MANUAL-DISTRIBUTED HASH TABLE

Here 8 Server- Server0.java, Server1.java,….., Server7.java are implemented in different directories Server0, Server1,…,Server7. There is one Main Client which asks user to fire query on command prompt. MainClient.java is kept in MainClient directory.

Following java files are created:

Server0.java: Contains code for put, get, del operations on HashTable_0.

Server1.java: Contains code for put, get, del operations on HashTable_1.

Server2.java: Contains code for put, get, del operations on HashTable_2.

Server3.java: Contains code for put, get, del operations on HashTable_3.

Server4.java: Contains code for put, get, del operations on HashTable_4.

Server5.java: Contains code for put, get, del operations on HashTable_5.

Server6.java: Contains code for put, get, del operations on HashTable_6.

Server7.java: Contains code for put, get, del operations on HashTable_7.

MainClient.java: Contains code for letting user enter his query- put,get or del. Calculates a hash function to find a server location to which the requested key/value pairs should be sent. Thereafter sends query to that respective server.

callingHashFunc.java: Contains code to calculate hash function. Hash function is defined as follow:

The input key is a string. Summation of each character in string's ASCII value is taken. Therafter, mod of that summation is taken by No of Servers running.

$$\textbf{Hashvalue} = \sum\left(\boldsymbol{Ascii}\left(\boldsymbol{S}(\boldsymbol{i})\right)\right) \% \boldsymbol{NO\_of\_Servers}$$

Where S(i) is each character in String.

Makefile: In order to automate compilation of each file a make file is created. Makefile is kept in a folder named Anuradha_Chaudhary containing all source code files of this program.

To perform experiment perform following steps:

1. Open a new terminal.
2. Change directory to SourceCode.
3. Run makefile using make command to compile all files.
4. Open a new terminal.
5. Change directory to Server0.
6. Run Server0.
7. Open a new terminal.
8. Change directory to Server1.
9. Run Server1.
10. Open a new terminal.
11. Change directory to Server2.
12. Run Server2.
13. Open a new terminal.
14. Change directory to Server3.
15. Run Server3.
16. Open a new terminal.
17. Change directory to Server4.
18. Run Server4.
19. Open a new terminal.
20. Change directory to Server5.
21. Run Server5.
22. Open a new terminal.
23. Change directory to Server6.
24. Run Server6.
25. Open a new terminal.
26. Change directory to Server7.
27. Run Server7.
28. Open a new terminal.
29. Change directory to MainClient.
30. Run MainClient.
31. MainClient provides interface to user to enter operations – put, get, del. So enter query according to syntax mentioned on command prompt there.
32. When the user enters a command, MainClient first calculates the hashfunction and finds to which server key/value to be sent. After getting Server, MainCient establishes connection with that Server using sockets.
33. Once Connection is established, MainClient performs put, get or del operations whichever was requested.