Programming Assignment 1

NAPSTER PEER TO PEER SHARING SYSTEM

CS550 – Advanced Operating System

February 22, 2018

NIKITA V. JADHAV

A20401223

PERFORMANCE EVALUATION:

Steps to Run Performance Evaluation:

- Navigate into the the Performance_Evaluate folder:
- The Folder contains:
    - "CreateFiles.java" and "Perf_Test.java"
    - "CentralIndxServer.java"-To Run the Server and "PeerServer.java"
        - To Run the Peer and to perform the Search with Timestamp.
- A folder called "Dummy_Files"
    - 1000 files will be automatically created when CreateFiles.java is executed.
- "indxip.txt" – Edit the File, and Enter the IP Address of the CentralIndxServer into the file.
- To Create the Files automatically (1000 files):
- First Edit the PATH, in the file "CreateFiles.java"
- Example: Inside the file, there is a path to set the files to be created.
- String filename = /Home/…. /…../…../Dummy_Files/ -> This is the Path where the 1000 files will be automatically created.(Set the path).
- To Register those 1000 files which have been created in the Dummy_Files folder, Edit the Path in the file: "Perf_Test.java"
- Inside the file, there is a path to set -> for the files to be Registered.
- File folder = new File("/Home/…..…./…..…/Dummy_Files/") -> This is the Path where the 1000 files that needs to be registered are present.(Set the Path).
- Run ant:
    - Ant
- Or run the following command
    - javac CreateFiles.java
    - javac Perf_Test.java
- Run the CentralIndexServer on different machine:
    - java CentralIndxServer
- The CentralIndxServer is started and it starts to listen on port for incoming peer connections.
- Run the CreateFiles.java -> To create 1000files in the Dummy_Files directory
    - java CreateFiles
- Run Perf_Test.java -> This will Register all the 1000 files present in the directory specified by the path in the Perf_Test.java file
    - java Perf_Test
- Now Run the PeerServer.java: -> This starts the Peer, and this can be used to search for the files which have been registered.
- Timestamp has been added to calculate the Time taken for Register as well as Search functionality.

The Performance_Evaluation Test Results are as follows:

1) REGISTRATION:

a) For 5 Files -> Less than a Second

b) For 10-15 Files ~ Less than a Second

c) For 100 Files ~ 1 Second

d) For 500 Files ~ 2 Seconds

e) For 1500 Files ~ 6 Seconds

f) For 3000 Files ~ 15 Seconds

2) SEARCH:

a) 500 Lookup – 3 Seconds

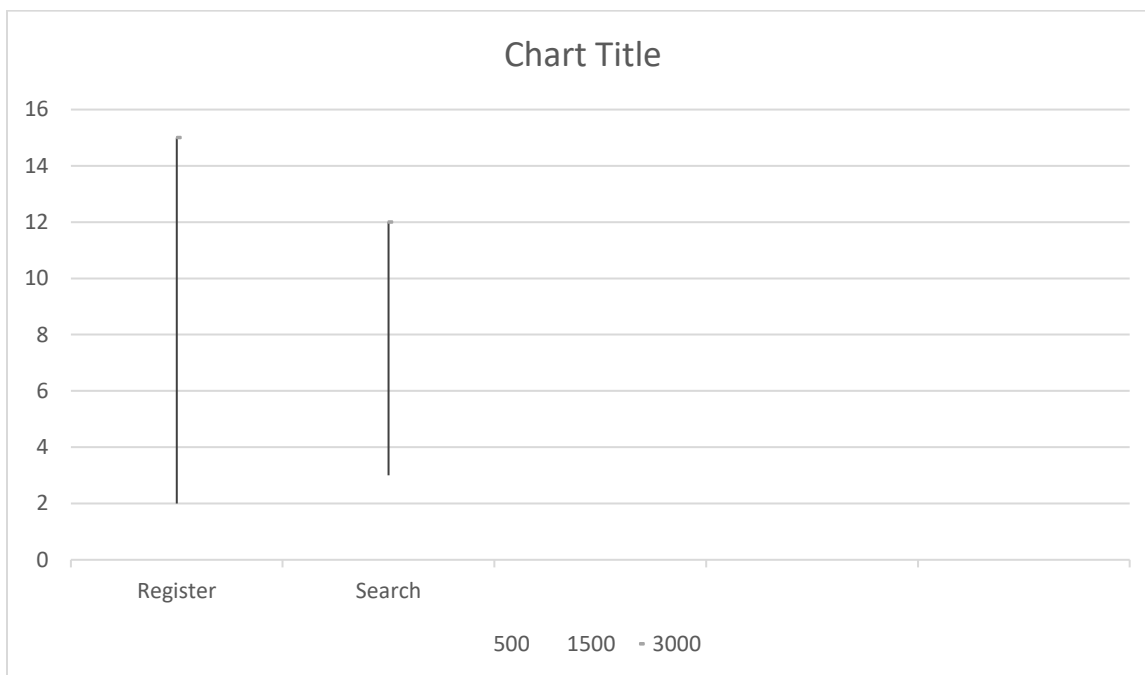b) 1500 Lookup – 6 Seconds

c) 3000 Lookup – 12 Seconds

3) DOWNLOAD:

a) 1kb File Download – Less than a Second

b) 5MB File Download – 8mins.

Peer-To-Peer File Sharing System

Plotted Chart for Performance Evaluation

Few screenshots of Performance evaluation:

Time taken to register:

```
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
Connected to Register on CentralNodeServer on prt 2001
The Time taken to Register:4854
```