Bulletin Board System V1.0

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Problem Statement:

we will be simulating a news bulletin board system. In this system there are several processes accessing the system, either getting the news from the system or updating the news. The system will consist of a server that implements the actual news bulletin board and several remote clients that communicate with the server using the TCP/IP protocol suite.

The remote clients will have to communicate with the server to write their news to the bulletie board and also to read the news from the bulletin board.

Program Structure:

- start.java : parses the system.properties file and initialize the system (creating the server and clients), it contains SSHConnection to srart the server and the clients.
- SSHConnect.java : in jsch package, this class contains the SSH code.
- Server.java and Client.java : classes that implement the two peers of the system.

Assumption:

- The readers Id's are 1,2,3,...,n (where n is the number of readers).
- Writers Id;s are n+1,n+2,...,n+m (where n is the number of readers and m is the number of writers).
- The rNum in a specific entry in the server log, includes the reader of that entry.

How to run the code (User guid):

1- put the .java file on the home of the machine.

2- create a folder to hold the logs of the system running in the home of the machine, give it the name logs.

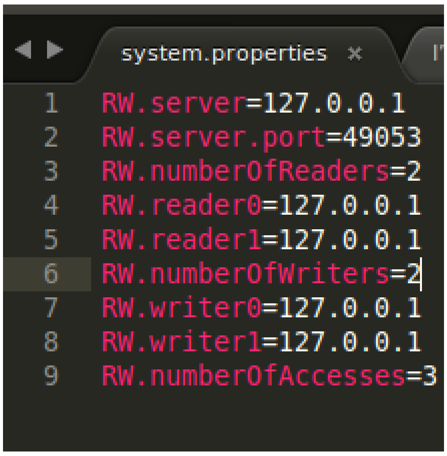
3- change the client user name and server user name in the code.

3- change the client password and server password in the code.

4- put the system.propertoies file in the same directory as the start.java or in the project directory if you will run from an IDE like eclipse.

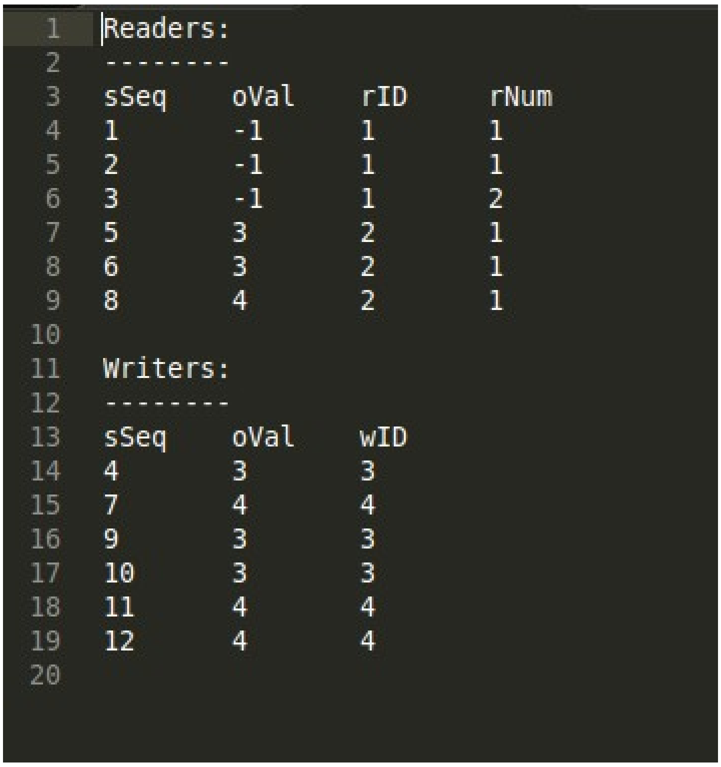
Sample Runs:

System.properties:



```
RW.server=127.0.0.1
RW.server.port=49053
RW.numberOfReaders=2
RW.reader0=127.0.0.1
RW.reader1=127.0.0.1
RW.numberOfWriters=2
RW.writer0=127.0.0.1
RW.writer1=127.0.0.1
RW.numberOfAccesses=3
```

Server log:

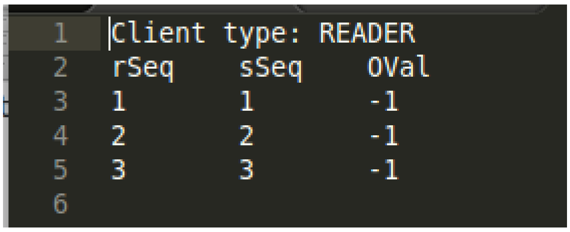


```
Readers:
--------
sSeq    oVal    rID     rNum
1       -1      1       1
2       -1      1       1
3       -1      1       2
5       3       2       1
6       3       2       1
8       4       2       1

Writers:
--------
sSeq    oVal    wID
4       3       3
7       4       4
9       3       3
10      3       3
11      4       4
12      4       4
```

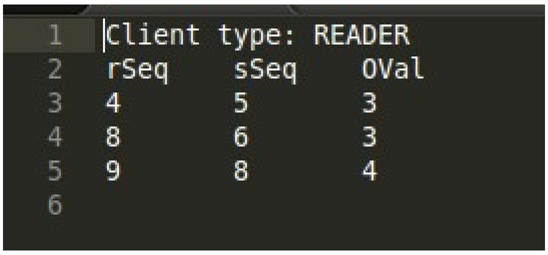
Clients logs:

log1:



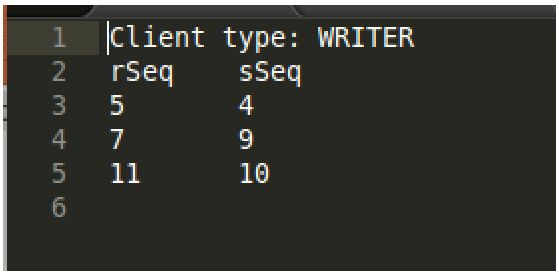
```
Client type: READER
rSeq    sSeq    OVal
1       1       -1
2       2       -1
3       3       -1
```

log2:



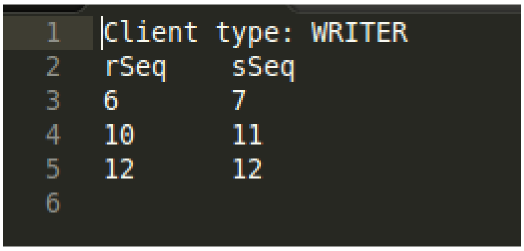
```
Client type: READER
rSeq     sSeq     OVal
4        5        3
8        6        3
9        8        4
```

log3:



```
Client type: WRITER
rSeq     sSeq
5        4
7        9
11       10
```

log4:



```
Client type: WRITER
rSeq     sSeq
6        7
10       11
12       12
```

Notes:

commands to run the server and clients:

- java Client IP port type ID noOfAcceses noOfReaders
- java Server port noOfRequests