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**References:**

I referred the below page to understand how a client establishes connection with server and how a simple transfer of data in form of string takes place over the network. It was only used for understanding the concepts.

<https://www.geeksforgeeks.org/socket-programming-in-java/>

**Note:** Client, Server A and Server B are running on the same machine(“localhost”). For execution of program files three CMD terminals are needed on windows. Lab3.java file is the client file. The “directory\_a” and “directory\_b” file paths need to be updated in the Java code before running the Server A and Server Below is the listing of which file represents which application.

Server A -> ServerBApplication.java

Server B -> ServerAApplication.java

Client -> Lab3.java

**Steps to execute:**

Extract files from ZIP file into a directory.

\*Please ensure jdk bin path is set in environment variable.

1. Open three cmd terminals one for each file (client, serve A, server B).
2. The cmd terminal shall be opened in the directory where respective file is located.

Ex: if you want to run Lab1.java file in CMD terminal 1, then cmd terminal should point to the directory where Lab1.java file is located.

1. Update the directory path for Server A and Server B.
2. Run Server B application
   1. type command “**javac ServerBApplication.java**” to Compile and generate class file.
   2. After successful compilation type command “**java ServerBApplication**” to start server B
3. Run Server A application
   1. type command “**javac ServerAApplication.java**” to Compile and generate class file.
   2. After successful compilation type command “**java ServerAApplication**” to start server A
4. Run Client application
   1. type command “**javac Lab3.java**” to Compile and generate class file.
   2. After successful compilation type command “**java Lab3**” to start client.
   3. As soon as you run the Client , it will give user a menu option as below,
5. List files
6. Lock/ Unlock file
7. Exit
   1. To lock/ unlock a file select the option 2 after which the application list files and will again ask for making selection as below,
8. Lock
9. Unlock
   1. Make the appropriate selection to perform lock and unlock of files.