

# **PEER TO PEER FILE SHARING SYSTEM**

## **Document Manual**

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## Description:

### Steps for running the codes:

1. Copy the codes from the Source Codes folder in the submitted report.
2. Open Command Prompt on your PC on your Windows environment. In case of Linux, open the Terminal window from the file location.
3. To execute the Indexing server of the Peer to Peer network, type the command "**java Servermain**" on the Terminal.
4. Open another Terminal window to execute the Peer code.
5. Type "**java Peermain**" to execute the peer code.
6. The following steps in the manual will show the complete execution of codes & commands.

## Procedure to execute the Peer to Peer Program:

- In order to start the indexing server, we need to execute the command “**java Servermain**” in the terminal of the file location. This will start the Indexing server to run and wait for the Peer files to connect to it.

```
Command Prompt - java Servermain

C:\Users\Subramanya Prasad\Desktop\Java codes\JAR\logs\New>java Servermain
The Indexing Server is now open, Waiting for peer connection!!!
```

- This will show a message “The Indexing Server is now Open, Waiting for the peer Connection”. It keeps listening onto a port 10000 until a connection is made to it on the same host.
- To execute the Peer, run “java Peermain” from the terminal of the file location. Peer will listen on port 20000 and it will request indexing server on port 10000. This will execute the Peer program and it will connect to the Server. It will show a message initially stating “The Peer Server is opened”.

```
Command Prompt - java Peermain

C:\Users\Subramanya Prasad\Desktop\Java codes\JAR\logs\New>java Peermain
The Peer Server is opened!!
Peer Client Started!!
Please enter the Indexing Server IP Address:
```

- The indexing server gets connected to the peer and shows a message that states the connection through a local host has been made and it is ready for the communication.

```
Command Prompt - java Servermain

C:\Users\Subramanya Prasad\Desktop\Java codes\JAR\logs\New>java Servermain
The Indexing Server is now open, Waiting for peer connection!!!
```

- This shows a list of options to choose for the peer to peer network. When the Register files option is chosen, it asks for which directory to share the files.

```

Command Prompt - java Peermain

Hi There!! below are the things you can do?
1. Please choose this option to Regesiter your file/files
2. Please choose this option to search your file/files
3. Please choose this option to UnRegesiter your file/files
4. Please choose this option to print the contents of your file/files
5. Exit

Please Enter Your Choice: 1
Enter the path of directory/file that you want to share with other peer:
D:2/

=====
Peer registered with given files successfully...!!!
=====
File Name : 123.txt File Location: D:\\2
File Name : a.txt File Location: D:\\2
File Name : c-3MB.txt File Location: D:\\2
File Name : d-4MB.txt File Location: D:\\2
File Name : e-5MB.txt File Location: D:\\2
File Name : f-6MB.txt File Location: D:\\2
File Name : g-7MB.txt File Location: D:\\2
File Name : h-8MB.txt File Location: D:\\2
File Name : i-9MB.txt File Location: D:\\2
File Name : j-10MB.txt File Location: D:\\2

Hi There!! below are the things you can do?
1. Please choose this option to Regesiter your file/files
2. Please choose this option to search your file/files
3. Please choose this option to UnRegesiter your file/files
4. Please choose this option to print the contents of your file/files

```

- The files are registered to the peers and it will make sure which files are to be shared and looked up. The users get an access to the indexing server and they will see the file lists
- These files which are present in the folder are being displayed to the user as they are registered. This helps the user to see the files from the directory. The user is left with the options of Unregistering, Searching, printing and downloading the respective contents that are available on the folder path.

- When the option 2 is chosen, the files can be selected as they are displayed along with a list of content. It asks for which file has to be chosen for the registering purpose, if a non-existing file name is written in the list, it will show the message “Sorry file not found on Peer”.

```

C:\> Command Prompt - java Peermain

Hi There!! below are the things you can do?
1. Please choose this option to Regesiter your file/files
2. Please choose this option to search your file/files
3. Please choose this option to UnRegesiter your file/files
4. Please choose this option to print the contents of your file/files
5. Exit

Please Enter Your Choice: 2
Please enter the file name you want search and download:
a.txt

File mentioned is found on following Peers

=====
Index Number  |Peer Id  |File      |Location
=====
1             |1        |a.txt     |D:\2

Please enter the Index number to download the file from respective peer:
1
File Downloading was Successfull!

Hi There!! below are the things you can do?
1. Please choose this option to Regesiter your file/files
2. Please choose this option to search your file/files
3. Please choose this option to UnRegesiter your file/files
4. Please choose this option to print the contents of your file/files
5. Exit

```

- This shows us the files that are present in the folder. As the displayed result occurs, there might be multiple files shown with the Index Numbers, Peer ID and the File Location. We will have to enter the index number to select a file when a file with the same name is present multiple times.
- The index value entered will lead to the File Download in our program and the file will be downloaded Successfully, stating a message “File Downloading was Successful!”. This file which is downloaded will be saved into a directory known as Downloads.

- The file for the lookup is entered after the choice 2 is selected, then the files with similar names are displayed on the terminal asking which file is to chosen among them. The user make a choice by writing the name of the file that is necessary for him. This way the Napster system user can search and download the Music files according to his requirements.

```

C:\> Command Prompt - java Peermain

Hi There!! below are the things you can do?
1. Please choose this option to Regesiter your file/files
2. Please choose this option to search your file/files
3. Please choose this option to UnRegesiter your file/files
4. Please choose this option to print the contents of your file/files
5. Exit

Please Enter Your Choice: 4
Enter only '.txt' file for Printing.

Please enter the file name to be searched and downloaded:
i-9MB.txt

Given File is found on following Peers:
=====
Index Number   |Peer Id      |File          |Location
=====
1              |1            |i-9MB.txt     |D:\\2

Enter the index number from above table to Print respective file Content:
1_

```

- Indexing server sends all the related files to the user and the peer prompts for selecting these files and downloading it. These files can be downloaded and then printed on the user (Client) terminal.

- In this case, a.txt is the file chosen and there is just one file in the D: 2/ under that name. This shows the Index, Peer Id, Filename and location values. We then get to select the index of the file. The selected file will then be downloaded and the message appears **"Welcome to Illinois"**.

```
Command Prompt - java Peermain
Welcome to Illinois
Welcome to Illinois
Welcome to Illinois
Welcome to Illinois
Welcome to Illinois
Welcome to Illinois
Welcome to Illinois
Welcom

=====

The File is printed

Hi There!! below are the things you can do?
1. Please choose this option to Regesiter your file/files
2. Please choose this option to search your file/files
3. Please choose this option to UnRegesiter your file/files
4. Please choose this option to print the contents of your file/files
5. Exit
```

- Once the file gets printed, there is a message stating " The File is printed" and then the options drop again to ask the user what his next requirements are.



- In order to lookup and print the file on the peer, the indexing server is contacted by choosing the value 4 on the switch statement that accounts for “Lookup and print the files”.
- When the filename is entered, it gets matched with the indexing server and the list will be available.

```

C:\> Command Prompt - java Peermain

Hi There!! below are the things you can do?
1. Please choose this option to Regesiter your file/files
2. Please choose this option to search your file/files
3. Please choose this option to UnRegesiter your file/files
4. Please choose this option to print the contents of your file/files
5. Exit

Please Enter Your Choice: 2
Please enter the file name you want search and download:
tennis.txt

Sorry!! the file not registered on any peer.

Hi There!! below are the things you can do?
1. Please choose this option to Regesiter your file/files
2. Please choose this option to search your file/files
3. Please choose this option to UnRegesiter your file/files
4. Please choose this option to print the contents of your file/files
5. Exit

Please Enter Your Choice:

```

- If a wrong filename is entered, it shows that the file could not be found on any peer by stating a message “Sorry file not found on any peer.”
- For unregistering the files, select the option 3 and thus all the files that are registered from location D:2/ will be unregistered from the Indexing Server and declares a message stating “The Unregistration of files is successful”. And if any files have to be registered again, please select the Register Files(Option 1).



Command Prompt - java Peermain

```
Hi There!! below are the things you can do?
1. Please choose this option to Regesiter your file/files
2. Please choose this option to search your file/files
3. Please choose this option to UnRegesiter your file/files
4. Please choose this option to print the contents of your file/files
5. Exit

Please Enter Your Choice: 3
WARNING: Please confirm you want to unregister all files shared?(Yes/No)
yes
Unregistration of files is successfull!!!
Please select options 1 if you want to share any files.

Hi There!! below are the things you can do?
1. Please choose this option to Regesiter your file/files
2. Please choose this option to search your file/files
3. Please choose this option to UnRegesiter your file/files
4. Please choose this option to print the contents of your file/files
5. Exit

Please Enter Your Choice: _
```

- All the steps are completed and finally when we want to exit the operation, selection of option 5 is necessary. This shows a message stating all the data from the indexing server will be terminated and "Please confirm you want to close the connection?". If yes is selected, all the connections will be terminated.

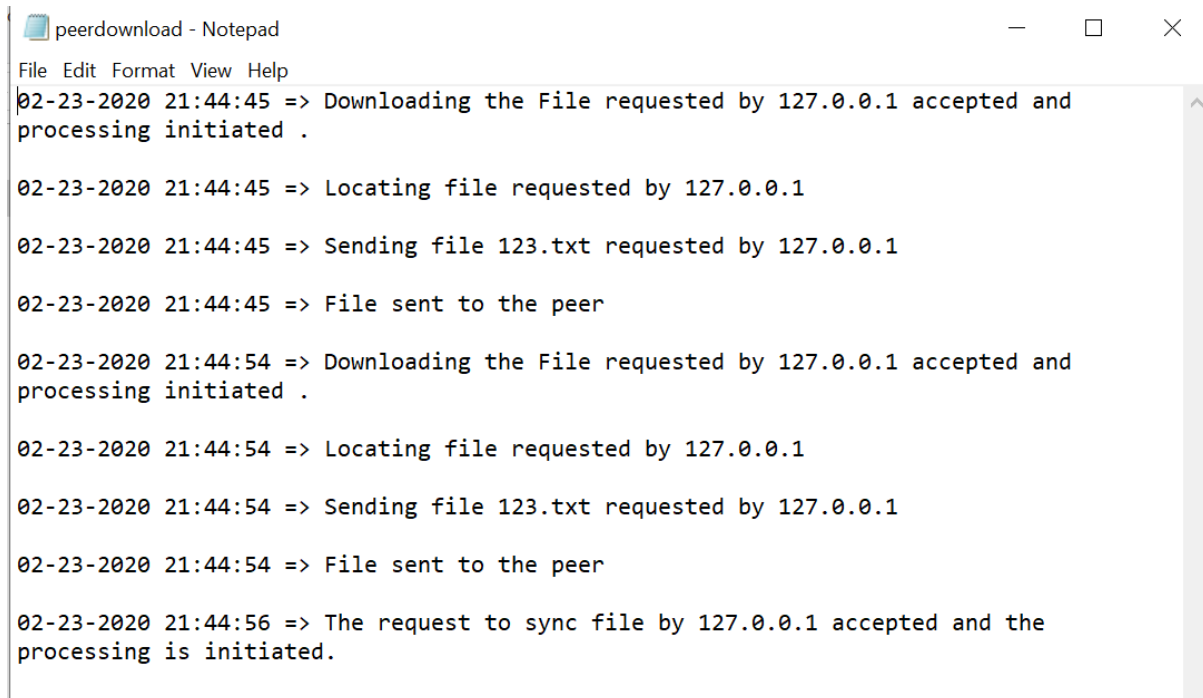
```
Hi There!! below are the things you can do?
1. Please choose this option to Regesiter your file/files
2. Please choose this option to search your file/files
3. Please choose this option to UnRegesiter your file/files
4. Please choose this option to print the contents of your file/files
5. Exit

Please Enter Your Choice: 5
Warning: This will remove all data from Indexing Server
Please confirm you want to close the connection?(Yes/No)
yes
Adios!!
```

- The Indexing server terminal shows a message stating that the connections with the Peer server has ended.

```
Successfully conected with the Peer whose IP is /127.0.0.1
Following are the files registered under Peer #2
Connection with IP: 127.0.0.1 terminated
```

## Logs:



```
peerdownload - Notepad
File Edit Format View Help
02-23-2020 21:44:45 => Downloading the File requested by 127.0.0.1 accepted and
processing initiated .

02-23-2020 21:44:45 => Locating file requested by 127.0.0.1

02-23-2020 21:44:45 => Sending file 123.txt requested by 127.0.0.1

02-23-2020 21:44:45 => File sent to the peer

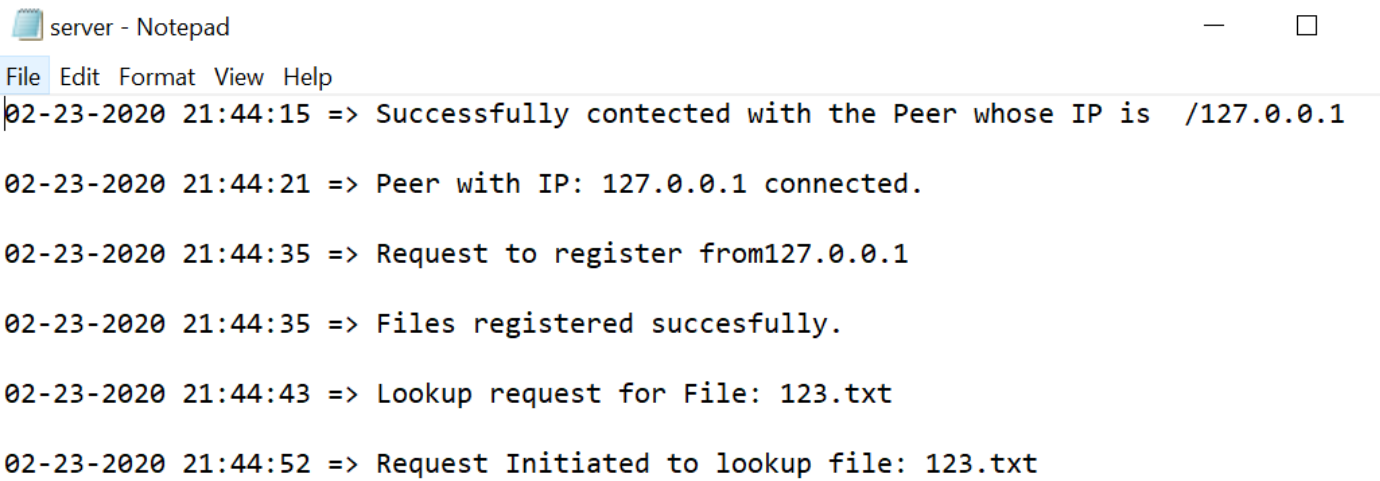
02-23-2020 21:44:54 => Downloading the File requested by 127.0.0.1 accepted and
processing initiated .

02-23-2020 21:44:54 => Locating file requested by 127.0.0.1

02-23-2020 21:44:54 => Sending file 123.txt requested by 127.0.0.1

02-23-2020 21:44:54 => File sent to the peer

02-23-2020 21:44:56 => The request to sync file by 127.0.0.1 accepted and the
processing is initiated.
```



```
server - Notepad
File Edit Format View Help
02-23-2020 21:44:15 => Successfully conected with the Peer whose IP is /127.0.0.1

02-23-2020 21:44:21 => Peer with IP: 127.0.0.1 connected.

02-23-2020 21:44:35 => Request to register from127.0.0.1

02-23-2020 21:44:35 => Files registered succesfully.

02-23-2020 21:44:43 => Lookup request for File: 123.txt

02-23-2020 21:44:52 => Request Initiated to lookup file: 123.txt
```

These Logs show the commands that were executed on terminal and the processes of Peer to Peer File transfer that has taken place during our execution.

## References:

1. <https://computer.howstuffworks.com/napster2.htm>
2. <https://en.wikipedia.org/wiki/Napster>
3. <https://www.britannica.com/topic/Napster>