

# CS50011 Lab 7 HTTP Server

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## Catalog:

1. Introduction	-----2
2. Simple Test	-----3
3. Complex Test	-----3
4. Showing normal file	-----4
5. Browsing Directory	-----5
6. Sort	-----6
7. Extra Credit	-----7
8. Conclusion	-----9

# 1.Introduction

In this lab, we are going to implement two style of the process style for server to receive the request from the client and send back the result such as image/file/code's result/html/directory to the client.

In this way, we can know the basic knowledge of the http 's protocol and implement our own web server.

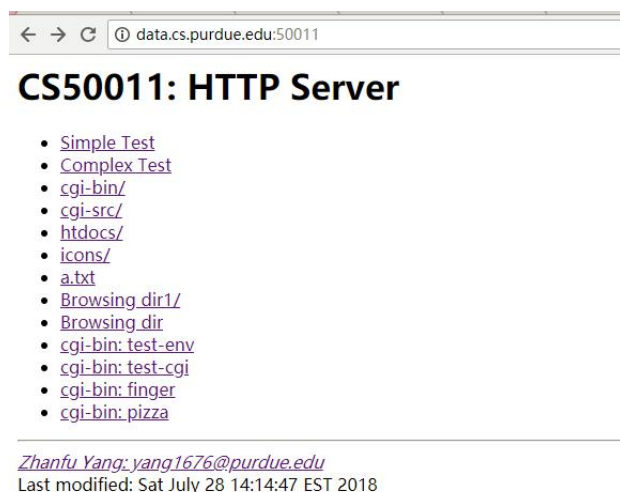
The main knowledge we can learn from this lab is in the following:

- 1.System based execution for the file.
- 2.Using the system's library to help us to show more detail about the file.
- 3.http's protocol
- 4.Coding ability.

After running the the bash as `./run.sh` in my code.

It will automatically run the http server in -p mode.

The index.html look likes:

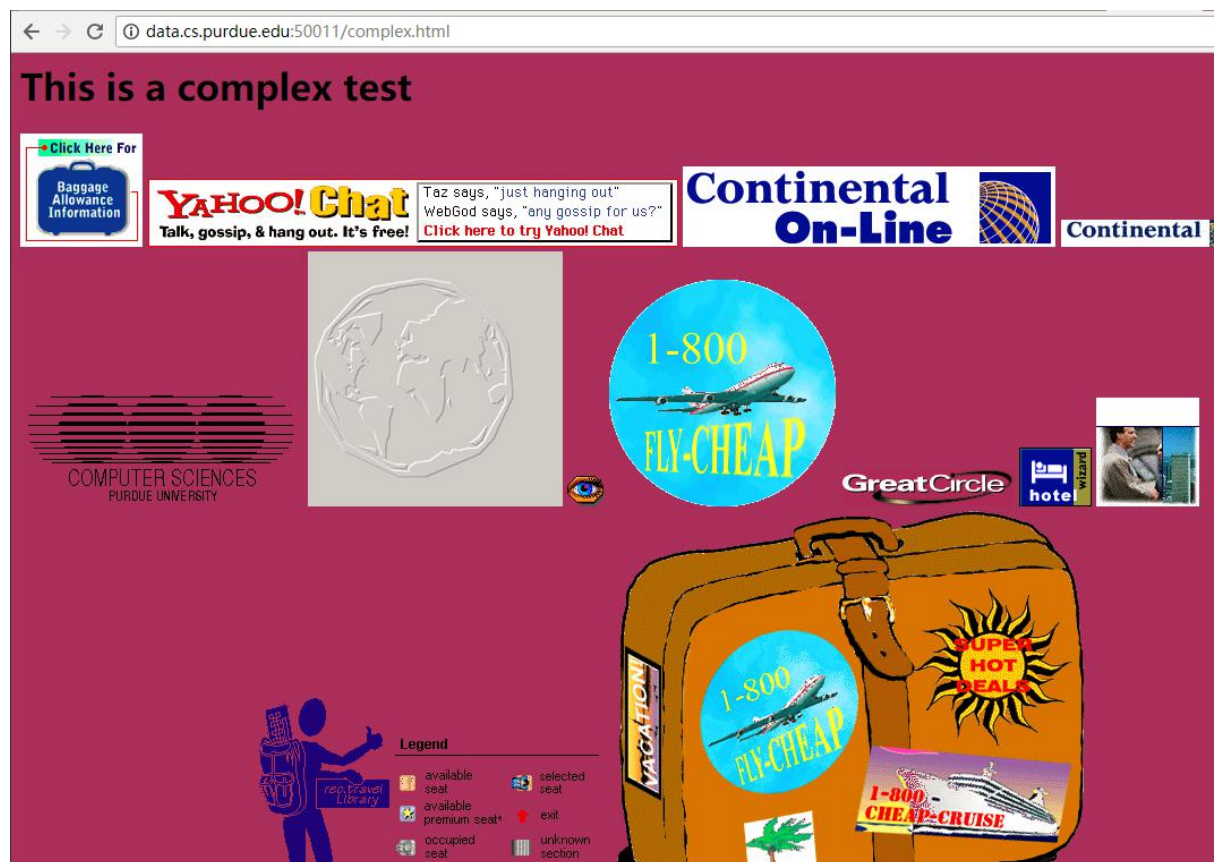


## 2.Simple Test

After click on the Simple Test, we have the following results:

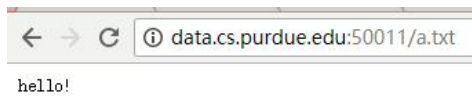


## 3. Complex Test

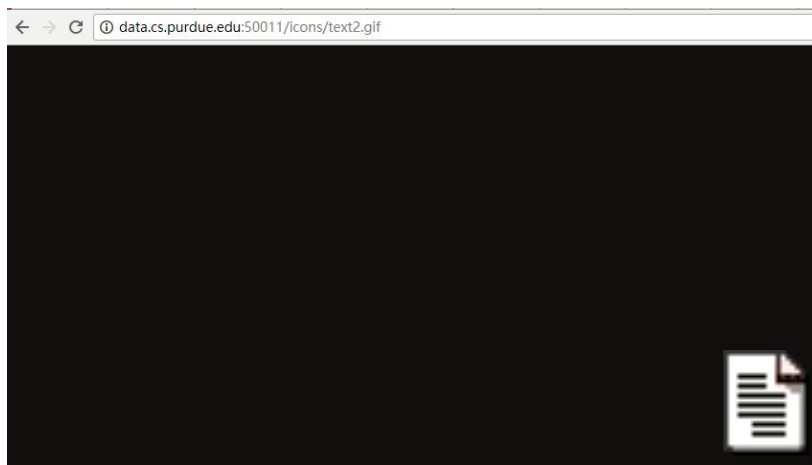


## 4. Showing normal file

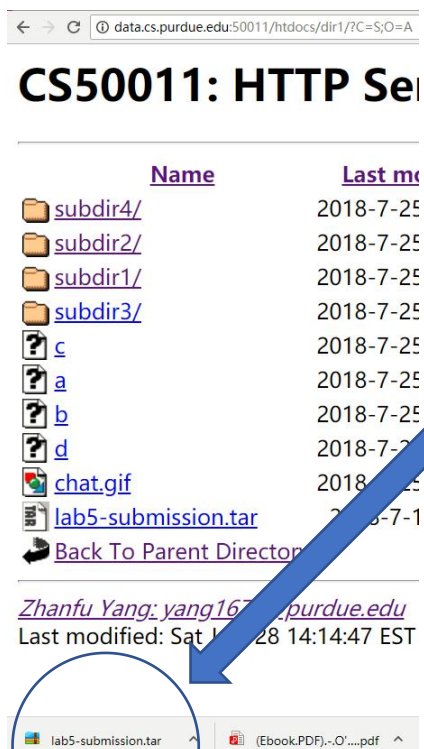
TxT:



Gif:



Tar:








## 5. Browsing Directory

/dir1/

← → data.cs.purdue.edu:50011/dir1/

### CS50011: HTTP Server








Name	Last modified	Size
 <a href="#">subdir4/</a>	2018-7-25 13:32:41	-
 <a href="#">subdir2/</a>	2018-7-25 13:32:42	-
 <a href="#">c</a>	2018-7-25 13:32:38	0
 <a href="#">subdir1/</a>	2018-7-25 13:32:45	-
 <a href="#">chat.gif</a>	2018-7-25 13:32:40	8K
 <a href="#">a</a>	2018-7-25 13:32:41	0
 <a href="#">subdir3/</a>	2018-7-25 13:32:40	-
 <a href="#">b</a>	2018-7-25 13:32:43	0
 <a href="#">d</a>	2018-7-25 13:32:46	0
 <a href="#">lab5-submission.tar</a>	2018-7-16 20:6:11	276K
 <a href="#">Back To Parent Directory</a>		

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Last modified: Sat July 28 14:14:47 EST 2018

/dir

← → data.cs.purdue.edu:50011/dir1

### CS50011: HTTP Server






Name	Last modified	Size
 <a href="#">subdir4/</a>	2018-7-25 13:32:41	-
 <a href="#">subdir2/</a>	2018-7-25 13:32:42	-
 <a href="#">c</a>	2018-7-25 13:32:38	0
 <a href="#">subdir1/</a>	2018-7-25 13:32:45	-
 <a href="#">chat.gif</a>	2018-7-25 13:32:40	8K
 <a href="#">a</a>	2018-7-25 13:32:41	0
 <a href="#">subdir3/</a>	2018-7-25 13:32:40	-
 <a href="#">b</a>	2018-7-25 13:32:43	0
 <a href="#">d</a>	2018-7-25 13:32:46	0
 <a href="#">lab5-submission.tar</a>	2018-7-16 20:6:11	276K
 <a href="#">Back To Parent Directory</a>		

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Go to child dir: subdir1/:

← → data.cs.purdue.edu:50011/htdocs/dir1/subdir1

### CS50011: HTTP Server



Name	Last modified	Size
 <a href="#">c</a>	2018-7-25 13:32:43	0
 <a href="#">a</a>	2018-7-25 13:32:44	0
 <a href="#">b</a>	2018-7-25 13:32:45	0
 <a href="#">d</a>	2018-7-25 13:32:45	0
 <a href="#">Back To Parent Directory</a>		

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Use: "../" to go to parent dir:












← → data.cs.purdue.edu:50011/htdocs/dir1/

### CS50011: HTTP Server












Name	Last modified	Size
 <a href="#">subdir4/</a>	2018-7-25 13:32:41	-
 <a href="#">subdir2/</a>	2018-7-25 13:32:42	-
 <a href="#">c</a>	2018-7-25 13:32:38	0

## 6.Sort












Sort By Name:

data.cs.purdue.edu:50011/htdocs/dir1/?C=N;O=A		
CS50011: HTTP Server		
Name	Last modified	Size
 <a href="#">a</a>	2018-7-25 13:32:41	0
 <a href="#">b</a>	2018-7-25 13:32:43	0
 <a href="#">c</a>	2018-7-25 13:32:38	0
 <a href="#">chat.gif</a>	2018-7-25 13:32:40	8K
 <a href="#">d</a>	2018-7-25 13:32:46	0
 <a href="#">lab5-submission.tar</a>	2018-7-16 20:6:11	276K
 <a href="#">subdir1/</a>	2018-7-25 13:32:45	-
 <a href="#">subdir2/</a>	2018-7-25 13:32:42	-
 <a href="#">subdir3/</a>	2018-7-25 13:32:40	-
 <a href="#">subdir4/</a>	2018-7-25 13:32:41	-
 <a href="#">Back To Parent Directory</a>		

Sort By Last Modified:

data.cs.purdue.edu:50011/htdocs/dir1/?C=M;O=A		
CS50011: HTTP Server		
Name	Last modified	Size
 <a href="#">lab5-submission.tar</a>	2018-7-16 20:6:11	276K
 <a href="#">c</a>	2018-7-25 13:32:38	0
 <a href="#">chat.gif</a>	2018-7-25 13:32:40	8K
 <a href="#">subdir3/</a>	2018-7-25 13:32:40	-
 <a href="#">subdir4/</a>	2018-7-25 13:32:41	-
 <a href="#">a</a>	2018-7-25 13:32:41	0
 <a href="#">subdir2/</a>	2018-7-25 13:32:42	-
 <a href="#">b</a>	2018-7-25 13:32:43	0
 <a href="#">subdir1/</a>	2018-7-25 13:32:45	-
 <a href="#">d</a>	2018-7-25 13:32:46	0
 <a href="#">Back To Parent Directory</a>		

Sort By Size

data.cs.purdue.edu:50011/htdocs/dir1/?C=S;O=A		
CS50011: HTTP Server		
Name	Last modified	Size
 <a href="#">subdir4/</a>	2018-7-25 13:32:41	-
 <a href="#">subdir2/</a>	2018-7-25 13:32:42	-
 <a href="#">subdir1/</a>	2018-7-25 13:32:45	-
 <a href="#">subdir3/</a>	2018-7-25 13:32:40	-
 <a href="#">c</a>	2018-7-25 13:32:38	0
 <a href="#">a</a>	2018-7-25 13:32:41	0
 <a href="#">b</a>	2018-7-25 13:32:43	0
 <a href="#">d</a>	2018-7-25 13:32:46	0
 <a href="#">chat.gif</a>	2018-7-25 13:32:40	8K
 <a href="#">lab5-submission.tar</a>	2018-7-16 20:6:11	276K
 <a href="#">Back To Parent Directory</a>		

## 7.Extra Credit(Running the executable file)

### Cgi-bin:test-env

```
← → ↻ data.cs.purdue.edu:50011/cgi-bin/test-env

MAIL=/var/mail/yang1676
SSH_CLIENT=112.96.67.197 56178 22
USER=yang1676
J2SDKDIR=/usr/lib/jvm/java-8-oracle
SHLVL=2
J2REDIR=/usr/lib/jvm/java-8-oracle/jre
HOME=/homes/yang1676
SSH_TTY=/dev/pts/7
PAGER=less
LOGNAME=yang1676
_=./myhttpd
XDG_SESSION_ID=363655
TERM=xterm
PATH=/homes/yang1676/bin/:x86_64-linux:/homes/yang1676/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:
DERBY_HOME=/usr/lib/jvm/java-8-oracle/db
XDG_RUNTIME_DIR=/run/user/701412
LANG=en_US.UTF-8
SHELL=/usr/local/bin/bash
PWD=/homes/yang1676/cs50011/lab7-src
JAVA_HOME=/usr/lib/jvm/java-8-oracle
SSH_CONNECTION=112.96.67.197 56178 128.10.2.13 22
XDG_DATA_DIRS=/usr/local/share:/usr/share:/var/lib/snapd/desktop
TEXMFVAR=/p/tex/texmf-var
EDITOR=vi
```

### Cgi-bin:test-cgi

```
← → ↻ data.cs.purdue.edu:50011/cgi-bin/test-cgi

CGI/1.0 test script report:

argc is 0. argv is .

SERVER_SOFTWARE =
SERVER_NAME =
GATEWAY_INTERFACE =
SERVER_PROTOCOL =
SERVER_PORT =
REQUEST_METHOD =
HTTP_ACCEPT =
PATH_INFO =
PATH_TRANSLATED =
SCRIPT_NAME =
QUERY_STRING =
REMOTE_HOST =
REMOTE_ADDR =
REMOTE_USER =
AUTH_TYPE =
CONTENT_TYPE =
CONTENT_LENGTH =
```

### With ?a=2&b=1:

```
← → ↻ data.cs.purdue.edu:50011/cgi-bin/test-cgi?a=2&b=1

CGI/1.0 test script report:

argc is 2. argv is 2 1.

SERVER_SOFTWARE =
SERVER_NAME =
GATEWAY_INTERFACE =
SERVER_PROTOCOL =
SERVER_PORT =
REQUEST_METHOD =
HTTP_ACCEPT =
PATH_INFO =
PATH_TRANSLATED =
SCRIPT_NAME =
QUERY_STRING =
REMOTE_HOST =
REMOTE_ADDR =
REMOTE_USER =
AUTH_TYPE =
CONTENT_TYPE =
CONTENT_LENGTH =
```

## Cgi-bin:finger:



## Finger Gateway

This is a gateway to "finger". Type a user@host combination in your browser's search dialog.

## Use ?a=1&b=2:



## Cgi-bin:pizza:

**Jimmy John's Submarine Order Form**

This form will send a faxed order to Jimmy John's in Champaign. Proper password is required for order to be submitted, otherwise a copy of the order that w

Password:

**Sub Type**

Select which you would like of the following:

- ☐ The Pepe Gourmet Sub: Smoked virginia ham and provolone cheese topped with lettuce, tomato, and mayo.
- ☐ Big John Gourmet Sub: Medium rare shaved roast beef topped with mayo, lettuce, and tomato.
- ☐ Sorry Charlie Gourmet Sub: Tuna, mixed with celery, onions, and sauce, topped with lettuce, tomato, and alfalfa sprouts.
- ☐ Turkey Tom Gourmet Sub: Turkey breast topped with lettuce, mayo, alfalfa sprouts, and mayo.
- ☐ Vito Gourmet Sub: Genoa salami and provolone cheese topped with capicola, onion, lettuce, tomato, and Italian sauce.
- ☐ Vegetarian Gourmet Sub: Layers of provolone cheese, separated by avocado, sprouts, lettuce, tomato, and mayo.
- ☐ Gourmet Smoked Ham Club: 1/4 pound of smoked ham, provolone cheese, topped with lettuce, tomato, and mayo.
- ☐ Billy Club: Shaved roast beef, provolone cheese, french dijon mustard, topped with shaved ham, lettuce, tomato, and mayo.
- ☐ Italian Night Club: Genoa salami, Italian capicola, smoked ham, and provolone cheese topped with lettuce, tomato, onions, mayo, and Italian sauce.
- ☐ Hunter's Club: 1/4 pound of sliced roast beef, provolone cheese, topped with lettuce, tomato, and mayo.
- ☐ Country Club: Turkey breast, smoked ham, and provolonecheese topped with lettuce, tomato, and mayo.
- ☐ The Beach Club: Turkey breast, avocado, and cheese topped with lettuce, mayo, alfalfa, and tomato



## 8.Conclusion

In this lab, I have learned much practical skill in the web server and applied system, which is really helpful for my further study in the System and Web Security.

In the future, I hope I will try my best to learn much well and try to know some of the latest research area in the Security and applied System.