Output of P2P Replica Management

1. **Config Properties**

```
TTR=120000
# Peer details
peerid.1.ip=localhost
peerid.1.port=7001
peerid.2.ip=localhost
peerid.2.port=7002
peerid.3.ip=localhost
peerid.3.port=7003
peerid.4.ip=localhost
peerid.4.port=7004
peerid.5.ip=localhost
peerid.5.port=7005
peerid.6.ip=localhost
peerid.6.port=7006
peerid.7.ip=localhost
peerid.7.port=7007
peerid.8.ip=localhost
peerid.8.port=7008
peerid.9.ip=localhost
peerid.9.port=7009

peerid.1.Master=//home//TTU//mkotapat//Test//Master//peer1
peerid.1.Replica=//home//TTU//mkotapat//Test//Replica//Peer1
peerid.2.Master=//home//TTU//mkotapat//Test//Master//peer2
peerid.2.Replica=//home//TTU//mkotapat//Test//Replica//Peer2
peerid.3.Master=//home//TTU//mkotapat//Test//Master//peer3
peerid.3.Replica=//home//TTU//mkotapat//Test//Replica//Peer3
```

```
28  peerid.4.Master=//home//TTU//mkotapat//Test//Master//peer4
29  peerid.4.Replica=//home//TTU//mkotapat//Test//Replica//Peer4
30  peerid.5.Master=//home//TTU//mkotapat//Test//Master//peer5
31  peerid.5.Replica=//home//TTU//mkotapat//Test//Replica//Peer5
32  peerid.6.Master=//home//TTU//mkotapat//Test//Master//peer6
33  peerid.6.Replica=//home//TTU//mkotapat//Test//Replica//Peer6
34  peerid.7.Master=//home//TTU//mkotapat//Test//Master//peer7
35  peerid.7.Replica=//home//TTU//mkotapat//Test//Replica//Peer7
36  peerid.8.Master=//home//TTU//mkotapat//Test//Master//peer8
37  peerid.8.Replica=//home//TTU//mkotapat//Test//Replica//Peer8
38  peerid.9.Master=//home//TTU//mkotapat//Test//Master//peer9
39  peerid.9.Replica=//home//TTU//mkotapat//Test//Replica//Peer9
40  # Neighbor details
41  #3X3 Mesh
42  peerid.1.neighbors=peerid.2,peerid.4
43  peerid.2.neighbors=peerid.1,peerid.3,peerid.5
44  peerid.3.neighbors=peerid.2,peerid.6
45  peerid.4.neighbors=peerid.1,peerid.5,peerid.7
46  peerid.5.neighbors=peerid.2,peerid.4,peerid.6,peerid.8
47  peerid.6.neighbors=peerid.3,peerid.5,peerid.9
48  peerid.7.neighbors=peerid.4,peerid.8
49  peerid.8.neighbors=peerid.5,peerid.7,peerid.9
50  peerid.9.neighbors=peerid.6,peerid.8
51
```

ii)   Run 9 peers in separate instances as shown below

```
mkotapat@leaflock: ~
mkotapat@leaflock:~$ java p2pReplica/Peer
Enter the peerid
1
Session for peer id: 1 started...
Peer 1 acting as server on 127.0.0.1:5001
************ Main Menu ***************
1. Push(Send Master copy to all replicas)
2. Pull(Update replica on TTR expriy or version change)
3. Modify File(Without PUSH - To test PULL)
4. Modify File(With PUSH
**********************************
Select your choice
```

```
mkotapat@leaflock: ~

   -The location you are trying to connect from (on- or off-cam
   -Specific error messages

Last login: Wed May  4 03:40:59 2016 from 75-111-243-183.lbbkcm
enlink.net
mkotapat@leaflock:~$ 2
-bash: 2: command not found
mkotapat@leaflock:~$ java gnutellaP2P/Peer
Enter the peerid
2
Enter the port
^Cmkotapat@leaflock:~$ java p2pReplica/Peer
Enter the peerid
2
Session for peer id: 2 started...
Peer 2 acting as server on 127.0.0.1:5002
************ Main Menu ***************
1. Push(Send Master copy to all replicas)
2. Pull(Update replica on TTR expriy or version change)
3. Modify File(Without PUSH - To test PULL)
4. Modify File(With PUSH
***********************************
Select your choice
```

```
mkotapat@leaflock: ~

If you have any problems, please email support.coe@ttu.edu
and include any relevant information such as:

   -Name of operating system and version that you are using
   -Particular software programs and versions you are using
   -The full DNS name of the machine you are accessing
   -The location you are trying to connect from (on- or off-
   -Specific error messages

Last login: Wed May  4 03:26:10 2016 from 75-111-243-183.lbb
enlink.net
mkotapat@leaflock:~$ java p2pReplica/Peer
Enter the peerid
3
Session for peer id: 3 started...
Peer 3 acting as server on 127.0.0.1:5003
************ Main Menu ***************
1. Push(Send Master copy to all replicas)
2. Pull(Update replica on TTR expriy or version change)
3. Modify File(Without PUSH - To test PULL)
4. Modify File(With PUSH
************************************
Select your choice
```

```
mkotapat@leaflock: ~

If you have any problems, please email support.coe@ttu.edu
and include any relevant information such as:

    -Name of operating system and version that you are using
    -Particular software programs and versions you are using
    -The full DNS name of the machine you are accessing
    -The location you are trying to connect from (on- or off-camp
    -Specific error messages

Last login: Wed May  4 03:41:04 2016 from 75-111-243-183.lbbkcmt
enlink.net
mkotapat@leaflock:~$ java p2pReplica/Peer
Enter the peerid
4
Session for peer id: 4 started...
Peer 4 acting as server on 127.0.0.1:5004
************ Main Menu ***************
1. Push(Send Master copy to all replicas)
2. Pull(Update replica on TTR expriy or version change)
3. Modify File(Without PUSH - To test PULL)
4. Modify File(With PUSH
*************************************
Select your choice
```

```
mkotapat@leaflock: ~

If you have any problems, please email support.coe@ttu.edu
and include any relevant information such as:

   -Name of operating system and version that you are using
   -Particular software programs and versions you are using
   -The full DNS name of the machine you are accessing
   -The location you are trying to connect from (on- or off-ca
   -Specific error messages

Last login: Wed May  4 03:41:16 2016 from 75-111-243-183.lbbkc
enlink.net
mkotapat@leaflock:~$ java p2pReplica/Peer
Enter the peerid
5
Session for peer id: 5 started...
Peer 5 acting as server on 127.0.0.1:5005
************ Main Menu ***************
1. Push(Send Master copy to all replicas)
2. Pull(Update replica on TTR expriy or version change)
3. Modify File(Without PUSH - To test PULL)
4. Modify File(With PUSH
************************************
Select your choice
```

mkotapat@leaflock: ~

```
If you have any problems, please email support.coe@ttu.edu
and include any relevant information such as:

   -Name of operating system and version that you are using
   -Particular software programs and versions you are using
   -The full DNS name of the machine you are accessing
   -The location you are trying to connect from (on- or off
   -Specific error messages

Last login: Wed May  4 03:41:26 2016 from 75-111-243-183.lb
enlink.net
mkotapat@leaflock:~$ java p2pReplica/Peer
Enter the peerid
6
Session for peer id: 6 started...
Peer 6 acting as server on 127.0.0.1:5006
************ Main Menu ***************
1. Push(Send Master copy to all replicas)
2. Pull(Update replica on TTR expriy or version change)
3. Modify File(Without PUSH - To test PULL)
4. Modify File(With PUSH
*************************************
Select your choice
```
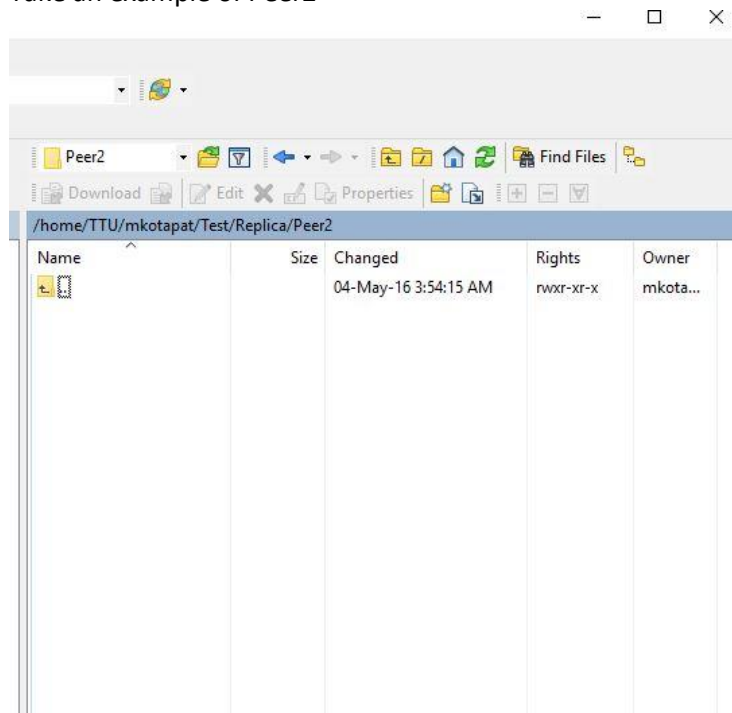
mkotapat@leaflock: ~

```
If you have any problems, please email support.coe@ttu.edu
and include any relevant information such as:

   -Name of operating system and version that you are using
   -Particular software programs and versions you are using
   -The full DNS name of the machine you are accessing
   -The location you are trying to connect from (on- or off
   -Specific error messages

Last login: Wed May  4 03:42:03 2016 from 75-111-243-183.lb
enlink.net
mkotapat@leaflock:~$ java p2pReplica/Peer
Enter the peerid
7
Session for peer id: 7 started...
Peer 7 acting as server on 127.0.0.1:5007
************ Main Menu ***************
1. Push(Send Master copy to all replicas)
2. Pull(Update replica on TTR expriy or version change)
3. Modify File(Without PUSH - To test PULL)
4. Modify File(With PUSH
*************************************
Select your choice
```

mkotapat@leaflock: ~

```
If you have any problems, please email support.coe@ttu.edu
and include any relevant information such as:

   -Name of operating system and version that you are using
   -Particular software programs and versions you are using
   -The full DNS name of the machine you are accessing
   -The location you are trying to connect from (on- or off-campus
   -Specific error messages

Last login: Wed May  4 03:46:01 2016 from 75-111-243-183.lbbkcmtk0
enlink.net
mkotapat@leaflock:~$ java p2pReplica/Peer
Enter the peerid
8
Session for peer id: 8 started...
Peer 8 acting as server on 127.0.0.1:5008
************ Main Menu ***************
1. Push(Send Master copy to all replicas)
2. Pull(Update replica on TTR expriy or version change)
3. Modify File(Without PUSH - To test PULL)
4. Modify File(With PUSH
*************************************
Select your choice
```

```
mkotapat@leaflock: ~

If you have any problems, please email support.coe@ttu.edu
and include any relevant information such as:

   -Name of operating system and version that you are using
   -Particular software programs and versions you are using
   -The full DNS name of the machine you are accessing
   -The location you are trying to connect from (on- or off-campus)
   -Specific error messages

Last login: Wed May  4 03:46:15 2016 from 75-111-243-183.lbbkcmtk04
enlink.net
mkotapat@leaflock:~$ java p2pReplica/Peer
Enter the peerid
9
Session for peer id: 9 started...
Peer 9 acting as server on 127.0.0.1:5009
************* Main Menu ****************
1. Push(Send Master copy to all replicas)
2. Pull(Update replica on TTR expriy or version change)
3. Modify File(Without PUSH - To test PULL)
4. Modify File(With PUSH
************************************
Select your choice
```
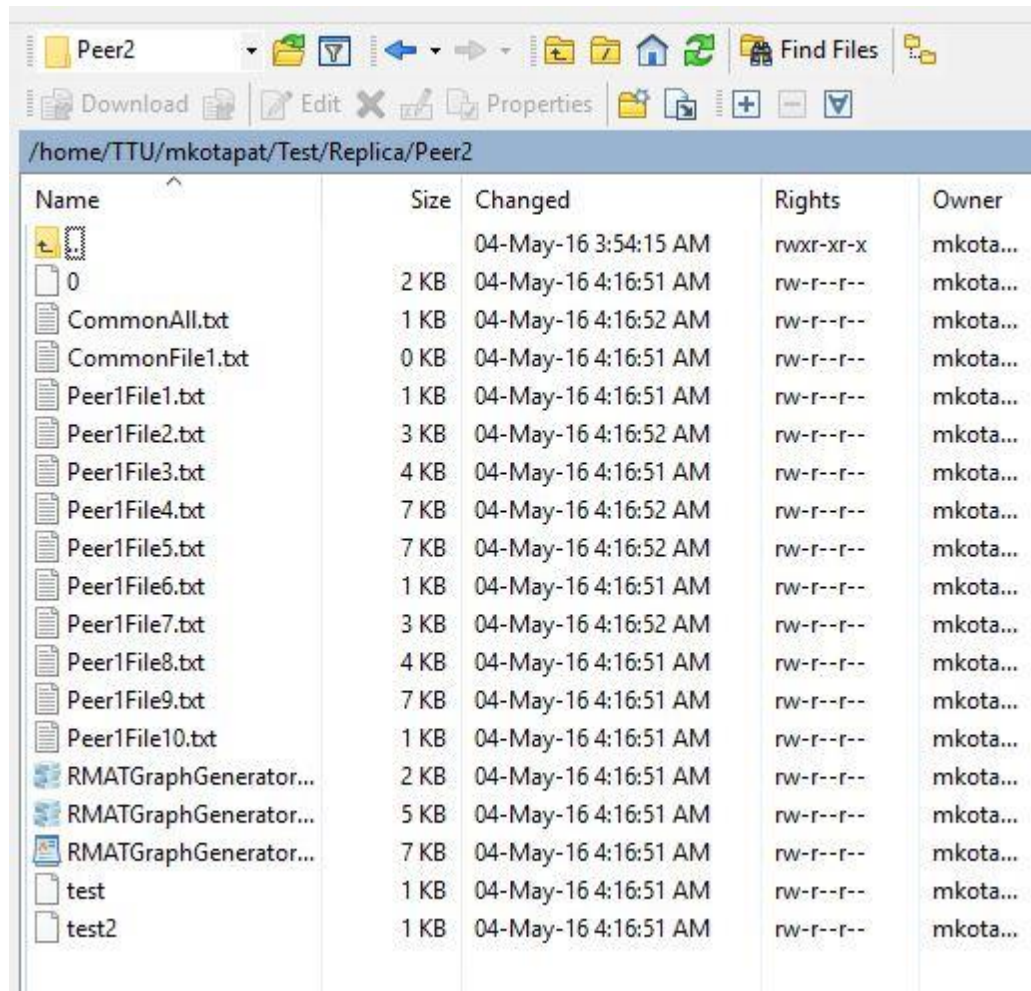
iii)   Perform PUSH in peer 1, so that all Replica peers will be updated
       Take an example of Peer2

Push from Peer1 Master


```
Select your choice
^Cmkotapat@leaflock:~$ clear
mkotapat@leaflock:~$ java p2pReplica/Peer
Enter the peerid
1
Session for peer id: 1 started...
Peer 1 acting as server on 127.0.0.1:5001
************ Main Menu ***************
1. Push(Send Master copy to all replicas)
2. Pull(Update replica on TTR expriy or version change)
3. Modify File(Without PUSH - To test PULL)
4. Modify File(With PUSH
**************************************
Select your choice
1
Message id for search: Peer1.Iteration1.Version1.Peer1File7.txt
Sending PUSH request to peerid.2 5002
Sending PUSH request to peerid.4 5004
Message id for search: Peer1.Iteration1.Version1.Peer1File8.txt
Sending PUSH request to peerid.2 5002
Sending PUSH request to peerid.4 5004
Message id for search: Peer1.Iteration1.Version1.CommonAll.txt
Sending PUSH request to peerid.2 5002
Sending PUSH request to peerid.4 5004
Message id for search: Peer1.Iteration1.Version1.test
Sending PUSH request to peerid.2 5002
Sending PUSH request to peerid.4 5004
Message id for search: Peer1.Iteration1.Version1.Peer1File9.txt
Sending PUSH request to peerid.2 5002
Sending PUSH request to peerid.4 5004
```

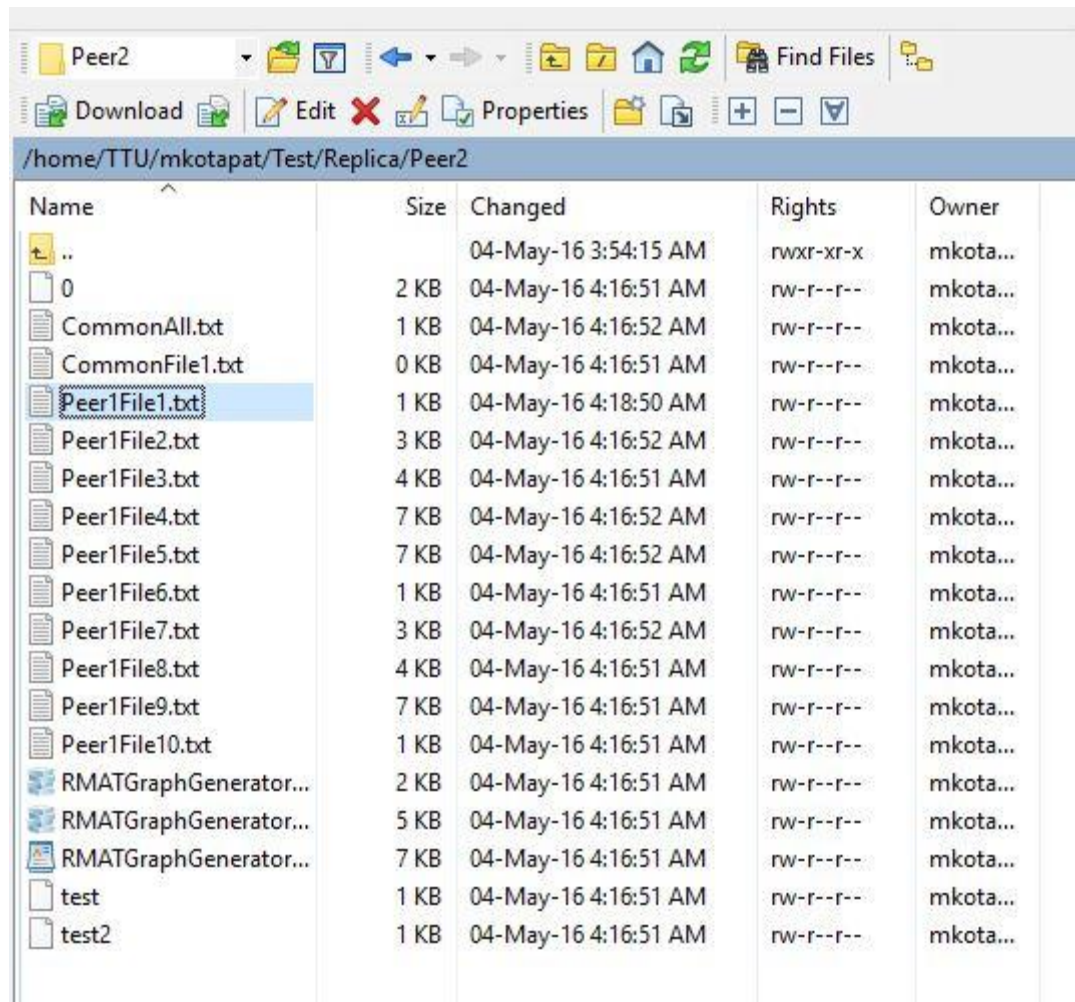Check Master copy of Peer1 in peer 2 replica

Name	Size	Changed	Rights	Owner
⬆		04-May-16 3:54:15 AM	rwxr-xr-x	mkota...
0	2 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
CommonAll.txt	1 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
CommonFile1.txt	0 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File1.txt	1 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File2.txt	3 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
Peer1File3.txt	4 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File4.txt	7 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
Peer1File5.txt	7 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
Peer1File6.txt	1 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File7.txt	3 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
Peer1File8.txt	4 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File9.txt	7 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File10.txt	1 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
RMATGraphGenerator...	2 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
RMATGraphGenerator...	5 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
RMATGraphGenerator...	7 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
test	1 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
test2	1 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...

iv)   File Modify and PUSH the copy

mkotapat@leaflock: ~

```
Message id for search: Peer1.Iteration1.Version1.Peer1File10.txt
Sending PUSH request to peerid.2 5002
Sending PUSH request to peerid.4 5004
Message id for search: Peer1.Iteration1.Version1.Peer1File5.txt
Sending PUSH request to peerid.2 5002
Sending PUSH request to peerid.4 5004
Message id for search: Peer1.Iteration1.Version1.RMATGraphGenerator.ja
Sending PUSH request to peerid.2 5002
Sending PUSH request to peerid.4 5004
************ Main Menu ***************
1. Push(Send Master copy to all replicas)
2. Pull(Update replica on TTR expriy or version change)
3. Modify File(Without PUSH - To test PULL)
4. Modify File(With PUSH
***************************************
Select your choice
4
Enter the file name that to trigger the modify function and PUSH
Peer1File1.txt
Message id for search: Peer1.Iteration2.Version2.Peer1File1.txt
Sending request to peerid.2 5002
Sending request to peerid.4 5004
************ Main Menu ***************
1. Push(Send Master copy to all replicas)
2. Pull(Update replica on TTR expriy or version change)
3. Modify File(Without PUSH - To test PULL)
4. Modify File(With PUSH
***************************************
Select your choice
```

Option 4 and change file Peer1File1.txt
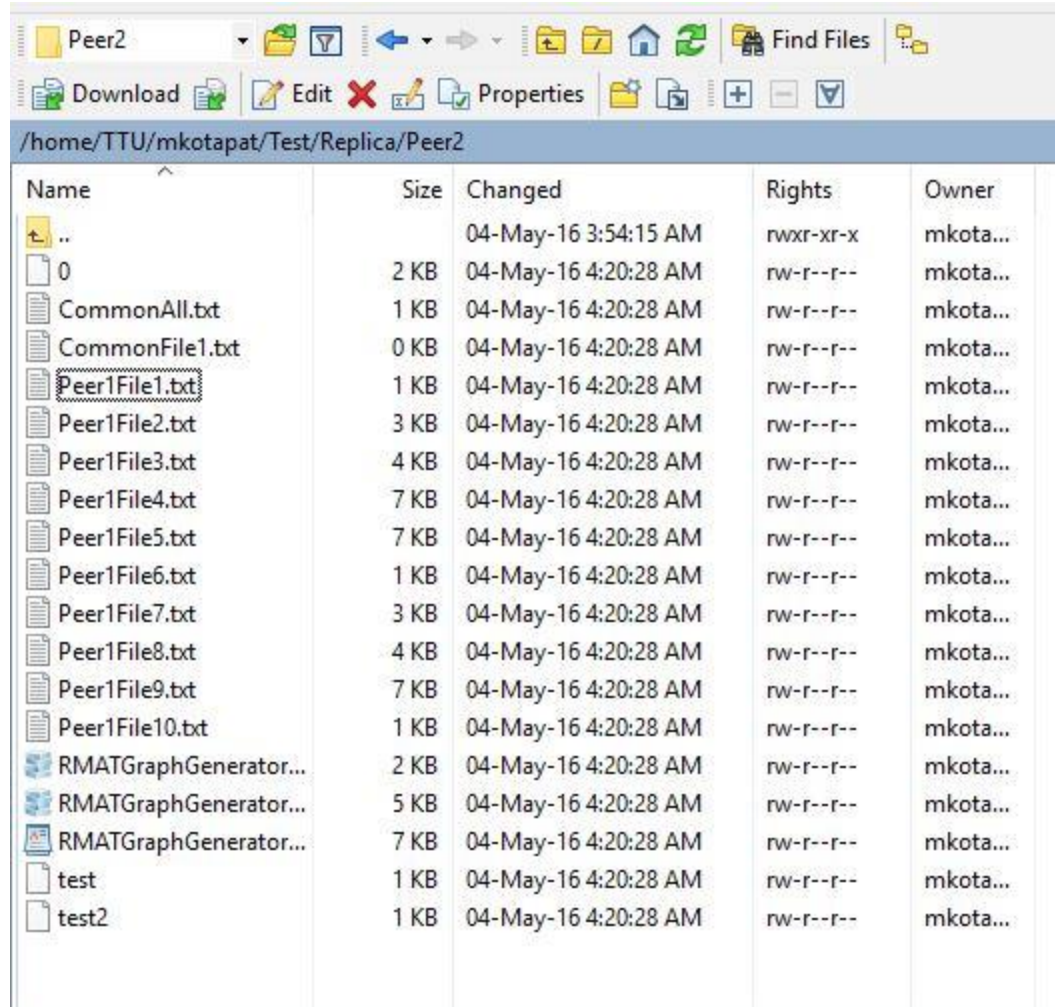
Name	Size	Changed	Rights	Owner
..		04-May-16 3:54:15 AM	rwxr-xr-x	mkota...
0	2 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
CommonAll.txt	1 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
CommonFile1.txt	0 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File1.txt	1 KB	04-May-16 4:18:50 AM	rw-r--r--	mkota...
Peer1File2.txt	3 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
Peer1File3.txt	4 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File4.txt	7 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
Peer1File5.txt	7 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
Peer1File6.txt	1 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File7.txt	3 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
Peer1File8.txt	4 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File9.txt	7 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File10.txt	1 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
RMATGraphGenerator...	2 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
RMATGraphGenerator...	5 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
RMATGraphGenerator...	7 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
test	1 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
test2	1 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...

Observe the timestamp of Peer1File1.txt file

v)   PULL after the Time expiry
        TTR is set as 120000 (2 minutes) , after 2 minutes do PULL from Peer 2

```
Peer1File1.txt  downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
2
"test2" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"RMATGraphGenerator.java" downloaded to path: //home//TTU//mkotapat//Test//Repli
ca//Peer2
"Peer1File5.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"Peer1File10.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer
2
"CommonFile1.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer
2
"Peer1File7.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"0" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"Peer1File3.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"RMATGraphGenerator.class" downloaded to path: //home//TTU//mkotapat//Test//Repl
ica//Peer2
"test" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"Peer1File2.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"Peer1File9.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"CommonAll.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"Peer1File8.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"Peer1File6.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"Peer1File4.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"Peer1File1.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"RMATGraphGenerator$Edge.class" downloaded to path: //home//TTU//mkotapat//Test/
/Replica//Peer2
*********** Main Menu ***************
1. Push(Send Master copy to all replicas)
2. Pull(Update replica on TTR expriy or version change)
3. Modify File(Without PUSH - To test PULL)
4. Modify File(With PUSH
*********************************
Select your choice
```

Name	Size	Changed	Rights	Owner
..		04-May-16 3:54:15 AM	rwxr-xr-x	mkota...
0	2 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
CommonAll.txt	1 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
CommonFile1.txt	0 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File1.txt	1 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File2.txt	3 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File3.txt	4 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File4.txt	7 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File5.txt	7 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File6.txt	1 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File7.txt	3 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File8.txt	4 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File9.txt	7 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File10.txt	1 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
RMATGraphGenerator...	2 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
RMATGraphGenerator...	5 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
RMATGraphGenerator...	7 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
test	1 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
test2	1 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...

Observe the timestamps