



1/29/2017

File Sharing System Design Doc-1.0

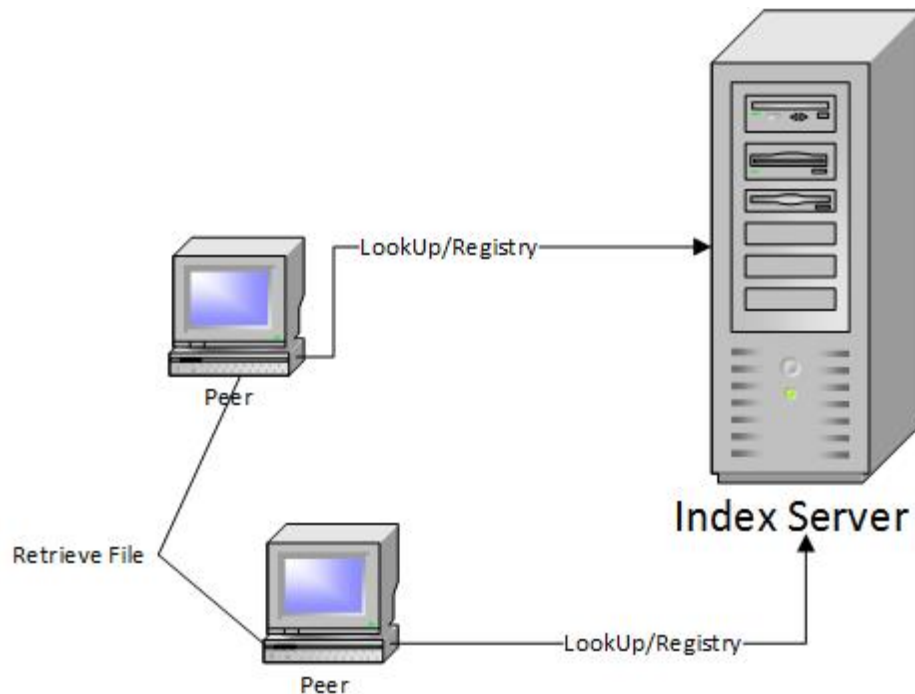
CS550AOS-Programming Assignment 1

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Introduction



High Level Diagram – File Sharing System

Requirement

Central indexing server.

This server indexes the contents of all of the peers that register with it. It also provides search facility to peers.

- *registry(peer id, file name, ...)* -- invoked by a peer to register all its files with the indexing server. The server then builds the index for the peer.
- *lookup(file name)* -- this procedure should search the index and return all the matching peers to the requestor.

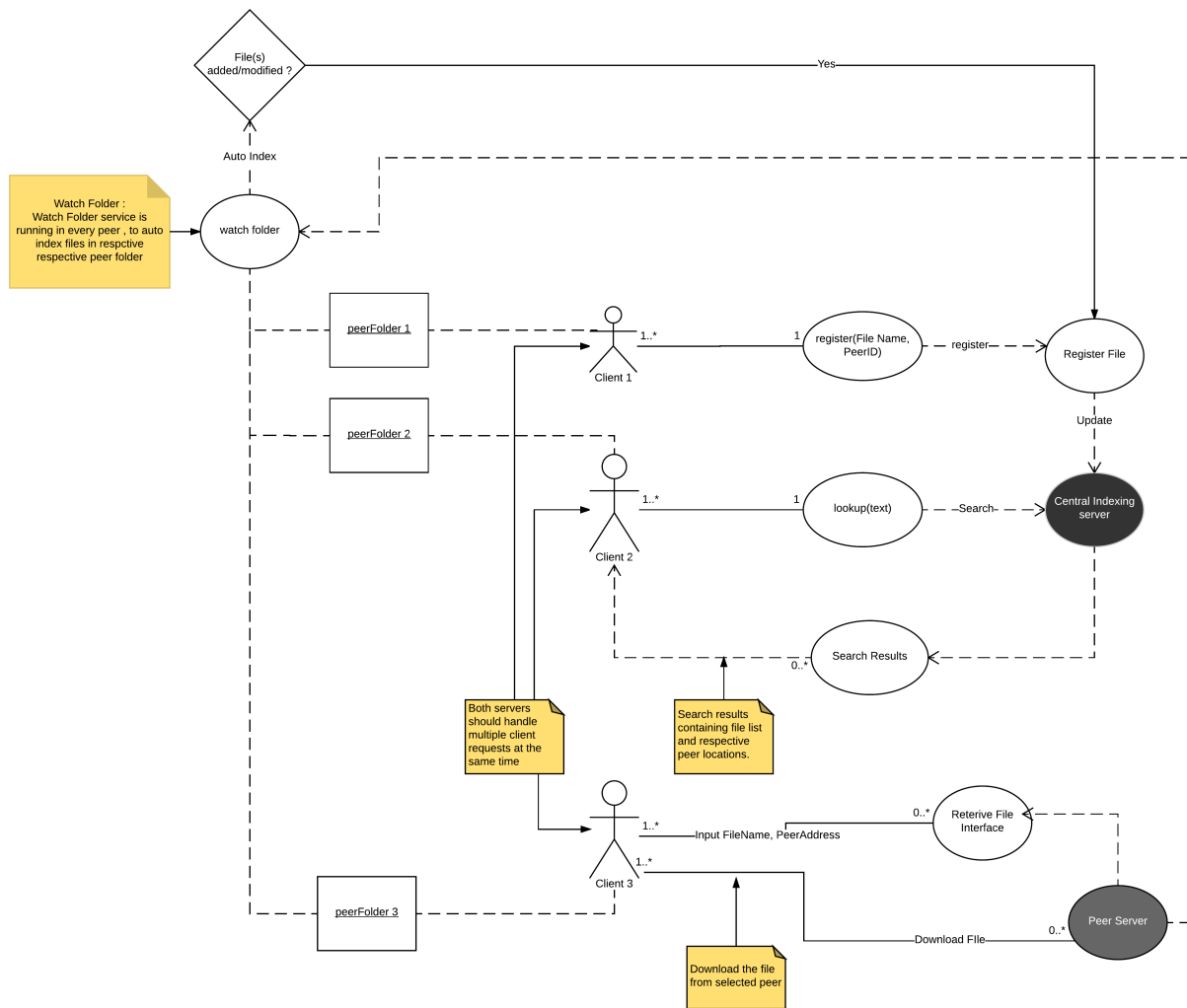
Peer.

A peer is both a client and a server. As a client, the user specifies a file name with the indexing server using "lookup". The indexing server returns a list of all other peers that hold the file. The user can pick one such peer and the client then connects to this peer and downloads the file. As a server, the peer waits for requests from other peers and sends the requested file when receiving a request. Minimally, the peer server should provide the following interface to the peer client:

- *retrieve(file name)* -- invoked by a peer to download a file from another peer.

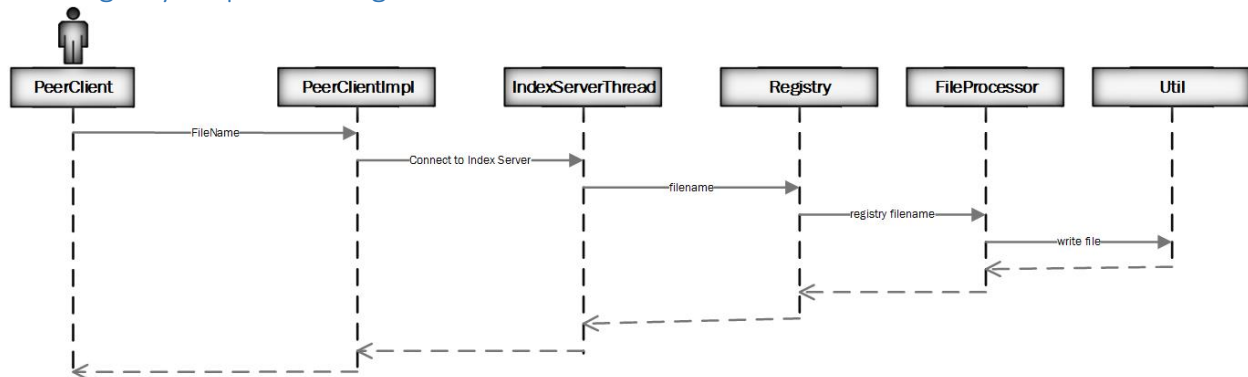
Over all Program Design

We have used the Java Sockets . The overall design overview is blow:

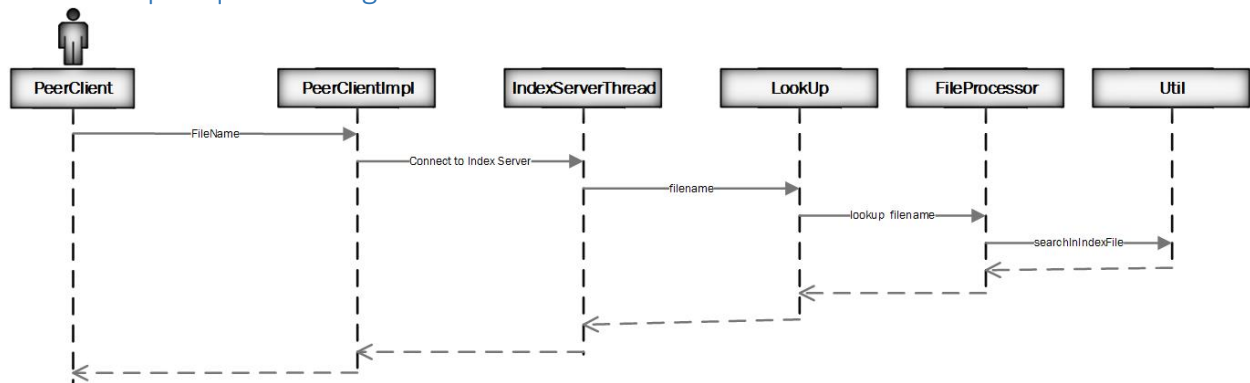


Simple UseCase : Peer to Peer File Sharing System

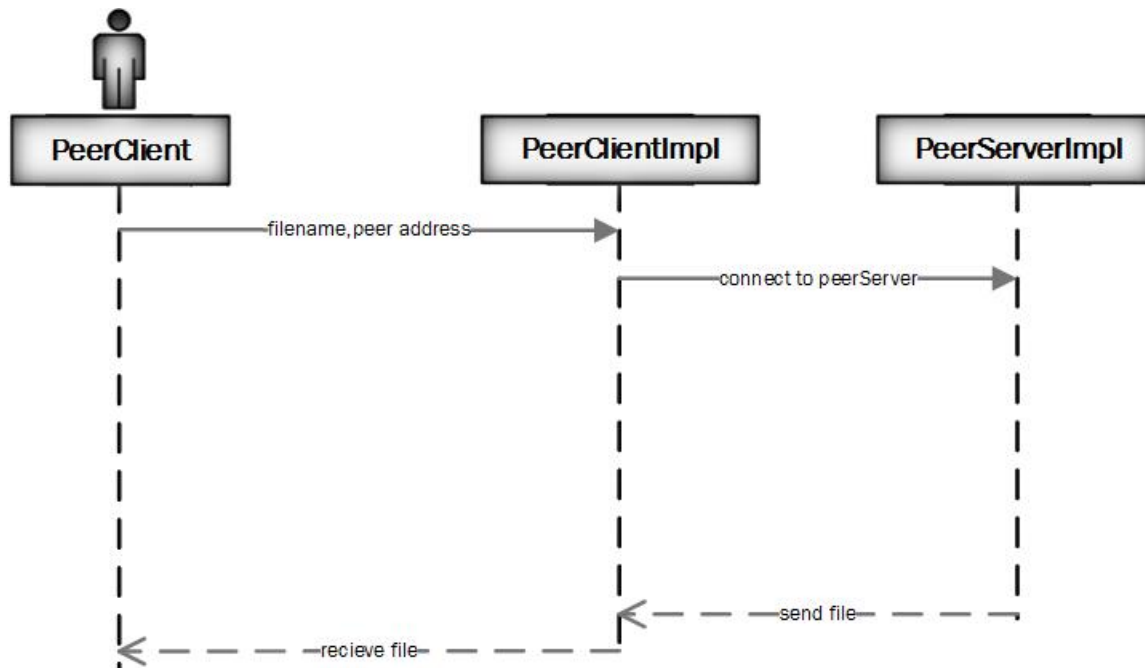
File Registry Sequence Diagram –



File Lookup Sequence Diagram –

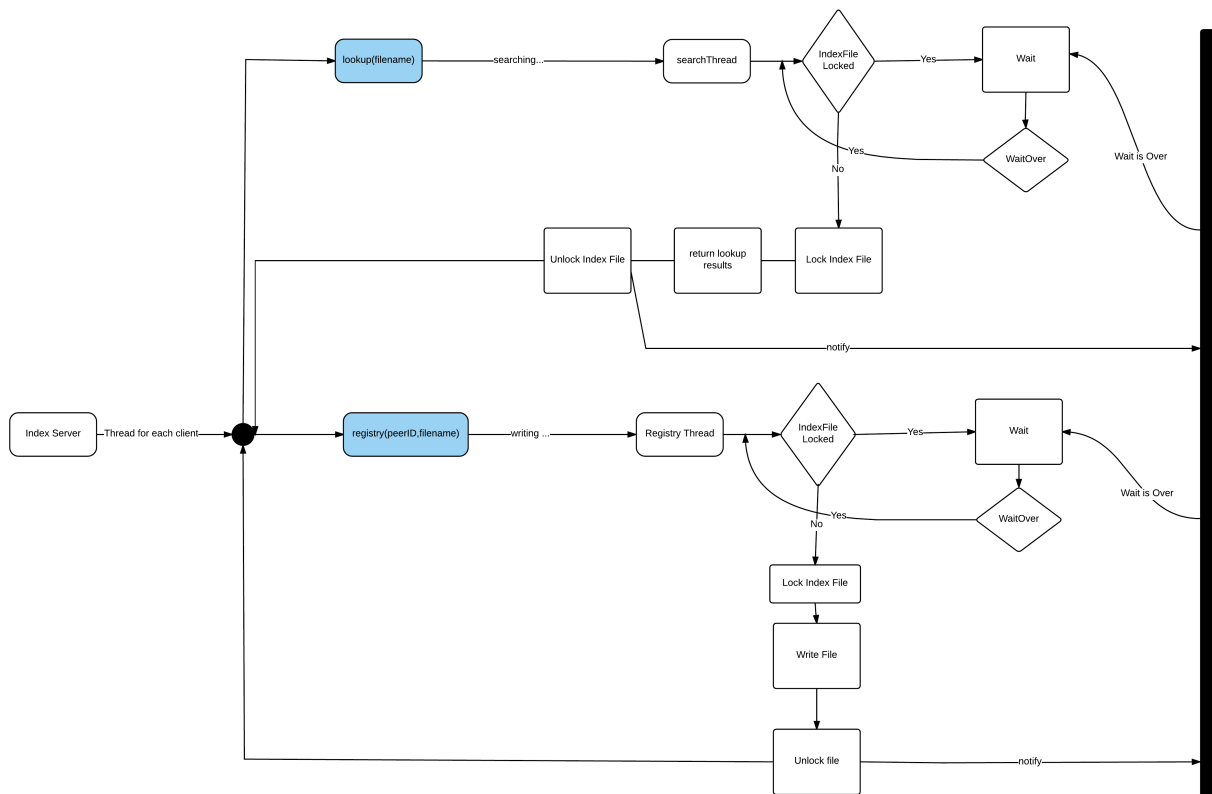


File Download Sequence Diagram –



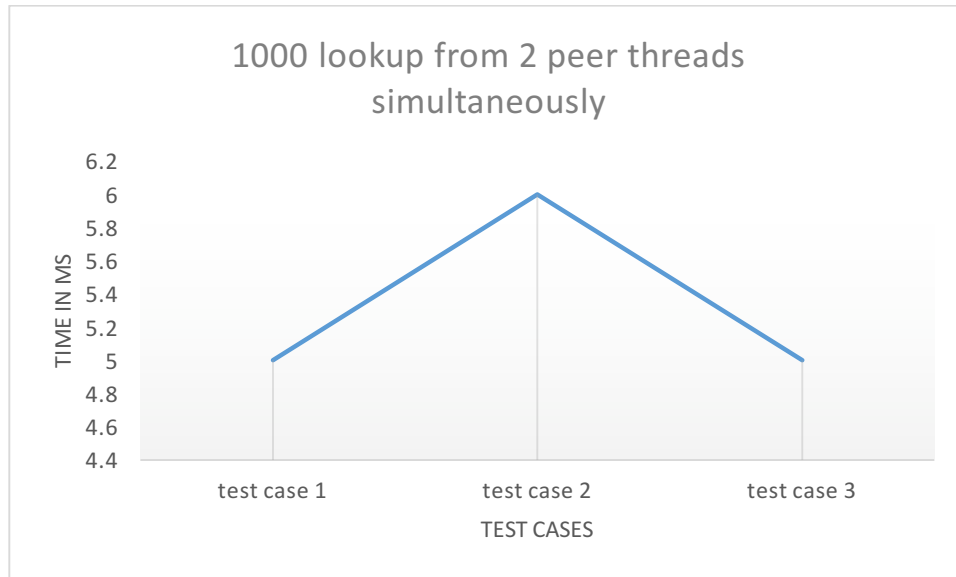
Registry and Lookup Concurrency Flow chart

Flow Chart - Registry and Lookup



Evaluation and measurement :

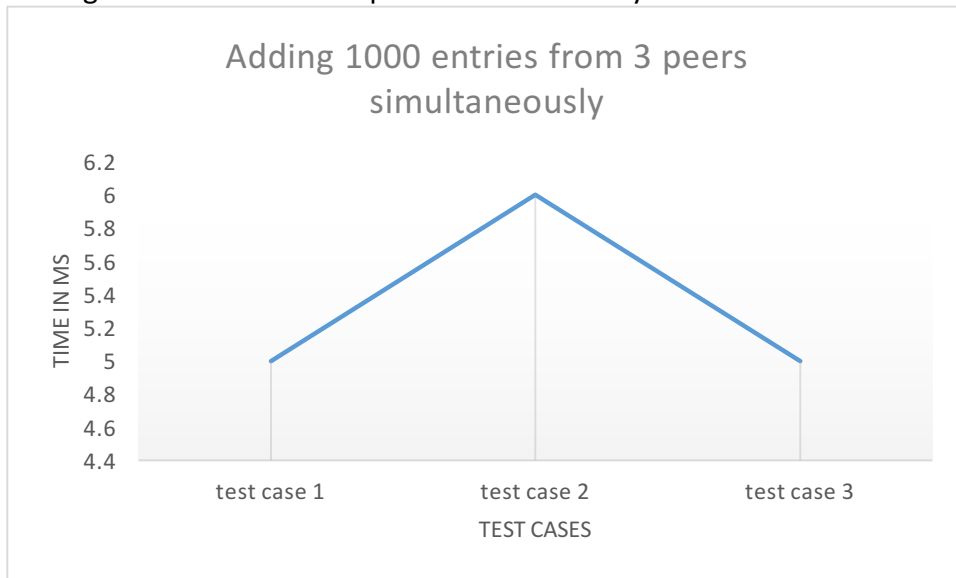
Lookup



```
Run RunIndexMainTest.indexLookUp
1 test passed - 690ms
RunIndexMainTest (cs55) 690ms
indexLookUp 690ms
localhost:3600
localhost:3600
localhost:3600
*****
Socket port at client from peer client file : 51931
Socket port at client from peer client file : 51932
File available location :
*****
File available location :
*****
Process finished with exit code 0
```

Registry

Adding 1000 entries from 3 peers simultaneously



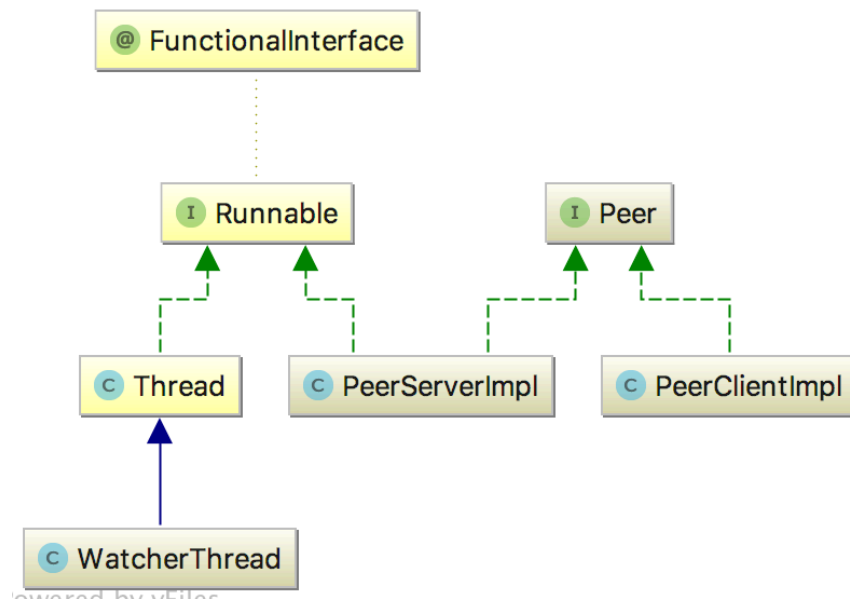
Run RunIndexMainTest

RunIndexMainTest (cs 1s 445ms)

indexRegistry 6ms

Class Diagram and its dependency -

Peer Server



Index Server

