NOTE: All results we get will be displayed using images.

For easy to understand and operate, we use terminal to run our program, although we write and debug it in eclipse.

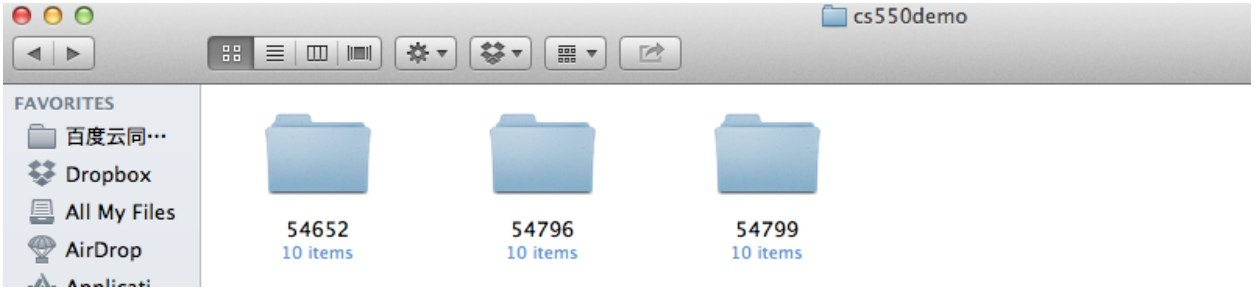
1.Startup

we start up 1 index server and 3 peers.

index server:
"Index server New Thread" means that there are 3 peers has connected to it.

client:

After launching, there are 3 directories.



Peer 1: 54652 Peer 2: 54796 Peer 3: 54799

2. User Interface

Client

```
Please input operation index:
1: Registry
2: Search
3: Obtain
4: Quit
```

3. registry

Registry is either automatic or manual-input. Automatic way is just create, delete or change a file, the result will be reflected to the index server. I will demo manual way here.

client end:
Peer 1

```
Please input operation index:
1: Registry
2: Search
3: Obtain
4: Quit
1
```

index server:

```
54652   [.DS_Store, 10K.txt, 1K.txt, 2K.txt, 3K.txt, 4K.txt, 5K.txt, 6K.txt, 7K.txt, 8K.txt, 9K.txt]
54796   [.DS_Store, 10K.txt, 2K.txt, 4K.txt, 6K.txt, 8K.txt, FiveK.txt, NineK.txt, OneK.txt, SevenK.txt, ThreeK.txt]
54799   [.DS_Store, 2K.txt, 5K.txt, 7K.txt, 9K.txt, EightK.txt, FourK.txt, OneK.txt, SixK.txt, TenK.txt, ThreeK.txt]
```

.DS_Store is just default directory generated by vfs2, we can ignore it.

4. ***Search****:*

I use peer 1 to search ThreeK.txt . From the result of registry, we can see that Threek.txt is in Peer 2 and Peer 3.

```
Please input operation index:
1: Registry
2: Search
3: Obtain
4: Quit
2
Please input the name of the file you are looking for.
ThreeK.txt
Peer List is : 54796-54799-
```

Peer 1 gets 54786 and 54799, which are corresponds to the peerId of Peer 2 and Peer 3.

5. Obtain:

I use peer to download ThreeK.txt from Peer 3.

Peer 1 :

```
Please input operation index:
1: Registry
2: Search
3: Obtain
4: Quit
3
Please input the name of the file you are looking for.
ThreeK.txt
Peers who has the given file:
54796-54799-
Please input the id of the client you want to download from :
54799
```

Peer 3:

```
Download file is : ThreeK.txt
```

Then we check index server once more.

```
54652   [.DS_Store, 10K.txt, 1K.txt, 2K.txt, 3K.txt, 4K.txt, 5K.txt, 6K.txt, 7K.txt, 8K.txt, 9K.txt, ThreeK.txt]
54796   [.DS_Store, 10K.txt, 2K.txt, 4K.txt, 6K.txt, 8K.txt, FiveK.txt, NineK.txt, OneK.txt, SevenK.txt, ThreeK.txt]
54799   [.DS_Store, 2K.txt, 5K.txt, 7K.txt, 9K.txt, EightK.txt, FourK.txt, OneK.txt, SixK.txt, TenK.txt, ThreeK.txt]
```

We see that ThreeK.txt is downloaded in the local directory of Peer 1.

6. Automatic update

This part is relatively hard to demo. TA or professor can just create, delete or change file in the directory to test this functionality. Or if needed, I can demo it.