

# Programming Project 2

Napster-style peer-to-peer (P2P) file sharing system

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## Testing

### **RUNNING THE PROJECT :-**

- First Unzip the project Folder (Peer2Peer)
- Navigate inside the project folder
- Then Follow the 4 separate process to run server,peer1,peer2,peer3

## Server

- Use mvn install -file server.xml to build server.jar file
- Navigate to the target folder
- Use java -jar server.jar to Run the jar file and then the server will be up and running

```
~/Documents/Texas_Tech/AOS on [?]master! 0:01:33
$ cd Peer2Peer

~/Documents/Texas_Tech/AOS/Peer2Peer on [?]master! 0:01:36
$ mvn install -file server.xml
[INFO] Scanning for projects...
[INFO] mail -
[INFO] -----< Server:Server >-----
[INFO] Building Server 1
[INFO] -----[ jar ]-----
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ Server ---

~/Documents/Texas_Tech/AOS/Peer2Peer on [?]master! 0:01:51
$ cd target
$ java -jar server.jar

~/Documents/Texas_Tech/AOS/Peer2Peer/target on [?]master! 0:03:35
Waiting for peers to register files...
Waiting for peers to search files...
Type the action number as following:
1. To exit.
```

### Peer1 Building and Running:

- Use mvn install -file peer1.xml to build peer.jar file
- Navigate to the target folder
- Use java -jar server.jar to Run the jar file and then the peer1 request for user input

```
~/Documents/Texas_Tech/AOS/Peer2Peer/target on [?]master! 0:24:45
$ java -jar peer1.jar
Enter the Indexing Server IP:
localhost
```

- Type the server Ip address
- Then the First peer is running and waiting for the user's instruction

```
[4] + 21616 suspended mvn install -file peer1.xml

~/Documents/Texas_Tech/AOS/Peer2Peer on [?]master! 0:24:36
$ cd target

~/Documents/Texas_Tech/AOS/Peer2Peer/target on [?]master! 0:24:45
$ java -jar peer1.jar
Enter the Indexing Server IP:
localhost
Server is up..!

Waiting for peers to download files..

*****
Type the action number as following:
1. Search a file on the index server.
2. Register a file on the index server.
3. Register all files of the working directory.
4. Download file from a peer.
5. List my files of the current directory.
6. Calculate the performance of search requests.
7. To exit.
*****
```

## Peer2 Building and Running

- Use mvn install -file peer1.xml to build peer1.jar file
- Navigate to the target folder
- Use java -jar server.jar to Run the jar file and then the peer1 request for user input
- Type the server Ip address

```
~/Documents/Texas_Tech/AOS/Peer2Peer/target on [?]master! 0:54:58
$ java -jar peer2.jar
Enter the Indexing Server IP:
localhost
```

- Then the second peer is running and waiting for the user's instruction

```
~/Documents/Texas_Tech/AOS/Peer2Peer on [?]master! 0:53:21
$ cd target

~/Documents/Texas_Tech/AOS/Peer2Peer/target on [?]master! 0:53:24
$ java -jar peer2.jar
Enter the Indexing Server IP:
localhost
Server is up..!

Waiting for peers to download files..

*****
Type the action number as following:
1. Search a file on the index server.
2. Register a file on the index server.
3. Register all files of the working directory.
4. Download file from a peer.
5. List my files of the current directory.
6. Calculate the performance of search requests.
7. To exit.
*****
```

## Peer3 Building and Running

- Use mvn install -file peer1.xml to build peer3.jar file
- Navigate to the target folder
- Use java -jar server.jar to Run the jar file and then the peer1 request for user input
- Type the server Ip address

```
~/Documents/Texas_Tech/AOS/Peer2Peer/target on [?]master! 0:58:10
$ java -jar peer3.jar
Enter the Indexing Server IP:
localhost
```

- Then the Third peer is running and waiting for the user's instruction

```
~/Documents/Texas_Tech/AOS/Peer2Peer/target on [?]master! 0:58:10
$ java -jar peer3.jar
Enter the Indexing Server IP:
localhost
Server is up..!

Waiting for peers to download files..
```

```
*****
Type the action number as following:
1. Search a file on the index server.
2. Register a file on the index server.
3. Register all files of the working directory.
4. Download file from a peer.
5. List my files of the current directory.
6. Calculate the performance of search requests.
7. To exit.
*****
```

List all file

Type 5 to list all the files from the current directory

```
*****
Last login: Mon Apr  2 23:31:11 on ttys003

5
Getting the files
Peer 3 Files are in /Users/geofe/Documents/Texas_Tech/AOS/Peer2Peer/src/main/java/peer3/Files
No of files in peer 3 12
File: 10p.txt
File: 1f.txt
File: 1p.txt
File: 2p.txt
File: 3p.txt
File: 4p.txt
File: 5p.txt
File: 6p.txt
File: 7p.txt
File: 8p.txt
File: 9p.txt
*****
```

Register one file

Type 2 to register a file with the server from the current peer

```
*****
Last login: Mon Apr  2 23:31:11 on ttys003

2
Enter the file name along with the file extension
9p.txt

Connected to the server..

File '9p.txt' index has been added successfully on the server!!

*****
```

Register all files

Type 3 to register all the files from the current director with the server

```
*****
3
Peer 1 Files are in /Users/geofe/Documents/Texas_Tech/AOS/Peer2Peer/src/main/peer2/Files
No of files in peer 2 11
Tryin to register 10k.txt
1 Registering file 10k.txt
Registering file 10k.txt

Connected to the server..

File '10k.txt' index has been added successfully on the server!!

Tryin to register 4f.txt
1 Registering file 4f.txt
Registering file 4f.txt

Connected to the server..

File '4f.txt' index has been added successfully on the server!!

Tryin to register 9k.txt
1 Registering file 9k.txt
Registering file 9k.txt
```


Download file from a peer

- First search for the file ex:f8k.txt Enter 1 to search

```
Peer Number: localhost 60003 connected.
1
Enter the file name along with the file extension
f8k.txt
Type the action number as following:
1. To exit
Connected to the server..
Peer Number: localhost 60003 connected.

File:(f8k.txt) was found at peer\peers:

Peer ID: 60003, Peer IP: localhost
*****
Peer Number: localhost 60003 connected.
```



- Then type 4 to download the file

```

Peer number: localhost 60003 connected.
4
Enter the peer id, IP address, and file name using this format (pppp-IP-file.txt):
60003-localhost-f8k.txt
File name: f8k.txt
1. To exit.
Peer number: localhost 60003 connected
Connected to peer : localhost through port : 60003
File 60003-f7k.txt index created in the server
f8k.txt has been downloaded successfully
Type the action number as following:
1. To exit.
*****

```

## Performance

- Type 6 to measure the performance
- After that it will prompt you to enter the file name and then the number of request

```

*****
6
Enter the file name along with the file extension
9p.txt
Enter the required number of requests
1000

```

- Then you will get the result in 'msec'

```

Type the action number as following:
Peer ID: 60002, Peer IP: localhost
1000 search requests rate is 1287 ms.
*****

```

Finally To exit the peer 1, peer2, peer3 type 7

To exit the server enter 1

## Note:

- The system does not allow to download a file from the same peer that you are currently running. In other word, peer can not download from itself. If you did so, it will notify you by a message.
- To exit from the server, press '1' then 'enter'.



- Index Server located port '60000' and '60001'.
- Ports '60002', '60003', and '60004' are reserved for the peers.
- The mentioned ports must not be reserved on the system that you are going to run the system on.