OUTPUT DESCRIPTION

Firstly, when we start the server, the server will tell how many threads it is waiting for connect from client. And also it displays the ip and port the server listens on:

```
dev@ubuntu1404-desktop:~/Documents/ace/hw1/build$ ./index_server
server has[6] threads to handler client request
server begin listen on ip[127.0.0.1] port: [5551]
```

Then, we start the client, with the config file as the only argument.
The peer server would just say it is now listening its port
The peer client would display the ip and port info which is the desired server.
And then ask the user to input the directory to register the files to index server (NOTICE: we will register all files in the provided directory)

```
dev@ubuntu1404-desktop:~/Documents/ace/hw1/test1$ ./client ../config/
fig
now begin listen
Welcome to the peer client. happy share~~
wanna to connect server[127.0.0.1] and port: [5551]
please input the directory to register
```

Then, after user type the directory, it shows “Register Success”, and also display totally register how many files. In this case, it registers 1002 files to index server.

```
Register Success. register total file number:1002
Please enter the file name you wanna download
```

Then, the user is asked to enter the file name to download. Try to type any name you wanna to download. In this case, like “dsdf”
And obviously, the server would return non-exist and the client shows up the file is not exist. And the client would continue to ask user to enter the new file name to download.

```
Please enter the file name you wanna download
dsdf
Search filename: [dsdf]
file :dsdf Not exist
Please enter the file name you wanna download
```

And, this is the at the same time, the server shows that the file “dsdf” can not be found on any registered peer server.

```
new connection accepted
Begin to search file[dsdf]
File not found on any peer server
```

Then, the user try again to download a file named “100.log”, which is exist. And it returns the search result: the PORT and IP. And also it asks whether to download the file and from which server. (Notice: since there maybe several peer server has this file, so it is decided by the user to choose from which server download this file. When it is a list of source, user type 0 to n-1 to represent the peer server)

```
Please enter the file name you wanna download
100.log
Search filename: [100.log]
Get the search result: [5556&127.0.0.1]100.log
Search file: 100.logsuccess
Peer server :127.0.0.1 port :5556 has this file
If you wanna to downlaod, press number to reprensent server (0 represents the fi
rst peer server
```

Then, here, there is only one source, and the user types 0 and it begin to download and shows up the file length. After this, it continues to ask which file would like to download.

```
Begin to download from server: [127.0.0.1] port: [5556]
request to download file[100.log]
file len[14]
Please enter the file name you wanna download
```

At the same time, when the client asks to download a file, here like “100.log”, the server would search the file and if found, it will return the PORT and IP info to client.

```
new connection accepted
Begin to search file[100.log]
Found the file: [100.log]
```

Last, there is a TEST mode. Which will automatically register files, search files, and download files and then record the time used.

```
TEST DATA ARE BELOW!
Register file number: [1002] cost time: [298015511]us
Register average time: [297420]
Search file number: [1000] cost time: [299809735]us
Search average time: [299809]
Download file number: [1000] cost time: [100853943]us
Download average time: [100853]
TEST DONE SUCEFULLY
```