established with client.
connection established with client.
1tnelc morf 101leh
2tnelc morf 201leh
3tnelc morf 301leh
4tnelc morf 401leh
reply1 for 1hello
lab6$ ./client 127.0.0.1 12345
Successfully conected with server
hello1
1ylper
hello2
2ylper
exit
lab6$ ./client 127.0.0.1 12345
Successfully conected with server
hello1 from client1
0lleh1 rof 1ylper
lab6$ ./client 127.0.0.1 12345
Successfully conected with server
hello2 from client2
lab6$ ./client 127.0.0.1 12345
Successfully conected with server
hello3 from client3
lab6$ ./client 127.0.0.1 12345
Successfully conected with server
hello4 from client4
```

```
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8
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7 #include<semaphore.h>
8 #include<pthread.h>
9
10 sem_t sem;
11 void* connection(void* param);
12
13 int main(int argc, char *argv[]){
14 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

lab6$ ./server 12345
connection established with client.
101leh
reply1
201leh
reply2
A client left
connection established with client.
connection established with client.
connection established with client.
1tneilc morf 101leh
2tneilc morf 201leh
3tneilc morf 301leh
4tneilc morf 401leh
reply1 for 1hello
reply2 for 2hello
reply3 for 3hello
reply4 for 4hello

lab6$ ./client 127.0.0.1 12345
Successfully conected with server
hello1
1ylper
hello2
2ylper
exit
lab6$ ./client 127.0.0.1 12345
Successfully conected with server
hello1 from client1
0lleh1 rof 1ylper

lab6$ ./client 127.0.0.1 12345
Successfully conected with server
hello2 from client2
201leh rof 2ylper

lab6$ ./client 127.0.0.1 12345
Successfully conected with server
hello3 from client3
301leh rof 3ylper

lab6$ ./client 127.0.0.1 12345
Successfully conected with server
hello4 from client4
401leh rof 4ylper

WSL: Ubuntu-20.04 master* 0 0 0
```

```
File Edit Selection View Go Run Terminal Help
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10 sem_t sem;
11 void* connection(void* param);
12
13 int main(int argc, char *argv[]){
14 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

lab6$ ./server 12345
connection established with cl
ient.
101leh
reply1
201leh
reply2
A client left
connection established with cl
ient.
connection established with cl
ient.
connection established with cl
ient.
connection established with cl
ient.
1tneilc morf 101leh
2tneilc morf 201leh
3tneilc morf 301leh
4tneilc morf 401leh
reply1 for 1hello
reply2 for 2hello
reply3 for 3hello
reply4 for 4hello

lab6$ ./client 127.0.0.1 12345
Successfully conected with serve
r
hello1
1ylper
hello2
2ylper
exit
lab6$ ./client 127.0.0.1 12345
Successfully conected with serve
r
hello1 from client1
0lleh1 rof 1ylper

lab6$ ./client 127.0.0.1 12345
Successfully conected wit
h server
hello2 from client2
201leh rof 2ylper

lab6$ ./client 127.0.0.1 12345
Successfully conected wit
h server
hello3 from client3
301leh rof 3ylper

lab6$ ./client 127.0.0.1 12345
Successfully conected with
server
hello4 from client4
401leh rof 4ylper

lab6$ ./client 127.0.0.1 12345
Either connection rejected or
server is unreachable!! Exitin
g, Bye!
lab6$
```


server.c - Documents [WSL: Ubuntu-20.04] - Visual Studio Code

File Edit Selection View Go Run Terminal Help

C server.c ./madsem C server.c ./server C client.c ./madsem C client.c ./lab6 X ... C server.c X README

CN > lab6 > C client.c > main(int, char * [])

```
5 #include<string.h>
6 #include<unistd.h>
7
8
9 int main(int argc, char *argv[]){
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

lab6\$./server 12345
connection established with client.
1olleh
reply1
2olleh
reply2
A client left
connection established with client.
connection established with client.
connection established with client.
connection established with client.
1tnelhc morf 1olleh
2tnelhc morf 2olleh
3tnelhc morf 3olleh
4tnelhc morf 4olleh
reply1 for 1hello
reply2 for hello2
reply3 for hello3
reply4 for hello4
A client left
[]

lab6\$./client 127.0.0.1 12345
Successfully connected with server
r
hello1
1ylper
hello2
2ylper
exit
lab6\$./client 127.0.0.1 12345
Successfully connected with server
r
hello1 from client1
olleh1 rof 1ylper
[]

lab6\$./client 127.0.0.1 12345
Successfully connected with server
h server
hello2 from client2
2olleh rof 2ylper
[]

lab6\$./client 127.0.0.1 12345
Successfully connected with server
h server
hello3 from client3
3olleh rof 3ylper
exit
lab6\$ []

lab6\$./client 127.0.0.1 12345
Successfully connected with server
server
hello4 from client4
4olleh rof 4ylper
[]

lab6\$./client 127.0.0.1 12345
Either connection rejected or server is unreachable!! Exitin g, Bye!
lab6\$./client 127.0.0.1 12345
Either connection rejected or server is unreachable!! Exitin g, Bye!
lab6\$

1: server, client, client, t v + [] ^ x

WSL: Ubuntu-20.04 master 0 0 0 0 Ln 77, Col 35 Tab Size: 4 UTF-8 LF C Linux

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CN > lab6 > C client.c > main(int, char * [])

```
5 #include<string.h>
6 #include<unistd.h>
7
8
9 int main(int argc, char *argv[]){
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

lab6\$./server 12345
connection established with client.
1olleh
reply1
2olleh
reply2
A client left
connection established with client.
connection established with client.
connection established with client.
connection established with client.
1tnelhc morf 1olleh
2tnelhc morf 2olleh
3tnelhc morf 3olleh
4tnelhc morf 4olleh
reply1 for 1hello
reply2 for hello2
reply3 for hello3
reply4 for hello4
A client left
connection established with client.
[]

lab6\$./client 127.0.0.1 12345
Successfully connected with server
r
hello1
1ylper
hello2
2ylper
exit
lab6\$./client 127.0.0.1 12345
Successfully connected with server
r
hello1 from client1
olleh1 rof 1ylper
[]

lab6\$./client 127.0.0.1 12345
Successfully connected with server
h server
hello2 from client2
2olleh rof 2ylper
[]

lab6\$./client 127.0.0.1 12345
Successfully connected with server
h server
hello3 from client3
3olleh rof 3ylper
exit
lab6\$ []

lab6\$./client 127.0.0.1 12345
Successfully connected with server
server
hello4 from client4
4olleh rof 4ylper
[]

lab6\$./client 127.0.0.1 12345
Either connection rejected or server is unreachable!! Exitin g, Bye!
lab6\$./client 127.0.0.1 12345
Either connection rejected or server is unreachable!! Exitin g, Bye!
lab6\$./client 127.0.0.1 12345
Successfully connected with server
[]

1: server, client, client, t v + [] ^ x

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[illegible]

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File Edit Selection View Go Run Terminal Help
server.c _madman server.c _fuerer client.c _madman client.c _fab6 ... server.c x README
CN > lab6 > client.c > main(int, char **)
1 #include<string.h>
2 #include<unistd.h>
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9 int main(int argc, char *argv[]){
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```
server.c - Documents [WSL: Ubuntu-20.04] - Visual Studio Code
C server.c _./mainstem C server.c _./server C client.c _./mainstem C client.c _./lab6 X ... C server.c X README
CN > lab6 > C client.c > main(int, char * [])
5 #include<string.h>
6 #include<unistd.h>
7
8
9 int main(int argc, char *argv[]){
CN > lab6 > C server.c > connection(void *)
6 #include<unistd.h>
7 #include<semaphore.h>
8 #include<pthread.h>
9
10 sem_t sem;
11 void* connection(void* param):

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
connection established with client.
connection established with client.
1tnelc morf lolleh
2tnelc morf lolleh
3tnelc morf lolleh
4tnelc morf lolleh
reply1 for hello
reply2 for hello2
reply3 for hello3
reply4 for hello4
A client left
connection established with client.
A client left
A client left
A client left
1tnelc morf olleh
reply for you
connection established with client.
connection established with client.
connection established with client.
1tnelc morf olleh
2tnelc morf olleh
3tnelc morf olleh
4tnelc morf olleh
reply1
reply2
reply3
reply4
A client left
connection established with client.
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
hello1
y1lper
hello2
y1lper
exit
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
hello from client2
y1lper
exit
lab6$
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
h server
hello2 from client2
lolleh rof y1lper
exit
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
hello from client2
y1lper
exit
lab6$
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
h server
hello3 from client3
lolleh rof y1lper
exit
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
hello from client3
y1lper
lab6$
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
server
hello4 from client4
lolleh rof y1lper
exit
lab6$ ./client 127.0.0.1 12345
Either connection rejected or server is unreachable!! Exiting, Bye!
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
lab6$
lab6$ ./client 127.0.0.1 12345
Either connection rejected or server is unreachable!! Exiting, Bye!
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
exit
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
helloe from client4
y1lper
lab6$
```

```
server.c - Documents [WSL: Ubuntu-20.04] - Visual Studio Code
C server.c _./mainstem C server.c _./server C client.c _./mainstem C client.c _./lab6 X ... C server.c X README
CN > lab6 > C client.c > main(int, char * [])
5 #include<string.h>
6 #include<unistd.h>
7
8
9 int main(int argc, char *argv[]){
CN > lab6 > C server.c > connection(void *)
6 #include<unistd.h>
7 #include<semaphore.h>
8 #include<pthread.h>
9
10 sem_t sem;
11 void* connection(void* param):

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
1tnelc morf lolleh
2tnelc morf lolleh
3tnelc morf lolleh
4tnelc morf lolleh
reply1 for hello
reply2 for hello2
reply3 for hello3
reply4 for hello4
A client left
connection established with client.
A client left
A client left
A client left
1tnelc morf olleh
reply for you
connection established with client.
connection established with client.
connection established with client.
1tnelc morf olleh
2tnelc morf olleh
3tnelc morf olleh
4tnelc morf olleh
reply1
reply2
reply3
reply4
A client left
connection established with client.
A client left
A client left
A client left
A client left
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
hello1
y1lper
hello2
y1lper
exit
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
hello from client1
lolleh rof y1lper
hello from client1
uoy rof y1lper
hello from client1
y1lper
exit
lab6$
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
h server
hello2 from client2
lolleh rof y1lper
exit
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
hello from client2
y1lper
exit
lab6$
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
h server
hello3 from client3
lolleh rof y1lper
exit
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
hello from client3
y1lper
exit
lab6$
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
server
hello4 from client4
lolleh rof y1lper
exit
lab6$ ./client 127.0.0.1 12345
Either connection rejected or server is unreachable!! Exiting, Bye!
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
exit
lab6$ ./client 127.0.0.1 12345
Successfully connected with server
helloe from client4
y1lper
exit
lab6$
```


File Edit Selection View Go Run Terminal Helpserver.c - Documents [WSL: Ubuntu-20.04] - Visual Studio Code

C server.c .../main.cC server.c .../serverC client.c .../main.cC client.c .../lab6C server.c xREADME

CN > lab6 > C client.c > main(int, char * [])

5 #include<string.h>
6 #include<unistd.h>
7
8
9 int main(int argc, char *argv[]){

CN > lab6 > C server.c > connection(void *)

10 #include<stdio.h>
11 #include<semaphore.h>
12 #include<pthread.h>
13
14 sem_t sem;
15 void* connection(void* param):

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

lab6\$./server 12345
connection established with client.
connection established with client.
connection established with client.
connection established with client.
A client left
connection established with client.
lolleh
reply!
A client left
[]

lab6\$./client 127.0.0.1 12345
Successfully connected with server
r
exit
lab6\$./client 127.0.0.1 12345
Successfully connected with server
r
hello!
tylper
exit
lab6\$ []

lab6\$./client 127.0.0.1 12345
Successfully connected with server
r
[]

lab6\$./client 127.0.0.1 12345
Successfully connected with server
r
[]

lab6\$./client 127.0.0.1 12345
Successfully connected with server
r
[]

lab6\$./client 127.0.0.1 12345
Either connection rejected or server is unreachable!! Exit!
g, Bye!
lab6\$ []

1: server, bash, client, d

+ [] ^ x

WSL: Ubuntu-20.04 master* 0 0 0 0

Ln 77, Col 35 Tab Size: 4 UTF-8 LF C Linux

[illegible]

The screenshot displays the Visual Studio Code editor interface with a project named "server.c - Documents [WSL: Ubuntu-20.04]". The top menu bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help.

The Explorer sidebar on the left shows the following files:

- C server.c ..madam
- C server.c ../wvew
- C client.c ..madam
- C client.c ../lab6 ✕
- C server.c ✕
- README

The main editor area contains two source files side-by-side:

Left File (C client.c ..madam):

```
CN > lab6 > C client.c > main(int, char *[])  
5 #include<string.h>  
6 #include<unistd.h>  
7  
8  
9 int main(int argc, char *argv[]){
```

Right File (C server.c ✕):

```
CN > lab6 > C server.c > connection(void *)  
6 #include<string.h>  
7 #include<semaphore.h>  
8 #include<pthread.h>  
9  
10 sem_t sem;  
11 void* connection(void* param);
```

The TERMINAL view at the bottom shows six separate terminal sessions:

- Terminal 1:** lab6\$./server 12345
connection established with client.
connection established with client.
A client left
connection established with client.
lolleh
reply1
A client left
connection established with client.
Zolleh
reply2
- Terminal 2:** lab6\$./client 127.0.0.1 12345
Successfully connected with server
r
exit
lab6\$./client 127.0.0.1 12345
Successfully connected with server
r
hello1
zylper
exit
lab6\$./client 127.0.0.1 12345
Successfully connected with server
r
hello2
zylper
- Terminal 3:** lab6\$./client 127.0.0.1 12345
Successfully connected with server
r
- Terminal 4:** lab6\$./client 127.0.0.1 12345
Successfully connected with server
r
- Terminal 5:** lab6\$./client 127.0.0.1 12345
Successfully connected with server
r
- Terminal 6:** lab6\$./client 127.0.0.1 12345
Either connection rejected or server is unreachable!! Exitin g... Bye!
lab6\$

The status bar at the bottom indicates the active window is "WSL: Ubuntu-20.04" with a master branch, and the file encoding is UTF-8.