TOKEN RING

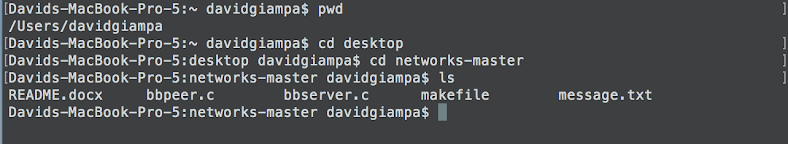
David Giampa

**Accessing the files**

First, Download the zip file from git hub (it’s the Green button the says clone or download) to the Desktop; the name is called networks-master. Extract the actual file from the Zip File by clicking on the Zip file. If you are using a Linux style Operating System like macOS or Ubuntu; open up the terminal. If you are using Microsoft operating system you would need access to an SSH terminal or some type of Linux virtual machine. The terminal icon is shown below.



Once the networks-master file has been downloaded to your Desktop and the terminal is open. Naviagte to the desktop directory by enetering the command “cd desktop”. Then, naviagte to the networks-master file by entering the command “cd networks-master”. Once both commands were successfully entered enter the “ls” command to show all available files.

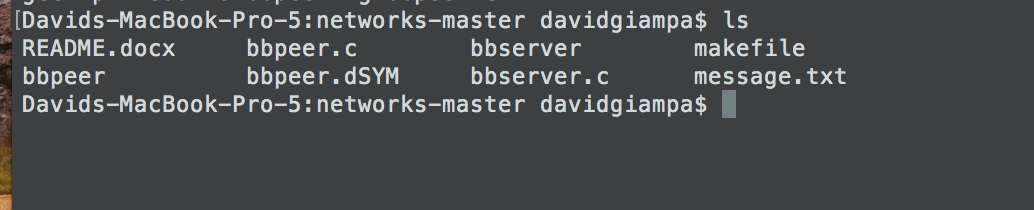


**Compiling the files**

After navigating to the networks-master folder. We must assemble the code to executable files by entering the command “make”. As shown below.

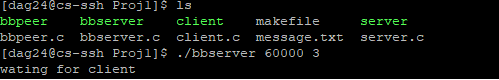


Next, enter the “ls” command, and you will notice two new executable files bbserver and bbpeer.



**Running the Server**

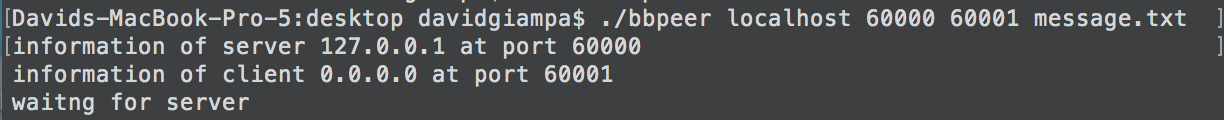
To start the server, enter the command “./bbserver 60000 3”. The command ./bbserver is how you run the executable. The number 60000 is the port number which identifies were the server is located, and the number 3 is how many peers can connect to the server.

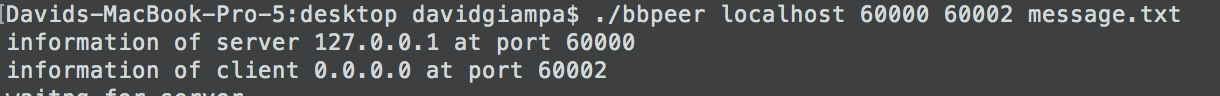


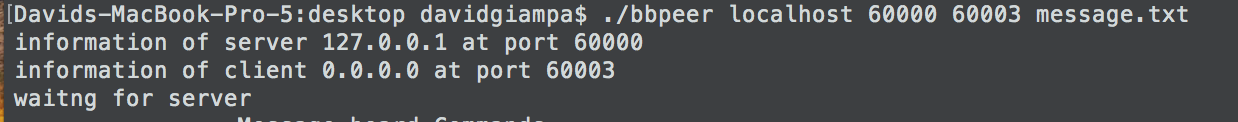
**Running the Peers**

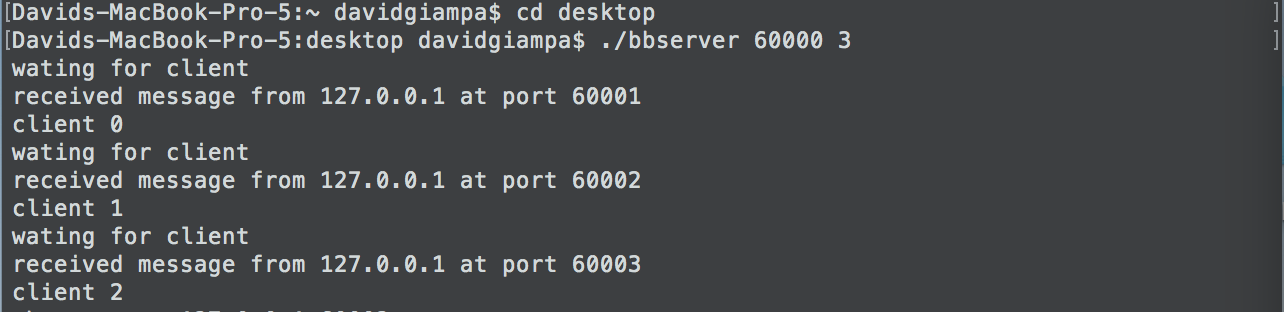
To create three peers, you are going to have to open three terminals by right clicking the terminal icon and selecting new window. To run the peers type in the commands ./bbpeer localhost 60000 60001 message.txt, ./bbpeer localhost 60000 60002 message.txt and ./bbpeer localhost 60000 60003 message.txt. One for each terminal.

Localhost is the IP address of the peer and the server. 60000 is the port number of the Server, So the peers know who to connect to. 60001, 60002 and 60003 are the port numbers of each peer, and message.txt is the shared file that is used to store the written messages.





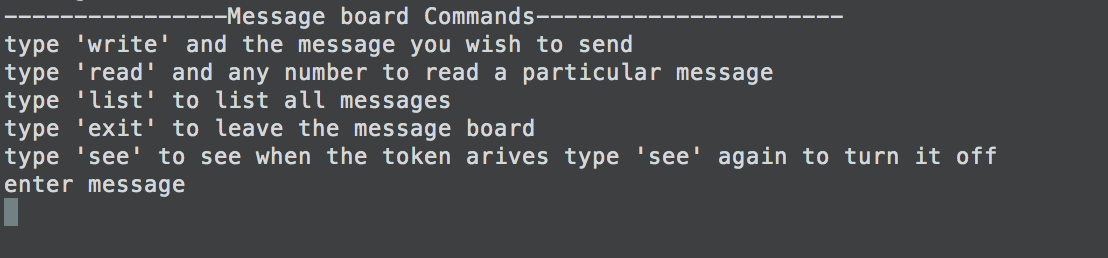


After all Clients connected to server. The Server terminal should look this.

The Server Holds all port and IP information of the connecting Clients.

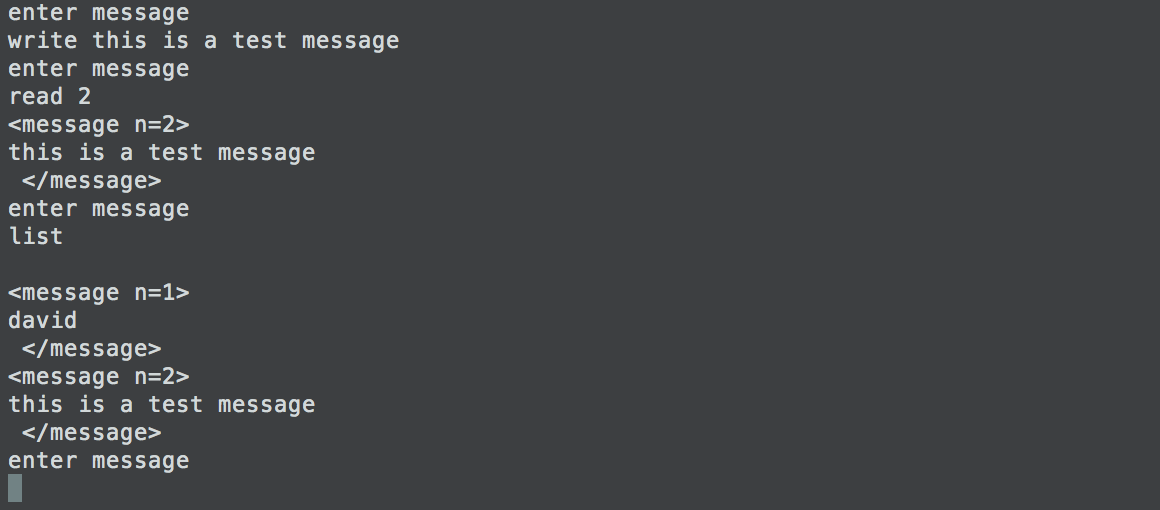
**Message Board Commands**

After all peers have connected to the server. The server will create a ring of peers and then shut down. Thus, achieving a distributed network; meaning a network can remain working without the need of a server. After the ring is formed the peers well receive a command message as shown below.



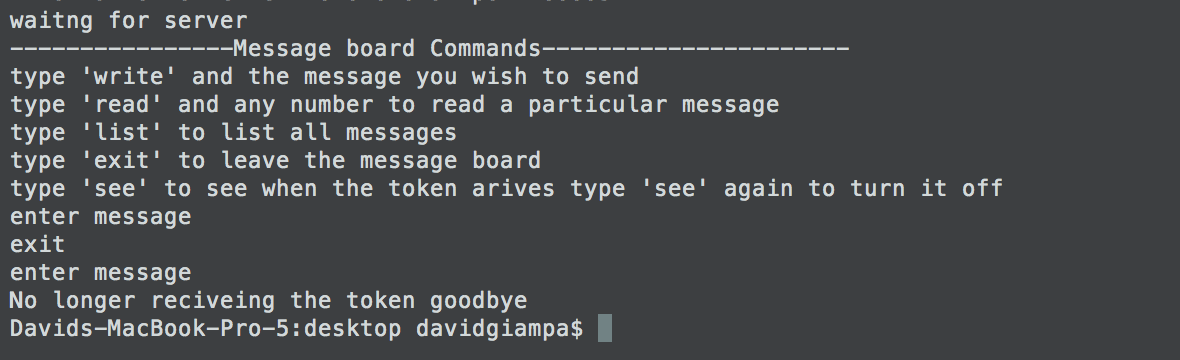
The write, read and list commands are shown below.

Write will allow the user to write to the message board. Read will let the user add a particular message and list displays all messages.



**Exiting and rejoining the ring**

To exiting the ring type the command exit, and that particular client will shut down, and the ring will still be established.

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To join an establish ring the connecting peer will connect to another peer in the ring by using its port number. Notice in the picture below it is using port 60002 instead of 60000.

