Programming Assignment #2

COEN 241 Introduction to Cloud Computing
Department of Computer Engineering
Santa Clara University

Dr. Ming-Hwa Wang
Phone: (408) 805-4175
Course website:
Office Hours:

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Email address: m1wang@scu.edu
http://www.cse.scu.edu/~mwang2/cloud/
Monday & Wednesday 9:00-9:30am

Due date: midnight April 30, 2017

Linda Tuple Space, Part I (200 points)

Please extend the distributed model, Linda, using C/C++ or Java to support redundancy and fault-tolerant. You need to choose the replication factor of 2 (though the real world system using 3 instead) to simply your job. Any host and any process can fail but the network configurations (i.e., host IP addresses and port numbers) should always available, and the tuples space should consistent.

To support redundancy, consistency, high availability, and fault tolerance, you can use consistent hashing (as Cassandra NoSQL) for efficiently support add/remove hosts. Also, you need to support add/delete hosts dynamically and the format is:

delete {<host name>}
add {(<host name>, <IP address>, <port number>)}

Since your replication factor is 2, the grader will test your p2 by killing at most one process at a time, optionally issuing any one subcommand, and restarting the killed process (note that the port number will change when you restart, thus you need to synch this new port number to other hosts). Your p2 should still give correct result.

Student Name:

ID:

Score:

Correctness and boundary condition (60%):
Error Handling (5%):
Automatic available port finding and support both host name and IP address (5%):
Display output on both server and client windows whenever there is an event happens (5%):
Compiling without warning message (5%):
Modular design, file/directory organizing, showing input, documentation, coding standards, sympathy/typing point with README (20%):

Subtotal:

Late penalty (20% per day):
Special service penalty (5%):

Total score: