**USER DOCUMENTATION**

**General Info**

1) There are 3 programs for the Peer to Peer application:

i) DHT\_Server

ii) P2P\_Server

iii) P2P\_Client

2) Requirements:

These programs must be compiled and run in the Windows 7,8 environment.

**How to compile**

1) DHT\_Server

i) There are 6 .java files:

a) DHT\_Server.java – contains the main method to start

b) Connect\_DHT.java – called by the DHT\_Server.java main method (as a separate thread) to perform DHT to DHT operations

c) Get\_DHT.java – called by Connect\_DHT.java (as 3 separate threads) to maintain TCP connections

between any 2 DHT Servers.

d) Connect\_P2P.java – called by the main method to perform DHT to P2P operations.

e) DHT\_Record.java – data structure for storing DHT Server information.

f) Content\_Record.java – data structure for storing (content, IP) records.

ii) To compile in Command Prompt, type the following:

javac DHT\_Server.java Connect\_DHT.java Get\_DHT.java Connect\_P2P.java DHT\_Record.java Content\_Record.java

OR

javac \*.java

2) P2P\_Server

i) There is 1 .java file – P2P\_Server.java

ii) To compile in Command Prompt, type the following:

javac P2P\_Server.java

OR

javac \*.java

3) P2P\_Client

i) There are 3 .java files:

a) P2P\_Client.java – contains the main method to start

b) DHT\_Record.java – data structure for storing DHT Server information.

c) Content\_Record.java – data structure for storing (content, IP) records.

ii) To compile in Command Prompt, type the following:

javac P2P\_Client.java DHT\_Record.java Content\_Record.java

OR

javac \*.java

**How to run**

1) The class files must be run in a specific order. Order of running the files:

i) DHT\_Server – to run, type the following in Command Prompt:

java DHT\_Server

(NOTE: All 4 DHT Servers must be run in specific order before running P2P Server and Client. See “DHT\_Server.jar specifics” section below.)

ii) P2P\_Server – to run, type the following in Command Prompt:

java P2P\_Server

iii) P2P\_Client – to run, type the following in Command Prompt:

java P2P\_Client

2) DHT\_Server.jar specifics:

i) Prior to running this, the file “DHT\_Server.txt” must be present in the same directory. “DHT\_Server.txt” contains the list of hostnames that correspond to the 4 DHT servers.

ii) DHT\_Server class files located in each host must be started in the exact order as listed in “DHT\_Server.txt” file.

iii) When it is started, the user is prompted to enter the number of the DHT\_Server that the current host corresponds to. Valid values are 1,2,3,4, where 1 corresponds to the main DHT Server that P2P Servers and Clients queries for the names of the other 3 DHT Servers.

3) P2P\_Server.jar specifics:

i) Prior to running this, the directory “sharedDir” must be created in the same directory as the jar application.

ii) When it is started, the user is prompted to enter the computer name of the main DHT Server.

4) P2P\_Client.jar specifics:

i) Prior to running this, the directory “sharedDir” must be created in the same directory as the jar application.

ii) When it is started, the user is prompted to enter the computer name of the main DHT Server.

iii) Next, the user is prompted to enter the name of the content file to download.

**Notes:**

1) The DHT\_Server application is stable and works as intended, establishing and maintaining TCP connections with other DHT\_Servers. It then waits for requests from P2P Servers and Clients.

2) The P2P\_Server application is stable and works as intended. It obtains the names of the other 3 DHT Servers from DHT Server #1. Then it sends Inform and Update message to DHT Servers that the content files’ filenames hashes to.

3) The P2P\_Client application is partly working. It can obtain the names of the other 3 DHT Servers from DHT Server #1. When a filename is entered by the user, it hashes the filename correctly to the corresponding DHT Server, and obtains the content record from the DHT Server. The P2P Client then contacts the P2P Server via the Server’s IP address stored in the content record. It sends the request message to the appropriate P2P Server. However, the file cannot be downloaded successfully from the P2P Server.