CS-425 MP1 Report

Group No: 44

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I.   Design
Following the master-slave framework, we build communication between one master (client) and many slaves (servers). First, we have each VM run a server daemon in the background. The server is designed to listen to a pre-coordinated port (8080 by default), receiving the (permitted) requests from a client, execute the request and return the result. Second, a client, which can be run from everywhere in the network, connects to the pre-coordinated port, sends a request command (according to the arguments), to any combination of servers (according to the arguments), and receives and saves the result from the severs.
In this MP, we only permit "grep" queries that are implemented by shell command on the server end, with the framework potential to add more functions later. The client connects and issues requests to the servers in parallel using threads.

II.   Unit Test
Here we assume the shell command "grep" from the OS is already complete for the queries. The test program first generates random patterns according to several parameters involving fixed patters and frequencies. Then it runs the shell command to get the local correct answer. The test is then conducted on checking the consistencies between the answer and our distributed queries with some statistics report.

III.   Some Result