

Testing

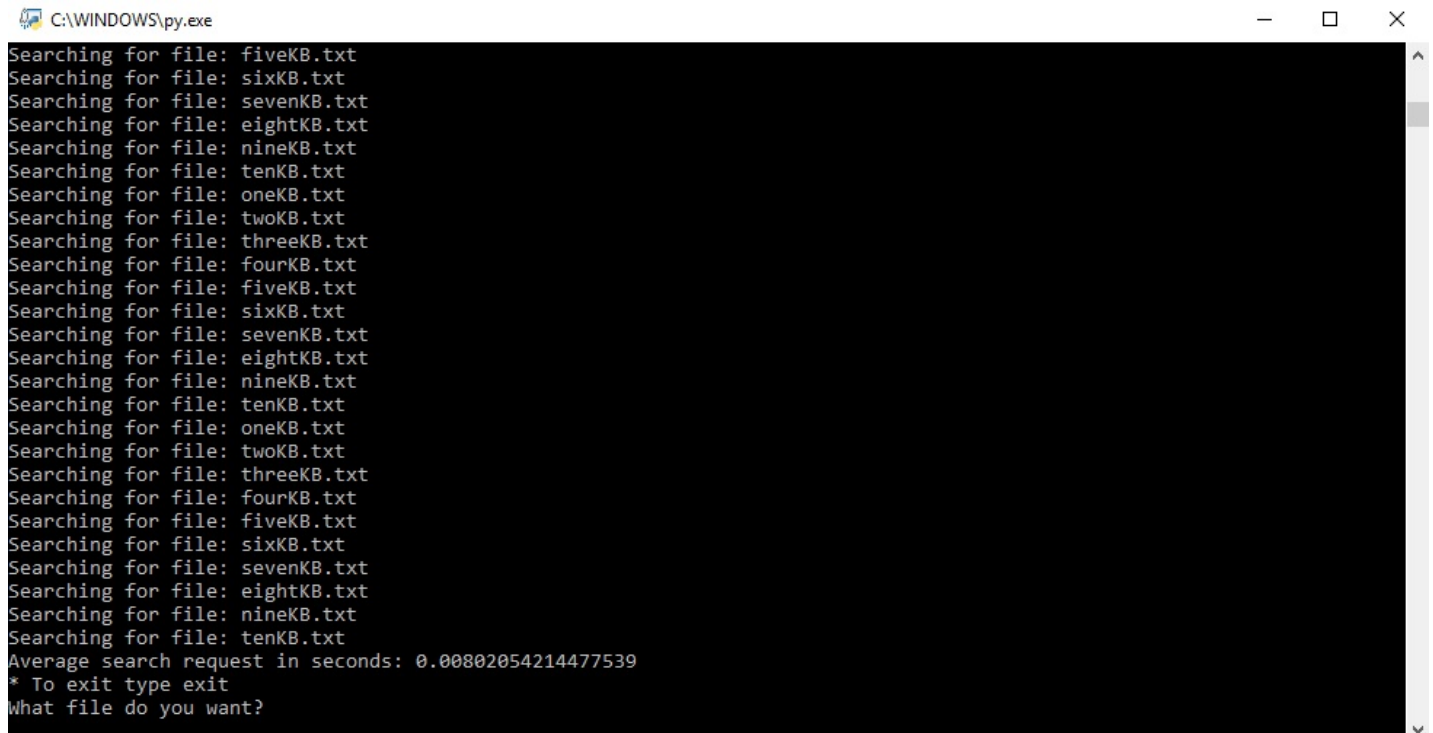
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Tests

Test 1: 500 index server queries with only one peer

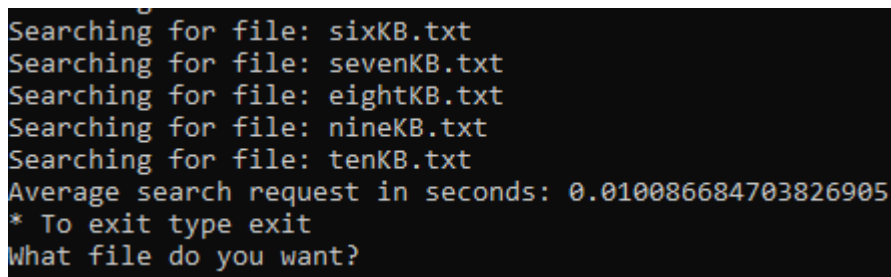
Tests to find out the average response time of a search request from the client. The client does 500 sequential searches. Each search time is summed up and then divided by 500 and the average response time is found.



```
C:\WINDOWS\py.exe
Searching for file: fiveKB.txt
Searching for file: sixKB.txt
Searching for file: sevenKB.txt
Searching for file: eightKB.txt
Searching for file: nineKB.txt
Searching for file: tenKB.txt
Searching for file: oneKB.txt
Searching for file: twoKB.txt
Searching for file: threeKB.txt
Searching for file: fourKB.txt
Searching for file: fiveKB.txt
Searching for file: sixKB.txt
Searching for file: sevenKB.txt
Searching for file: eightKB.txt
Searching for file: nineKB.txt
Searching for file: tenKB.txt
Searching for file: oneKB.txt
Searching for file: twoKB.txt
Searching for file: threeKB.txt
Searching for file: fourKB.txt
Searching for file: fiveKB.txt
Searching for file: sixKB.txt
Searching for file: sevenKB.txt
Searching for file: eightKB.txt
Searching for file: nineKB.txt
Searching for file: tenKB.txt
Average search request in seconds: 0.00802054214477539
* To exit type exit
What file do you want?
```

Test 2: 500 index server queries with multiple peers

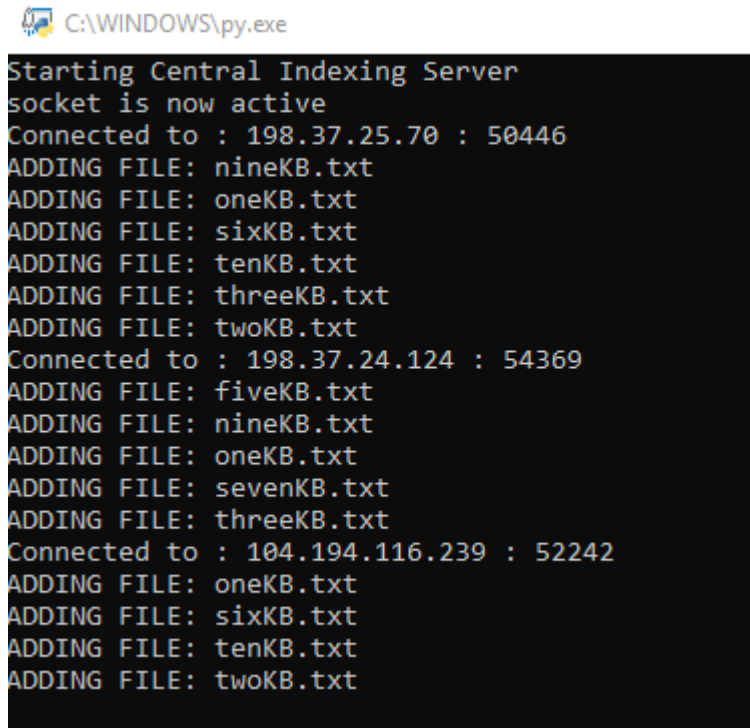
When the peer client prompts the user for input there is an option to input test.txt. This will start reading from the test file which contains 500 names of files. The peer client will then query the index server for all of the file names and record the average response time. After running multiple tests, the average average response time was 0.01sec.



```
Searching for file: sixKB.txt
Searching for file: sevenKB.txt
Searching for file: eightKB.txt
Searching for file: nineKB.txt
Searching for file: tenKB.txt
Average search request in seconds: 0.010086684703826905
* To exit type exit
What file do you want?
```

Test 3: 3 Peer connections at the same time

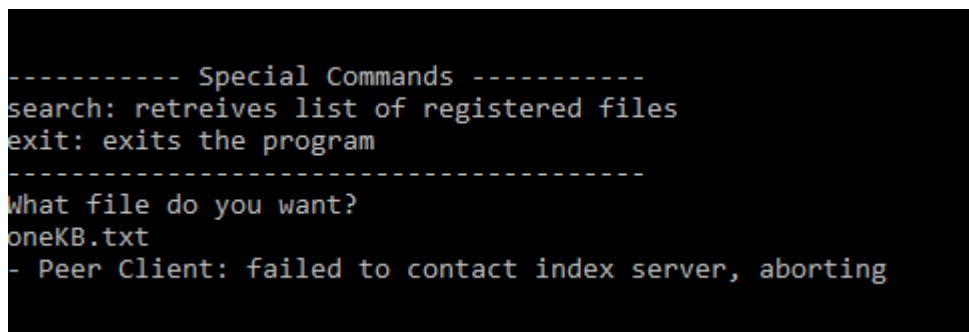
The screenshot below shows the output of the index server. Three separate users have connected and there was no indication of a client disconnecting.



```
C:\WINDOWS\py.exe
Starting Central Indexing Server
socket is now active
Connected to : 198.37.25.70 : 50446
ADDING FILE: nineKB.txt
ADDING FILE: oneKB.txt
ADDING FILE: sixKB.txt
ADDING FILE: tenKB.txt
ADDING FILE: threeKB.txt
ADDING FILE: twoKB.txt
Connected to : 198.37.24.124 : 54369
ADDING FILE: fiveKB.txt
ADDING FILE: nineKB.txt
ADDING FILE: oneKB.txt
ADDING FILE: sevenKB.txt
ADDING FILE: threeKB.txt
Connected to : 104.194.116.239 : 52242
ADDING FILE: oneKB.txt
ADDING FILE: sixKB.txt
ADDING FILE: tenKB.txt
ADDING FILE: twoKB.txt
```

Test 4: Index server goes down

When the index server goes down and the client tries to query it, the client gives an error “Failed to connect to index server.”



```
----- Special Commands -----
search: retrieves list of registered files
exit: exits the program
-----
What file do you want?
oneKB.txt
- Peer Client: failed to contact index server, aborting
```

Test 5: If file is not registered with index server

The client requests peers that host the nonexistent file. The index server does not find any peers that host that file so an empty array is sent. Optimally the list would be populated with peers that are hosting that file. The client recognizes the empty list and understands that the file can not be located.

```
C:\WINDOWS\py.exe
Starting Central Indexing Server
socket is now active
Connected to : 198.37.25.70 : 58115
ADDING FILE: nineKB.txt
ADDING FILE: oneKB.txt
ADDING FILE: sixKB.txt
ADDING FILE: tenKB.txt
ADDING FILE: threeKB.txt
ADDING FILE: twoKB.txt
Connected to : 198.37.25.70 : 58228
Searching for file: doesNotExist.txt
Client disconnected






C:\WINDOWS\py.exe
Starting Peer
Starting Peer Server
* Peer Server: connecting to index server...
* Peer Server: Connected to index server
+ Peer Server: Change to file: nineKB.txt
+ Peer Server: Change to file: oneKB.txt
+ Peer Server: Change to file: sixKB.txt
+ Peer Server: Change to file: tenKB.txt
+ Peer Server: Change to file: threeKB.txt
+ Peer Server: Change to file: twoKB.txt
+ Peer Server: Now listening for other peers
+ Peer Client: Client starting...
+ Peer Client: Client started

----- Special Commands -----
search: retrieves list of registered files
exit: exits the program
-----
What file do you want?
doesNotExist.txt
- Peer Client: File not registered with index server

----- Special Commands -----
search: retrieves list of registered files
exit: exits the program
-----
What file do you want?
```

Test 6: Transferring a 10KB file

The peer server and client sends and receives the file in 1KB chunks. To verify that the file was being transferred successfully we sent the file and verified the file size after.

PC > Documents > School > ComputerScience > CS550 > Homework > PA1 > Peer > SharedSpace				
Name	^	Date modified	Type	Size
 nineKB		9/21/2018 10:47 PM	Text Document	9 KB
 oneKB		9/22/2018 1:40 PM	Text Document	0 KB
 sixKB		9/22/2018 12:42 PM	Text Document	6 KB
 threeKB		9/22/2018 12:31 PM	Text Document	3 KB
 twoKB		9/22/2018 12:08 PM	Text Document	2 KB

```
C:\WINDOWS\py.exe
Starting Central Indexing Server
socket is now active
Connected to : 198.37.24.124 : 52028
ADDING FILE: nineKB.txt
ADDING FILE: oneKB.txt
ADDING FILE: sixKB.txt
ADDING FILE: threeKB.txt
ADDING FILE: twoKB.txt
Connected to : 104.194.116.239 : 51401
ADDING FILE: nineKB.txt
ADDING FILE: oneKB.txt
ADDING FILE: sixKB.txt
ADDING FILE: tenKB.txt
ADDING FILE: threeKB.txt
ADDING FILE: twoKB.txt
Connected to : 198.37.24.124 : 52041
Sending file catalog
Client exited

C:\WINDOWS\py.exe
+ Peer Server: Change to file: sixKB.txt
+ Peer Server: Change to file: threeKB.txt
+ Peer Server: Change to file: twoKB.txt
+ Peer Server: Now listening for other peers
+ Peer Client: Client starting...
+ Peer Client: Client started

----- Special Commands -----
search: retrieve list of registered files
exit: exits the program
-----
What file do you want?
search

nineKB.txt
oneKB.txt
sixKB.txt
threeKB.txt
twoKB.txt
tenKB.txt

----- Special Commands -----
search: retrieve list of registered files
exit: exits the program
-----
What file do you want?

C:\WINDOWS\py.exe
Starting Central Indexing Server
socket is now active
Connected to : 198.37.24.124 : 52028
ADDING FILE: nineKB.txt
ADDING FILE: oneKB.txt
ADDING FILE: sixKB.txt
ADDING FILE: threeKB.txt
ADDING FILE: twoKB.txt
Connected to : 104.194.116.239 : 51401
ADDING FILE: nineKB.txt
ADDING FILE: oneKB.txt
ADDING FILE: sixKB.txt
ADDING FILE: tenKB.txt
ADDING FILE: threeKB.txt
ADDING FILE: twoKB.txt
Connected to : 198.37.24.124 : 52041
Sending file catalog
Client exited
Connected to : 198.37.24.124 : 52043
Searching for file: tenKB.txt
Client disconnected
ADDING FILE: tenKB.txt

C:\WINDOWS\py.exe
What file do you want?
search

nineKB.txt
oneKB.txt
sixKB.txt
threeKB.txt
twoKB.txt
tenKB.txt

----- Special Commands -----
search: retrieve list of registered files
exit: exits the program
-----
What file do you want?
tenKB.txt
+ Peer Client: Looking for 'tenKB.txt' on: 104.194.116.239
+ Peer Client: retrieved file: 'tenKB.txt'

----- Special Commands -----
search: retrieve list of registered files
exit: exits the program
-----
What file do you want?
+ Peer Server: Change to file: tenKB.txt
```

his PC > Documents > School > ComputerScience > CS550 > Homework > PA1 > Peer > SharedSpace

Name	Date modified	Type	Size
Ⓞ nineKB	9/21/2018 10:47 PM	Text Document	9 KB
Ⓞ oneKB	9/22/2018 1:40 PM	Text Document	0 KB
Ⓞ sixKB	9/22/2018 12:42 PM	Text Document	6 KB
Ⓞ tenKB	9/23/2018 2:10 PM	Text Document	10 KB
Ⓞ threeKB	9/22/2018 12:31 PM	Text Document	3 KB
Ⓞ twoKB	9/22/2018 12:08 PM	Text Document	2 KB

Test 7: Accuracy of the data structure

View

his PC > Documents > School > ComputerScience > CS550 > Homework > PA1 > Peer > SharedSpace

Name	Date modified	Type	Size
Ⓞ nineKB	9/21/2018 10:47 PM	Text Document	9 KB
Ⓞ oneKB	9/22/2018 1:40 PM	Text Document	0 KB
Ⓞ sixKB	9/22/2018 12:42 PM	Text Document	6 KB
Ⓞ tenKB	9/23/2018 2:10 PM	Text Document	10 KB
Ⓞ threeKB	9/22/2018 12:31 PM	Text Document	3 KB
Ⓞ twoKB	9/22/2018 12:08 PM	Text Document	2 KB

Type: Text Document
Size: 5.71 KB
Date modified: 9/22/2018 12:42 PM

```
Starting Central Indexing Server
socket is now active
Connected to : 198.37.24.124 : 52170
ADDING FILE: nineKB.txt
ADDING FILE: oneKB.txt
ADDING FILE: sixKB.txt
ADDING FILE: tenKB.txt
ADDING FILE: threeKB.txt
ADDING FILE: twoKB.txt
Connected to : 198.37.24.124 : 52171
Sending file catalog
PRINTING ALL FILES ON THE GRID
Files stored at peer: 0
Filename: nineKB.txt
Filename: oneKB.txt
Filename: sixKB.txt
Filename: tenKB.txt
Filename: threeKB.txt
Filename: twoKB.txt
END OF FILES
Client exited
```

Known Issues

Issue 1: Index server response too large

When the peer client searches the index server for a specific file, the index server responds with a list of peer servers. Currently, there is no mechanism to handle an index server response of over 1024 Bytes. Anything in the response past the 1024th Byte will be cut off.