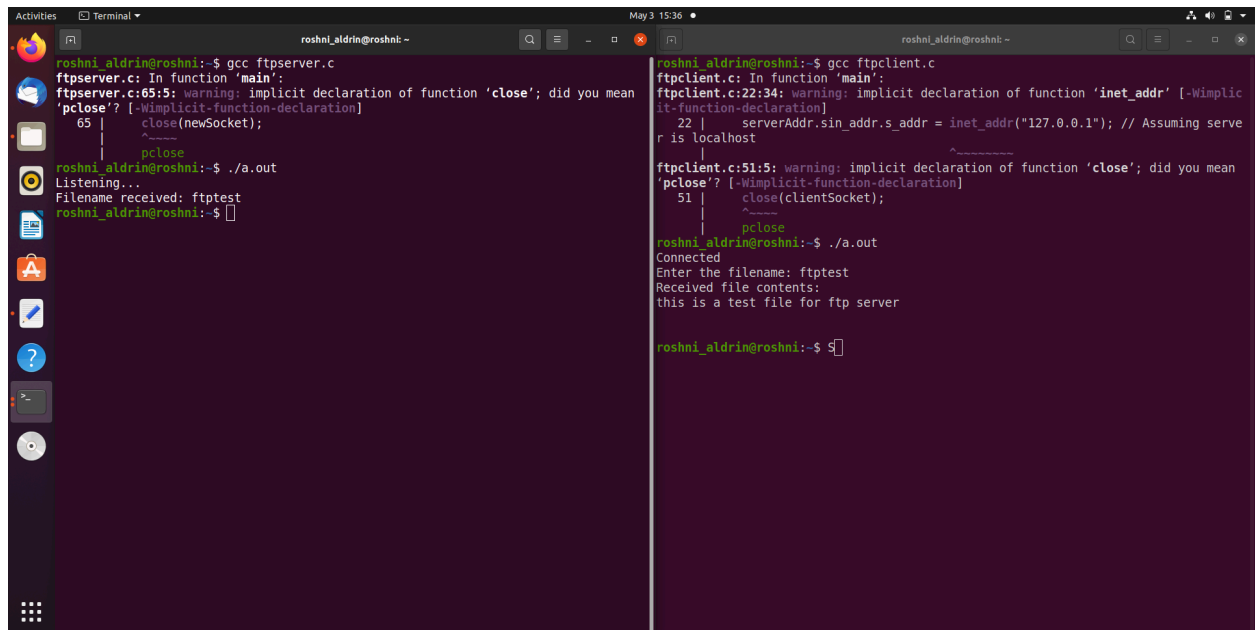


FTP SERVER



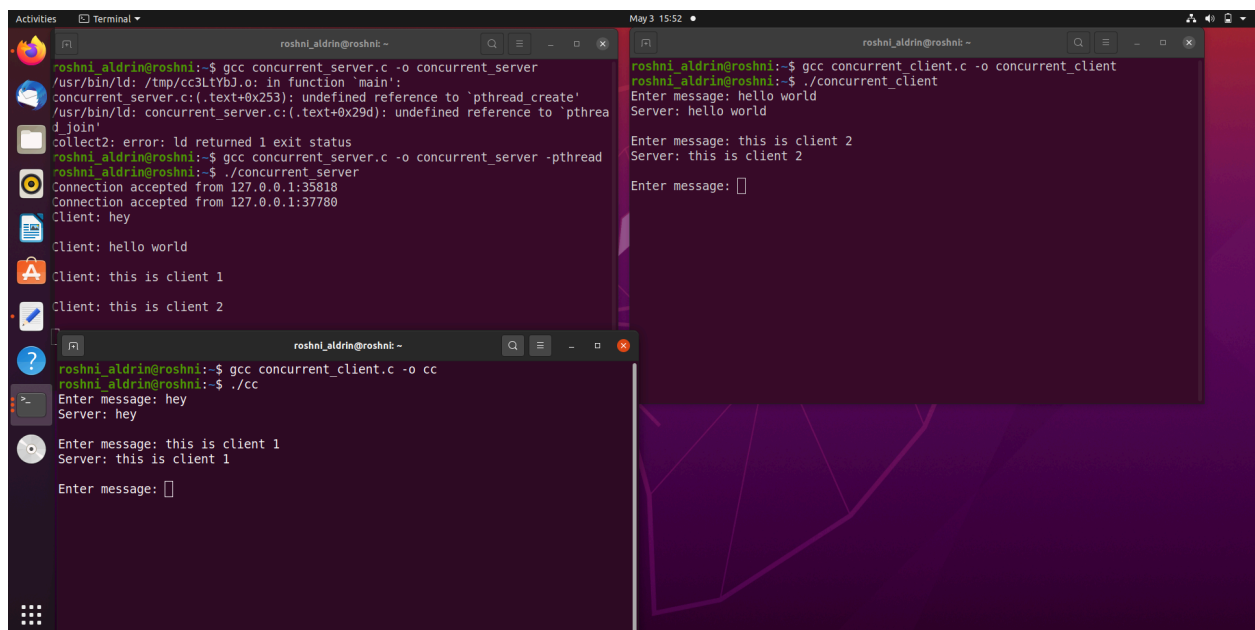
The image shows two terminal windows side-by-side. The left window shows the compilation of `ftpserver.c` with warnings about implicit declarations of `close` and `pclose`. It then shows the execution of `./a.out`, which starts listening for connections. The right window shows the compilation of `ftpclient.c` with similar warnings. It then shows the execution of `./a.out`, which connects to the server, enters the filename `ftptest`, and receives the file contents: `this is a test file for ftp server`.

```
roshni_aldrin@roshni:~$ gcc ftpserver.c
ftpserver.c: In function 'main':
ftpserver.c:65:5: warning: implicit declaration of function 'close'; did you mean
'pclose'? [-Wimplicit-function-declaration]
   65 |     close(newSocket);
      |     ^~~~~~
      |     pclose
roshni_aldrin@roshni:~$ ./a.out
Listening...
Filename received: ftptest
roshni_aldrin@roshni:~$

roshni_aldrin@roshni:~$ gcc ftpclient.c
ftpclient.c: In function 'main':
ftpclient.c:22:34: warning: implicit declaration of function 'inet_addr' [-Wimplicit-function-declaration]
   22 |     serverAddr.sin_addr.s_addr = inet_addr("127.0.0.1"); // Assuming server
      |                                  ^~~~~~
ftpclient.c:51:5: warning: implicit declaration of function 'close'; did you mean
'pclose'? [-Wimplicit-function-declaration]
   51 |     close(clientSocket);
      |     ^~~~~~
      |     pclose
roshni_aldrin@roshni:~$ ./a.out
Connected
Enter the filename: ftptest
Received file contents:
this is a test file for ftp server

roshni_aldrin@roshni:~$
```

CONCURRENT SERVER



The image shows three terminal windows. The top-left window shows the compilation of `concurrent_server.c` with errors about undefined references to `pthread_create` and `pthread_join`. It then shows the execution of `./concurrent_server` with the `-pthread` flag, which starts listening for connections. The top-right window shows the compilation of `concurrent_client.c` and its execution, which sends messages to the server. The bottom window shows the execution of `./concurrent_client` with the `-cc` flag, which sends messages to the server.

```
roshni_aldrin@roshni:~$ gcc concurrent_server.c -o concurrent_server
/usr/bin/ld: /tmp/cc8LYBj.o: in function 'main':
concurrent_server.c:(.text+0x253): undefined reference to 'pthread_create'
/usr/bin/ld: concurrent_server.c:(.text+0x29d): undefined reference to 'pthread_join'
collect2: error: ld returned 1 exit status
roshni_aldrin@roshni:~$ gcc concurrent_server.c -o concurrent_server -pthread
roshni_aldrin@roshni:~$ ./concurrent_server
Connection accepted from 127.0.0.1:35818
Client: hey
Client: hello world
Client: this is client 1
Client: this is client 2

roshni_aldrin@roshni:~$ gcc concurrent_client.c -o cc
roshni_aldrin@roshni:~$ ./cc
Enter message: hey
Server: hey
Enter message: this is client 1
Server: this is client 1
Enter message:

roshni_aldrin@roshni:~$ gcc concurrent_client.c -o concurrent_client
roshni_aldrin@roshni:~$ ./concurrent_client
Enter message: hello world
Server: hello world
Enter message: this is client 2
Server: this is client 2
Enter message:
```