User Manual

We have provided the programs for both the server and client with the test cases written in a user readable way and to minimize the overhead of manually compiling the code, following script is been provided at the "./PeerToPeerFileSharingSystem/Scripts" directory

- run.sh

The script takes care of compiling all the dependencies of the project and then runs the main class of the project as specified in the detailed design documentation, which further invokes the testing scenarios that check the performance of our application.

After running the above script, user will be prompted with the following message:

- Enter number of peers you want to test for between 3 to 10

Here the user needs to select the number of peers he/she wants to create based on which peers and their directory folders will be created at the "./shared" path and will get registered with the central indexing server. We also have implemented automated file creating functions that create files of multiple sizes for the directories of peers out of which a few are replicated, to test the server functionality and give users the ability to choose the peer from which it wants to download the file.

After this, the application prompts the user to select the test for server/client/peerserver., as mentioned below:

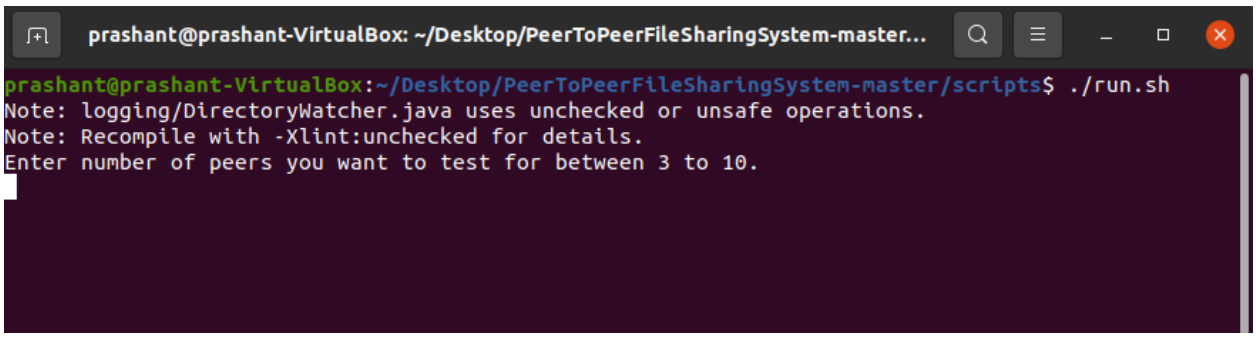
- Enter what kind of test you want to run?
  1. Central Indexing Server methods verification.
  2. Peer Server test.
  3. Client sequential calls test.
  4. Client parallel calls test.

The functionality of each of the above tests has been mentioned in the detailed design documentation.

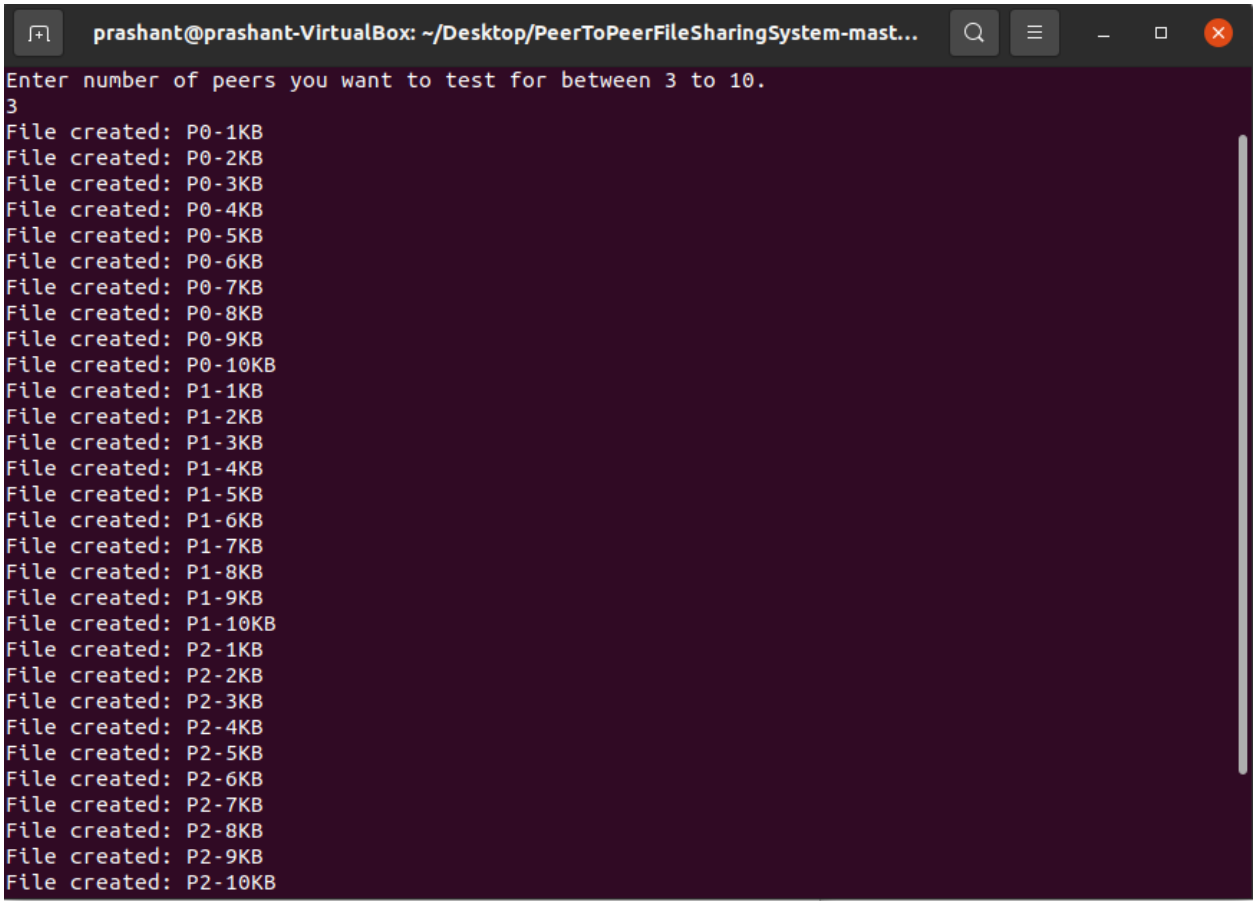
All of the above tests are built using Junit testing framework and are automated to reduce user interaction and cover the whole breadth of test scenarios for each of the method implemented in our application, however for test case 2, user is prompted to select the file which they want to download and also to select the peer server from which they want to download the file in case many peers contain that file. The user finally provides his inputs and the output is provided at the CLI.

Example of above commands

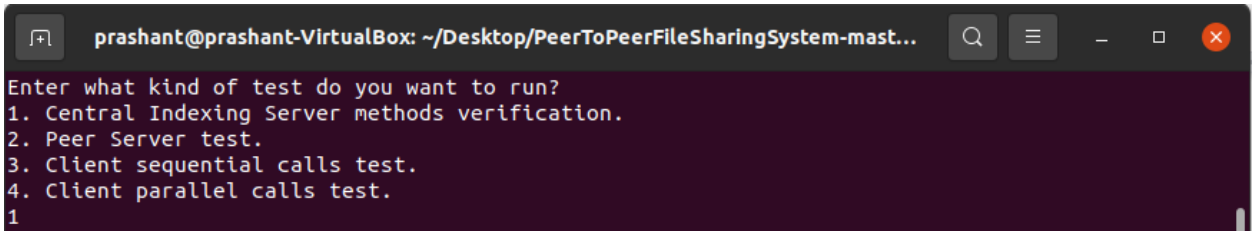
1. Executing Run.sh



2. Choosing 3 peers



3. Selecting the test we want to run



4. Entering the file name we want to retrieve

```
Enter the fileName you want to download
P0-6KB
Retrieving file P0-6KB from peer rmi://localhost:3000/peerServer-175'. You'll be notified when it finishes.
Directory logging thread is getting started for peer id: rmi://localhost:3000/peerServer-3500
File retrieval started from peerId: rmi://localhost:3000/peerServer-175 | Time:1645417359781
com.models.Peer rmi://localhost:3000/peerServer-175 is asking to get the file info of P0-6KB
Creating a New File | Directory: ./shared/1 | FileName : P0-6KB
```

5. Directory watcher update at the client server

```
Change detected in the shared directory. | Shared Directory : ./shared/1
Reading the shared directory: ./shared/1
registry method invoked
File got register | FileName: P1-6KB
File got register | FileName: P0-6KB
File got register | FileName: P1-9KB
File got register | FileName: P1-1KB
File got register | FileName: P1-3KB
File got register | FileName: P1-8KB
File got register | FileName: P1-2KB
File got register | FileName: P1-7KB
File got register | FileName: P1-5KB
File got register | FileName: P1-4KB
File got register | FileName: P1-10KB
ENTRY_CREATE-P0-6KB
Change detected in the shared directory. | Shared Directory : ./shared/1
Reading the shared directory: ./shared/1
registry method invoked
File got register | FileName: P1-6KB
File got register | FileName: P0-6KB
File got register | FileName: P1-9KB
File got register | FileName: P1-1KB
File got register | FileName: P1-3KB
File got register | FileName: P1-8KB
File got register | FileName: P1-2KB
File got register | FileName: P1-7KB
File got register | FileName: P1-5KB
File got register | FileName: P1-4KB
File got register | FileName: P1-10KB
ENTRY_MODIFY-P0-6KB
File retrieval done from peerId: rmi://localhost:3000/peerServer-175 | Time:1645417359889
Success: File download has been completed. | FileName:P0-6KB
```