Assignment Overview:

In the first time I read this assignment, I thought that I can use RMI to implement is key value store, because RMI is a RPC framework and it is implicitly multi-threading. However, I am required to use another RPC framework that needs me to explicitly implement the multi-threading. The purpose of this assignment is to let me have the hand on experience of using RPC framework and to let me have a clear understand of how remote procedure call works. In addition, this assignment also wants me to know the different ways of client and server communication without using socket. The scope of the assignment is to implement a Key-Value store between client and server. The client can do three operations: GET/PUT/DELETE. Get and DELETE operations should be followed by the Key object. PUT operation should be followed by a Key-Value pair. The server should use multi-threading technique to deal with the clients’ requests concurrently. In addition, the server should be able to handle different kinds of errors.

Technical Impression:

For the technical impression, I felt this project was hard, because I did not know any other RPC frameworks except RMI. TA recommended me to learn gRPC and Apache Thrift. Then I installed Thrift through terminal. I found several examples from thrift tutorials. One difficulty that I met with was I did not know how to import apache.thrift to my program, then I got help from my classmate and he imported apache.thrift for me. When I ran the MultiplicationService example, it always showed that MultiplicationService file was missing. Later, I figured out that I can use ‘thrift –gen java filename.thrift’ command to generate a java file and this java file is the MultiplicationService file that I need to incorporate into my program. Eventually I successfully ran these examples in my IDE. I found it is interesting to use Apache thrift to achieve the client and server communication. I feel thrift is a powerful tool. By using Apache thrift, I do not need to worry about how clients and server talk to each other. I only need to focus on writing the business code. One confusion is I wrote my exception to handle the error when user input an unknown operation. However, this error was not handled by my exception. It was handled by TException. I am not sure what is the reason for this. I think this assignment is clear, it is a good assignment and it does not need to improve.