Programming Assignment 2

MAINTAINING FILE CONSISTENCY IN YOUR GNUTELLA-STYLE P2P SYSTEM

CS550 – Advanced Operating System

March 26, 2018

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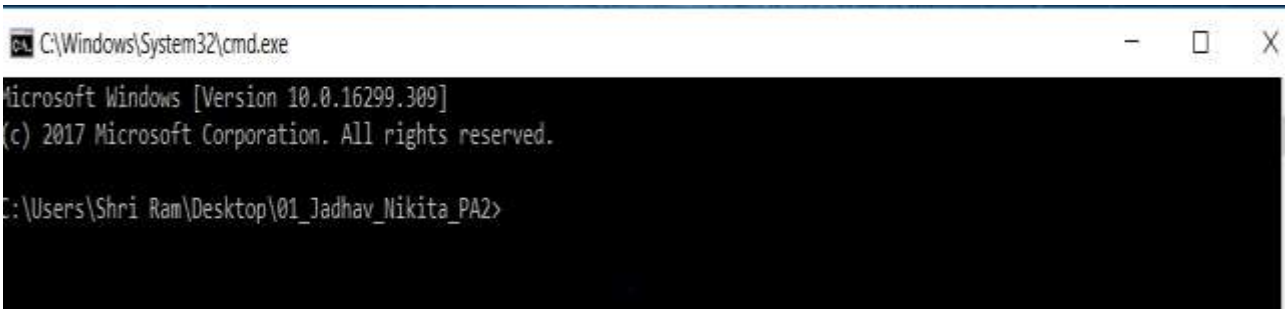
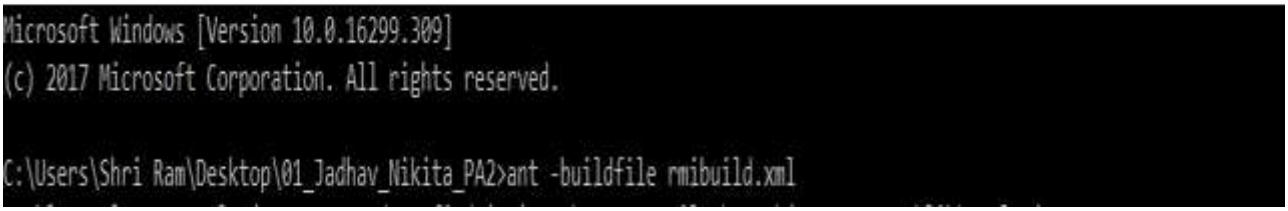
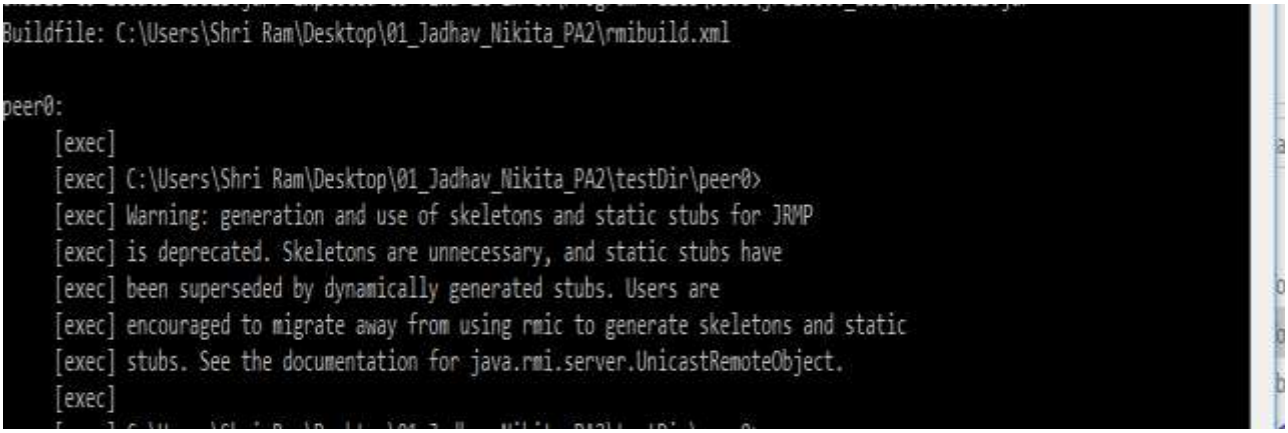


1) Open the cmd and navigate to the folder containing the xml file.



2) Run the ant command as ant -buildfile rmibuild.xml



3) We will get the rmi registry for 10 peers accompanied with rmic for peerserver & peerclient

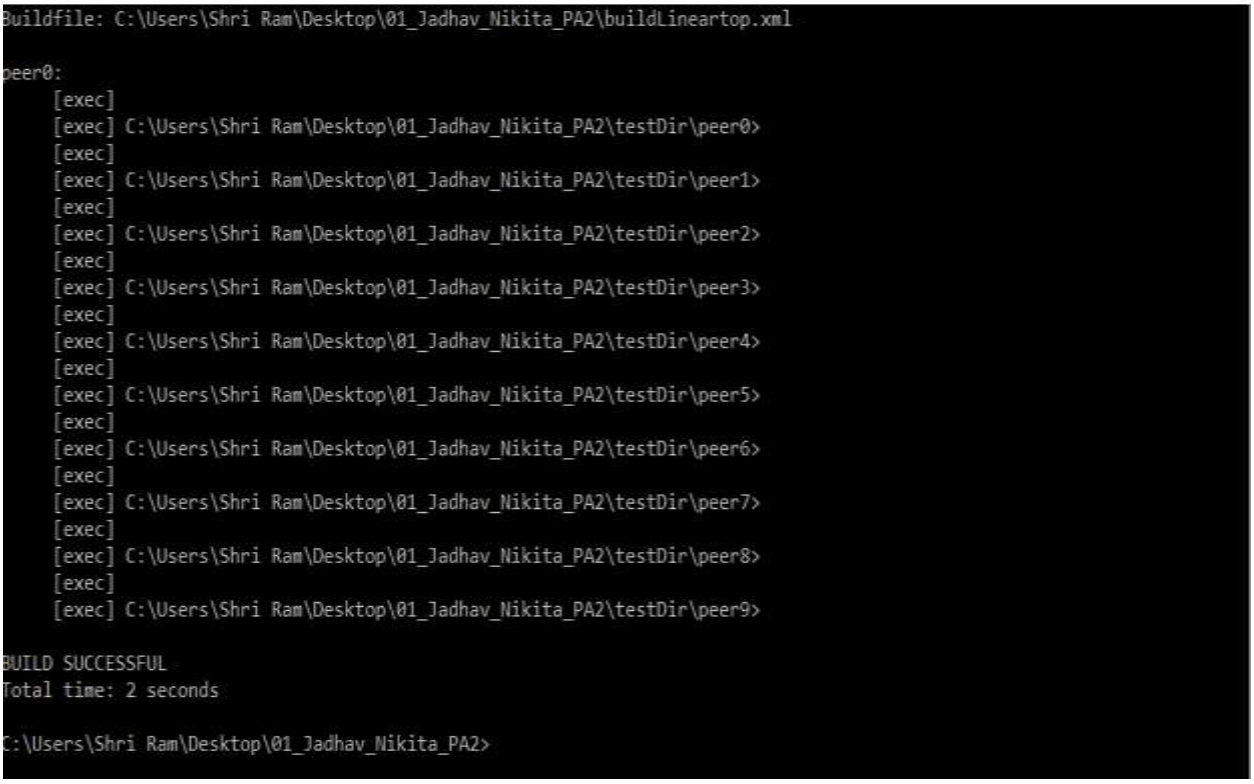
```
peer5:
     [exec]
     [exec] C:\Users\Shri Ram\Desktop\01_Jadhav_Nikita_PA2\testDir\peer5>
     [exec] Warning: generation and use of skeletons and static stubs for JRMP
     [exec] is deprecated. Skeletons are unnecessary, and static stubs have
     [exec] been superseded by dynamically generated stubs. Users are
     [exec] encouraged to migrate away from using rmic to generate skeletons and static
     [exec] stubs. See the documentation for java.rmi.server.UnicastRemoteObject.
     [exec]
     [exec] C:\Users\Shri Ram\Desktop\01_Jadhav_Nikita_PA2\testDir\peer5>
     [exec] Warning: generation and use of skeletons and static stubs for JRMP
     [exec] is deprecated. Skeletons are unnecessary, and static stubs have
     [exec] been superseded by dynamically generated stubs. Users are
     [exec] encouraged to migrate away from using rmic to generate skeletons and static
     [exec] stubs. See the documentation for java.rmi.server.UnicastRemoteObject.
     [exec]
     [exec] C:\Users\Shri Ram\Desktop\01_Jadhav_Nikita_PA2\testDir\peer5>

peer6:
     [exec]
     [exec] C:\Users\Shri Ram\Desktop\01_Jadhav_Nikita_PA2\testDir\peer6>
     [exec] Warning: generation and use of skeletons and static stubs for JRMP
     [exec] is deprecated. Skeletons are unnecessary, and static stubs have
```

```
peer9:
     [exec]
     [exec] C:\Users\Shri Ram\Desktop\01_Jadhav_Nikita_PA2\testDir\peer9>
     [exec] Warning: generation and use of skeletons and static stubs for JRMP
     [exec] is deprecated. Skeletons are unnecessary, and static stubs have
     [exec] been superseded by dynamically generated stubs. Users are
     [exec] encouraged to migrate away from using rmic to generate skeletons and static
     [exec] stubs. See the documentation for java.rmi.server.UnicastRemoteObject.
     [exec]
     [exec] C:\Users\Shri Ram\Desktop\01_Jadhav_Nikita_PA2\testDir\peer9>
     [exec] Warning: generation and use of skeletons and static stubs for JRMP
     [exec] is deprecated. Skeletons are unnecessary, and static stubs have
     [exec] been superseded by dynamically generated stubs. Users are
     [exec] encouraged to migrate away from using rmic to generate skeletons and static
     [exec] stubs. See the documentation for java.rmi.server.UnicastRemoteObject.
     [exec]
     [exec] C:\Users\Shri Ram\Desktop\01_Jadhav_Nikita_PA2\testDir\peer9>

BUILD SUCCESSFUL
Total time: 12 seconds

C:\Users\Shri Ram\Desktop\01_Jadhav_Nikita_PA2>
```

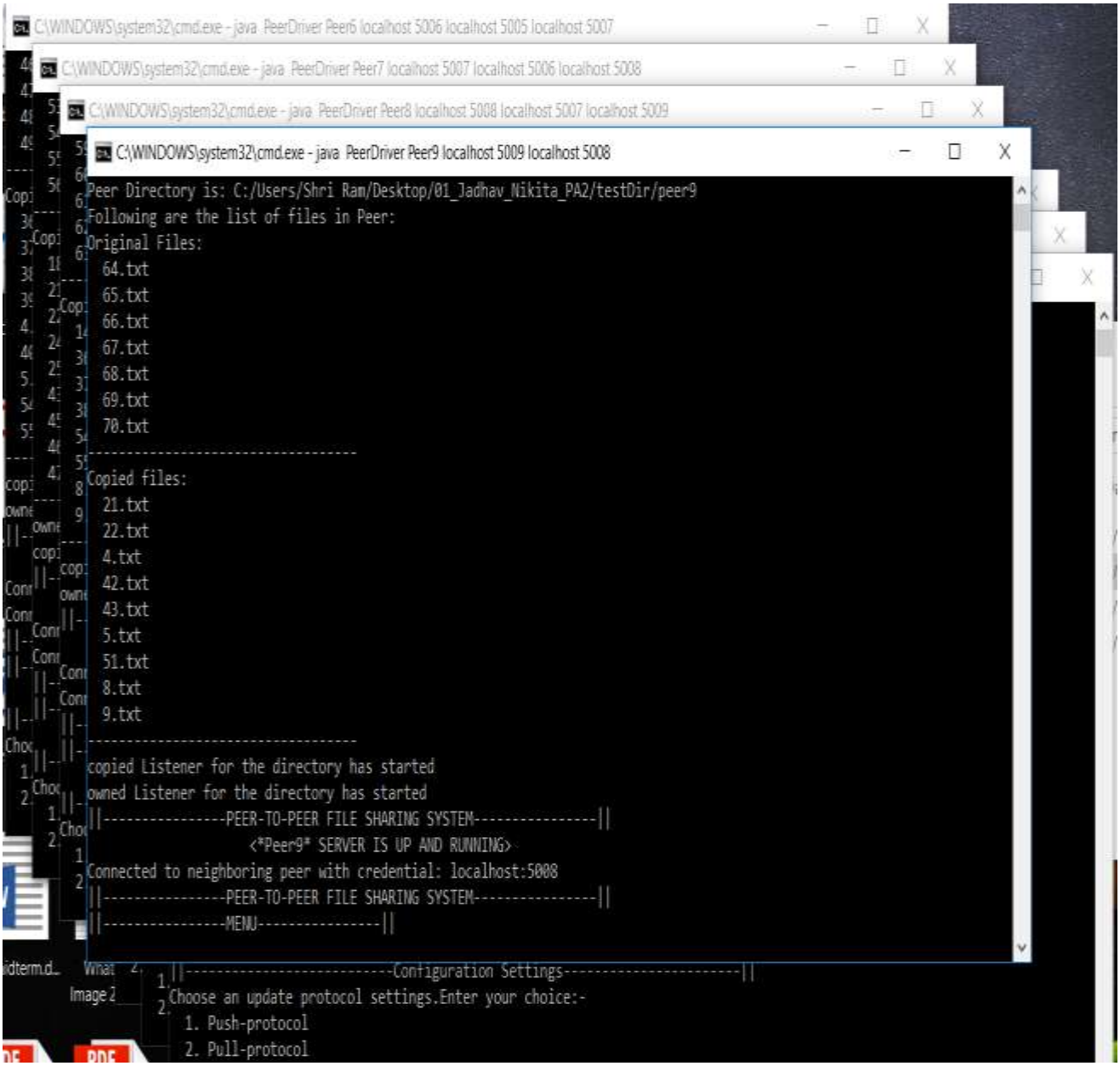
4) After this we would the ant file for linear topology

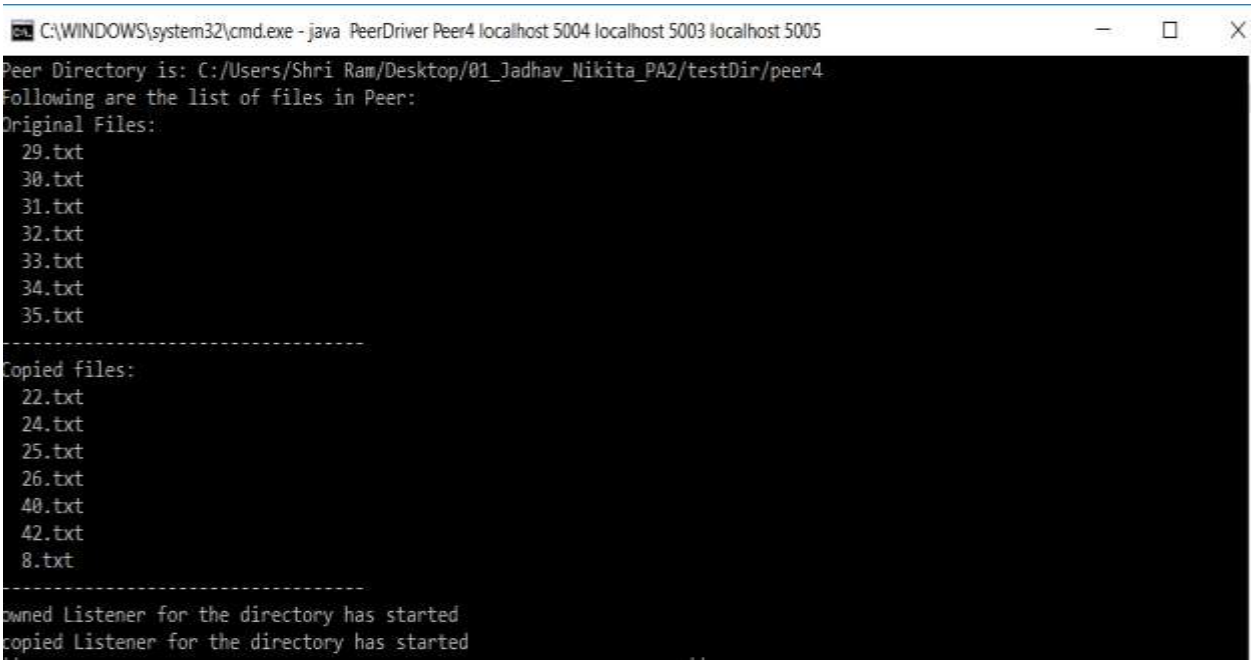
```
C:\Users\Shri Ram\Desktop\01_Jadhav_Nikita_PA2>ant -buildfile buildLineartop.xml
```

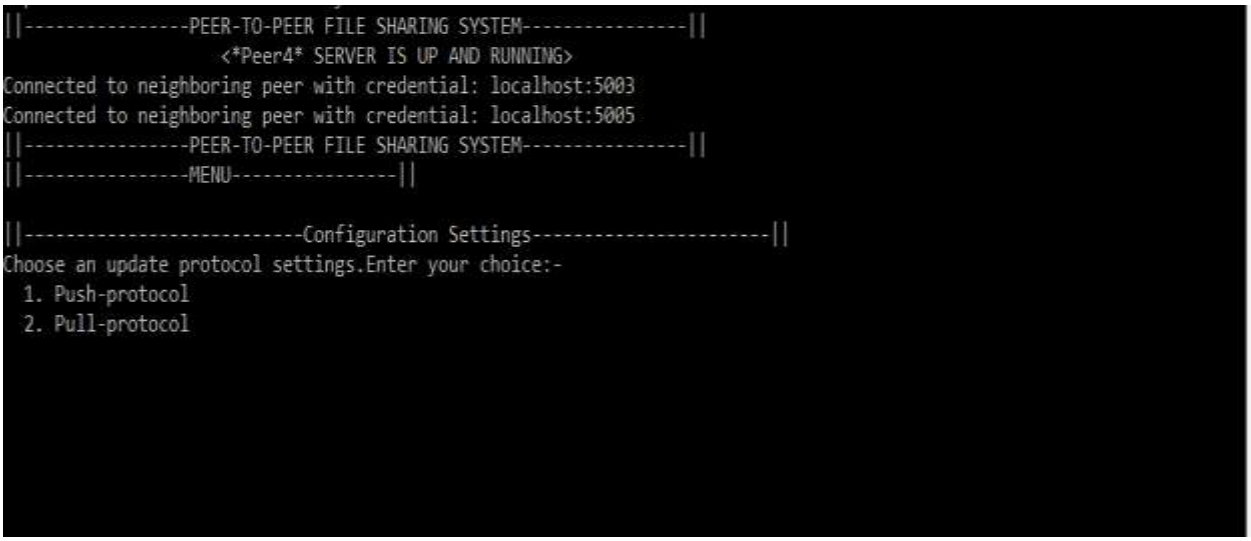
5) Run the ant command as ant -buildfile buildLineartop.xml



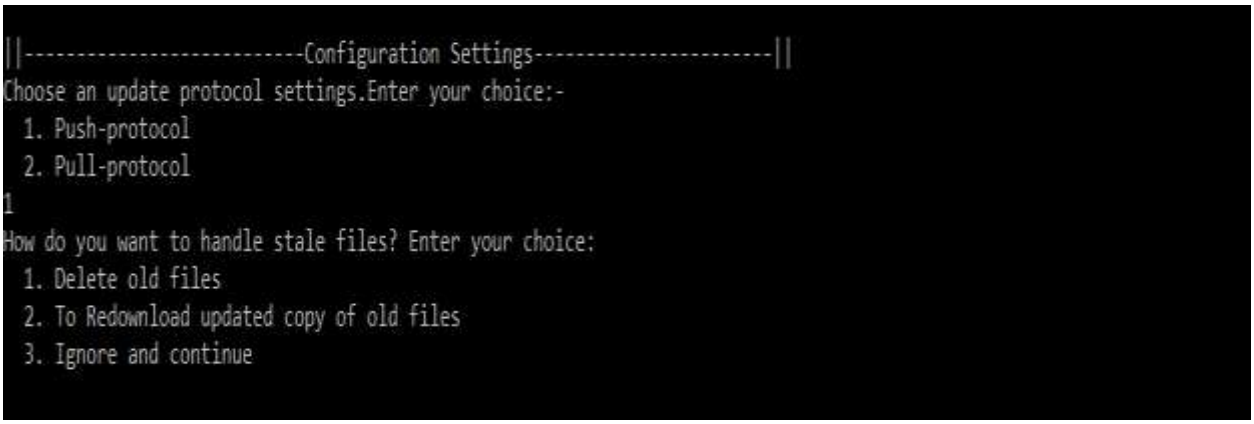
6) After executing the above command 10 cmds open up.


C:\WINDOWS\system32\cmd.exe - java PeerDriver Peer6 localhost 5006 localhost 5005 localhost 5007
C:\WINDOWS\system32\cmd.exe - java PeerDriver Peer7 localhost 5007 localhost 5006 localhost 5008
C:\WINDOWS\system32\cmd.exe - java PeerDriver Peer8 localhost 5008 localhost 5007 localhost 5009
C:\WINDOWS\system32\cmd.exe - java PeerDriver Peer9 localhost 5009 localhost 5008
Peer Directory is: C:/Users/Shri Ram/Desktop/01_Jadhav_Nikita_PA2/testDir/peer9
Following are the list of files in Peer:
Original Files:
64.txt
65.txt
66.txt
67.txt
68.txt
69.txt
70.txt
Copied files:
21.txt
22.txt
4.txt
42.txt
43.txt
5.txt
51.txt
8.txt
9.txt
copied Listener for the directory has started
owned Listener for the directory has started
||----------PEER-TO-PEER FILE SHARING SYSTEM----------||
<*Peer9* SERVER IS UP AND RUNNING>
Connected to neighboring peer with credential: localhost:5008
	----------PEER-TO-PEER FILE SHARING SYSTEM----------	
	----------MENU----------	
	----------Configuration Settings----------	
Choose an update protocol settings.Enter your choice:-
1. Push-protocol
2. Pull-protocol

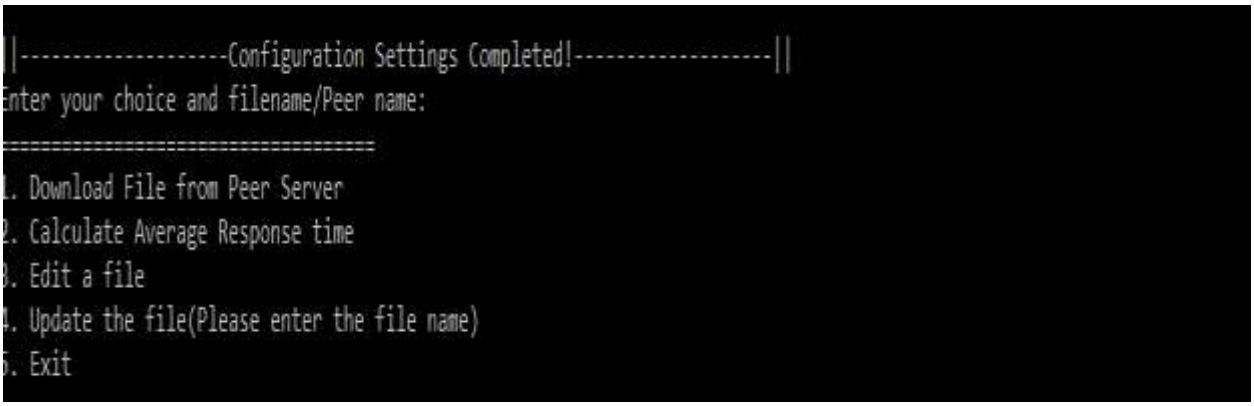




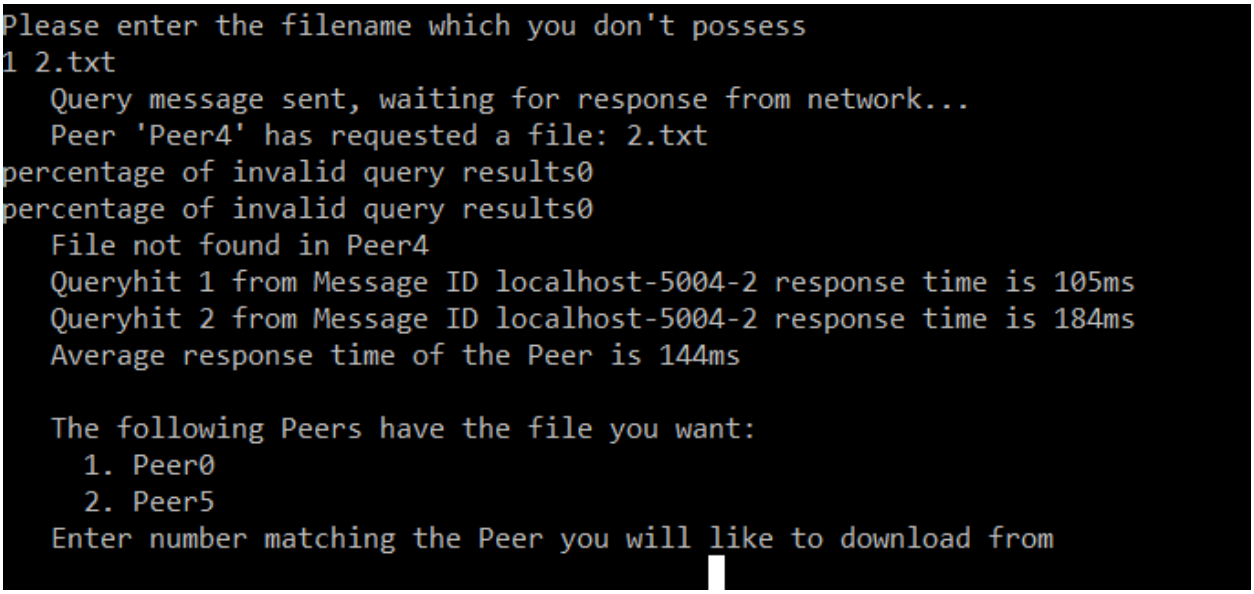
7) From the above we can see the Peername, ip & neighboring address, port number



8) Now we select the push protocol and then select ignore and continue



9) Now we go for option 1 i.e download file



10) Here we give the input as 1 2.txt

```
  The following Peers have the file you want:
    1. Peer0
    2. Peer5
  Enter number matching the Peer you will like to download from
2
  File downloading...
--------A file has been created/added to folder: copied
  File has been downloaded
```

11) If pressed 2 we select file to download from peer 5

C:\WINDOWS\system32\cmd.exe - java PeerDriver Peer5 localhost 5005 localhost 5004 localhost 5006

```
  Peer 'Peer4' has requested a file: 2.txt
  File found in Peer5
  File '2.txt' has been sent to Requesting Peer: Peer4
```

12) Peer 5 UI

```
||--------------------Configuration Settings Completed!-------------------||
Enter your choice and filename/Peer name:
====================================
1. Download File from Peer Server
2. Calculate Average Response time
3. Edit a file
4. Update the file(Please enter the file name)
5. Exit
3
You may only edit files you own.
Choose a file to edit by entering its corresponding number
  1. 64.txt
  2. 65.txt
  3. 66.txt
  4. 67.txt
  5. 68.txt
  6. 69.txt
  7. 70.txt
4
Type text to append to file of choice and press enter when done
123
--------A file has been modified in folder: owned
Modified file found
trigger push protocol
Push invalidation testing...
```

13) Now we go for editing the file by going with the option 3 and selecting the file to edit(67.txt)

```
Push invalidation testing...
checkpoint 1
checkpoint 2
Message Interrupt: File Invalidation; File '67.txt' is out of date
```

14) Message of this file exists in the copied directory!

```
||-------------------------Configuration Settings----------------------||
Choose an update protocol settings.Enter your choice:-
  1. Push-protocol
  2. Pull-protocol
1
How do you want to handle stale files? Enter your choice:
  1. Delete old files
  2. To Redownload updated copy of old files
  3. Ignore and continue
```

15) We select push and delete old files

```
||-------------------Configuration Settings Completed!------------------||
Enter your choice and filename/Peer name:
================================
1. Download File from Peer Server
2. Calculate Average Response time
3. Edit a file
4. Update the file(Please enter the file name)
5. Exit
```

```
||--------------------Configuration Settings Completed!-------------------||
Enter your choice and filename/Peer name:
====================================
1. Download File from Peer Server
2. Calculate Average Response time
3. Edit a file
4. Update the file(Please enter the file name)
5. Exit
3
You may only edit files you own.
Choose a file to edit by entering its corresponding number
  1. 10.txt
  2. 11.txt
  3. 12.txt
  4. 13.txt
  5. 14.txt
  6. 8.txt
  7. 9.txt
5
Type text to append to file of choice and press enter when done
Hey!!!
--------A file has been modified in folder: owned
Modified file found
trigger push protocol
Push invalidation testing...
Push invalidation testing...
checkpoint 1
```

```
Push invalidation testing...
checkpoint 1
checkpoint 2
Message Interrupt: File Invalidation; File '14.txt' is out of date
--------A file has been modified in folder: copied
--------A file has been deleted from folder: copied
A file: 14.txt removed from list
```

16) While performing the editing of the file

```
Set time-to-refresh (TTR) in minutes. Enter a positive integer
2
File update will refresh every 2 minutes
How do you want to handle stale files? Enter your choice:
  1. Delete old files
  2. To Redownload updated copy of old files
  3. Ignore and continue
```

17) Now we go for pull protocol

```
1 45.txt
   Query message sent, waiting for response from network...
   Peer 'Peer5' has requested a file: 45.txt
   File not found in Peer5
   Queryhit 1 from Message ID localhost-5005-2 response time is 61ms
   Queryhit 2 from Message ID localhost-5005-2 response time is 93ms
   Queryhit 3 from Message ID localhost-5005-2 response time is 112ms
   Average response time of the Peer is 88ms

   The following Peers have the file you want:
     1. Peer1
     2. Peer6
     3. Peer7
   Enter number matching the Peer you will like to download from
2
   File downloading...
--------A file has been created/added to folder: copied
   File has been downloaded
```