

# **Programming Project 4**

## **CS5352 Advanced Operating Systems Design**

### **Spring 2017**

#### **How to Run the Project**

Run the GnutellaNetwork.jar and pass 3 arguments

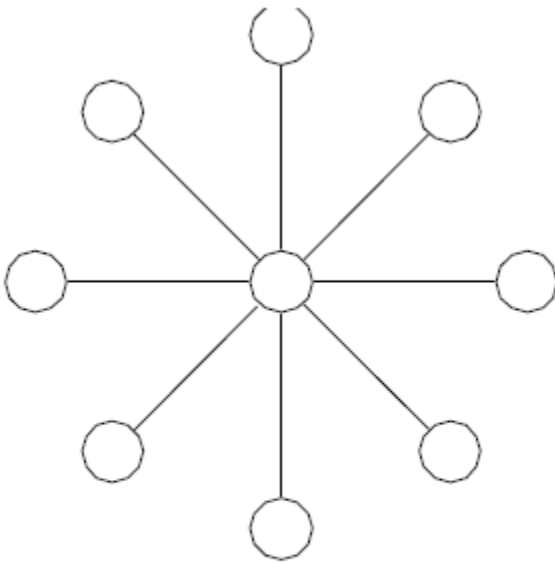
- Argument 1 Configuration file name
- Argument 2 Peer ID
- Argument 3 Peer's shared directory

For example, Java -jar GnutellaNetwork.jar meshtopology.txt 9 " Java -jar GnutellaNetwork.jar meshtopology.txt 1 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer1""

#### **To start another peer**

Open start another peer open command prompt and follow above instructions.

#### **Star Topology**



#### **Star Topology**

Start 9 peers with their shared directory

```
C:\Windows\System32\cmd.exe - Java -jar GnutellaNetwork.jar startopology.txt 9 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer4"
Microsoft Windows [Version 10.0.14393]
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D:\TTU\Spring 2016\AOS\Project 4\Code>Java -jar GnutellaNetwork.jar startopology.txt 9 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer4"
Peer 9 stated with shared directory D:\TTU\Spring 2016\AOS\Project 4\Code\Peer4
Selected the startopology.txt

Enter
  1 To download a file
  2 to Broadcast a invalied message
```

Select 1 for Search and download the file and enter the file name

```
C:\Windows\System32\cmd.exe - Java -jar GnutellaNetwork.jar startopology.txt 7 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer4"
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

D:\TTU\Spring 2016\AOS\Project 4\Code>Java -jar GnutellaNetwork.jar startopology.txt 7 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer4"
Peer 7 stated with shared directory D:\TTU\Spring 2016\AOS\Project 4\Code\Peer4
Selected the startopology.txt

Enter
  1 To download a file
  2 to Broadcast a invalied message
1
Enter the file to be downloaded
F37.txt
Peers containing the file are:
5
6
8
Enter the peer from where to download the file:
```

Select the peers from the list

```
C:\Windows\System32\cmd.exe - Java -jar GnutellaNetwork.jar startopology.txt 7 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer4"
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

D:\TTU\Spring 2016\AOS\Project 4\Code>Java -jar GnutellaNetwork.jar startopology.txt 7 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer4"
Peer 7 stated with shared directory D:\TTU\Spring 2016\AOS\Project 4\Code\Peer4
Selected the startopology.txt

Enter
    1 To download a file
    2 to Broadcast a invalied message

1
Enter the file to be downloaded
F37.txt
Peers containing the file are:
5
6
8
Enter the peer from where to download the file:
6
bytes transferred: 8588
F37.txt file has be downloaded to your directory D:\TTU\Spring 2016\AOS\Project 4\Code\Peer4
File: F37.txt downloaded from Peer 6 to Peer 7
```

File is downloaded to the peer's shared directory

Peers forwarding request to its neighbors

```
Select C:\Windows\System32\cmd.exe - Java -jar GnutellaNetwork.jar startopology.txt 1 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer1"
Microsoft Windows [Version 10.0.14393]
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D:\TTU\Spring 2016\AOS\Project 4\Code>Java -jar GnutellaNetwork.jar startopology.txt 1 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer1"
Peer 1 stated with shared directory D:\TTU\Spring 2016\AOS\Project 4\Code\Peer1
Selected the startopology.txt

Enter
    1 To download a file
    2 to Broadcast a invalied message

Connected to client at /127.0.0.1:58061 with peer 1
server thread for peer1
got request from 7
Found: F37.txt
Local Search Completed
sending to 2
sending to 3
sending to 4
sending to 5
sending to 6
sending to 8
```












Peer 7 shared directory before downloading file

his PC > Abyasa (D:) > TTU > Spring 2016 > AOS > Project 4 > Code > Peer4

Name	Date modified	Type	Size
 F26.txt	5/3/2017 10:49 PM	TXT File	4 KB
 F31.txt	3/29/2017 11:17 PM	TXT File	2 KB
 F32.txt	3/29/2017 11:18 PM	TXT File	2 KB
 F33.txt	5/3/2017 11:11 PM	TXT File	4 KB
 F34.txt	3/29/2017 11:17 PM	TXT File	2 KB
 F35.txt	3/29/2017 11:18 PM	TXT File	4 KB
 F36.txt	3/29/2017 11:18 PM	TXT File	4 KB
 F38.txt	3/29/2017 11:20 PM	TXT File	14 KB
 F39.txt	3/29/2017 11:21 PM	TXT File	6 KB
 F40.txt	3/29/2017 11:21 PM	TXT File	6 KB

Peer 7 shared directory after downloading file

is PC > Abyasa (D:) > TTU > Spring 2016 > AOS > Project 4 > Code > Peer4

Name	Date modified	Type	Size
 F26.txt	5/3/2017 10:49 PM	TXT File	4 KB
 F31.txt	3/29/2017 11:17 PM	TXT File	2 KB
 F32.txt	3/29/2017 11:18 PM	TXT File	2 KB
 F33.txt	5/3/2017 11:11 PM	TXT File	4 KB
 F34.txt	3/29/2017 11:17 PM	TXT File	2 KB
 F35.txt	3/29/2017 11:18 PM	TXT File	4 KB
 F36.txt	3/29/2017 11:18 PM	TXT File	4 KB
 F37.txt	5/4/2017 9:56 PM	TXT File	9 KB
 F38.txt	3/29/2017 11:20 PM	TXT File	14 KB
 F39.txt	3/29/2017 11:21 PM	TXT File	6 KB
 F40.txt	3/29/2017 11:21 PM	TXT File	6 KB

**PUSH the file modification message.**

```
C:\Windows\System32\cmd.exe - Java -jar GnutellaNetwork.jar startopology.txt 4 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer2"
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

D:\TTU\Spring 2016\AOS\Project 4\Code>Java -jar GnutellaNetwork.jar startopology.txt 4 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer2"
Peer 4 stated with shared directory D:\TTU\Spring 2016\AOS\Project 4\Code\Peer2
Selected the startopology.txt

Enter
    1 To download a file
    2 to Broadcast a invalied message
```

Select option 2 and enter the file name

```
C:\Windows\System32\cmd.exe - Java -jar GnutellaNetwork.jar startopology.txt 4 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer2"
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

D:\TTU\Spring 2016\AOS\Project 4\Code>Java -jar GnutellaNetwork.jar startopology.txt 4 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer2"
Peer 4 stated with shared directory D:\TTU\Spring 2016\AOS\Project 4\Code\Peer2
Selected the startopology.txt

Enter
    1 To download a file
    2 to Broadcast a invalied message
2
Enter the file name you want to Broadcast as Invalid file
F25.txt
File Modification Message Broadcasted to
Peer 3
```

Only peer 3 has the given file

```
C:\Windows\System32\cmd.exe - Java -jar GnutellaNetwork.jar startopology.txt 4 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer2"
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

D:\TTU\Spring 2016\AOS\Project 4\Code>Java -jar GnutellaNetwork.jar startopology.txt 4 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer2"
Peer 4 stated with shared directory D:\TTU\Spring 2016\AOS\Project 4\Code\Peer2
Selected the startopology.txt

Enter
    1 To download a file
    2 to Broadcast a invalied message

2
Enter the file name you want to Broadcast as Invalided file
F25.txt
File Modification Message Broadcasted to
Peer 3
```

Peer 3 received the Invalidation message

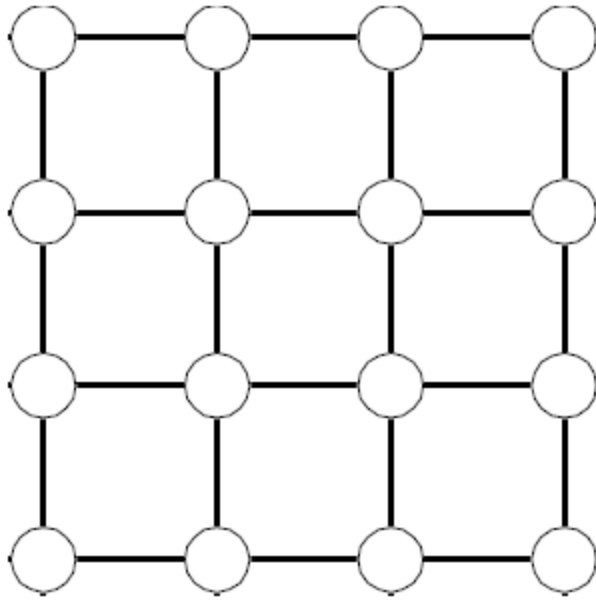
```
C:\Windows\System32\cmd.exe - Java -jar GnutellaNetwork.jar startopology.txt 3 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer2"
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

D:\TTU\Spring 2016\AOS\Project 4\Code>Java -jar GnutellaNetwork.jar startopology.txt 3 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer2"
Peer 3 stated with shared directory D:\TTU\Spring 2016\AOS\Project 4\Code\Peer2
Selected the startopology.txt

Enter
    1 To download a file
    2 to Broadcast a invalied message

Connected to client at /127.0.0.1:58108 with peer 3
server thread for peer3
got request from 1
Found: F25.txt
Local Search Completed
Invalided File F25.txt Modified by server...
```

## 2D Mesh Topology



## 2D-mesh Topology

Start 16 peers with their shared directory

```
C:\Windows\System32\cmd.exe - Java -jar GnutellaNetwork.jar meshtopology.txt 16 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer4"
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

D:\TTU\Spring 2016\AOS\Project 4\Code>Java -jar GnutellaNetwork.jar meshtopology.txt 16 "D:\TTU\Spring 2016\AOS\Project
4\Code\Peer4"
Peer 16 stated with shared directory D:\TTU\Spring 2016\AOS\Project 4\Code\Peer4
Selected the meshtopology.txt

Enter
  1 To download a file
  2 to Broadcast a invalied message
```

```
C:\Windows\System32\cmd.exe - Java -jar GnutellaNetwork.jar meshtopology.txt 16 "D:\TTU\Spring 2016\AOS\Project 4\Code\Peer4"
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

D:\TTU\Spring 2016\AOS\Project 4\Code>Java -jar GnutellaNetwork.jar meshtopology.txt 16 "D:\TTU\Spring 2016\AOS\Project
4\Code\Peer4"
Peer 16 stated with shared directory D:\TTU\Spring 2016\AOS\Project 4\Code\Peer4
Selected the meshtopology.txt

    Enter
    1 To download a file
    2 to Broadcast a invalied message

1
Enter the file to be downloaded
F28.txt
Peers containing the file are:
12
4
3
13
Enter the peer from where to download the file:
13
bytes transferred: 13730
F28.txt file has be downloaded to your directory D:\TTU\Spring 2016\AOS\Project 4\Code\Peer4
File: F28.txt downloaded from Peer 13 to Peer 16
```