Assignment Overview

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In this project, I extend my project 1 and implement Java RMI. The multi-threading is also implemented for multiple clients to access the Key-value store. In project 1, I build the java client and server using TCP and UDP protocol to access and modify data in the key-value store. In this project, I split it into several parts. First, I need to support multithreading for the server. As several clients can connect to the server, the mutual exclusion is important for the system to work properly. I add a semaphore to make sure only one client session can enter the critical session at the same time. Also, I restructure the code to make sure all clients can connect to the server via the same port. Also, I need to make the key-value store unique, as all the clients rely on the same store. So only one unique store should be created at the beginning of the server session. To support multiple clients at the same time, I need to add thread support in the program. After this part, clients can access the server and send requests same time. In the second part, I added java RMI support to the project. As RMI already multi-threaded, what I need to do is refractor the code to support RMI, then add semaphore to make sure mutual exclusion. Locks are acquire at the beginning of put/get/delete actions, and released right before the return. So total 4 executable can be found. And this project only requires the second part.