

Computer Network

HW #1 (30 Points)

Due date : 2018/4/19 (eCampus)

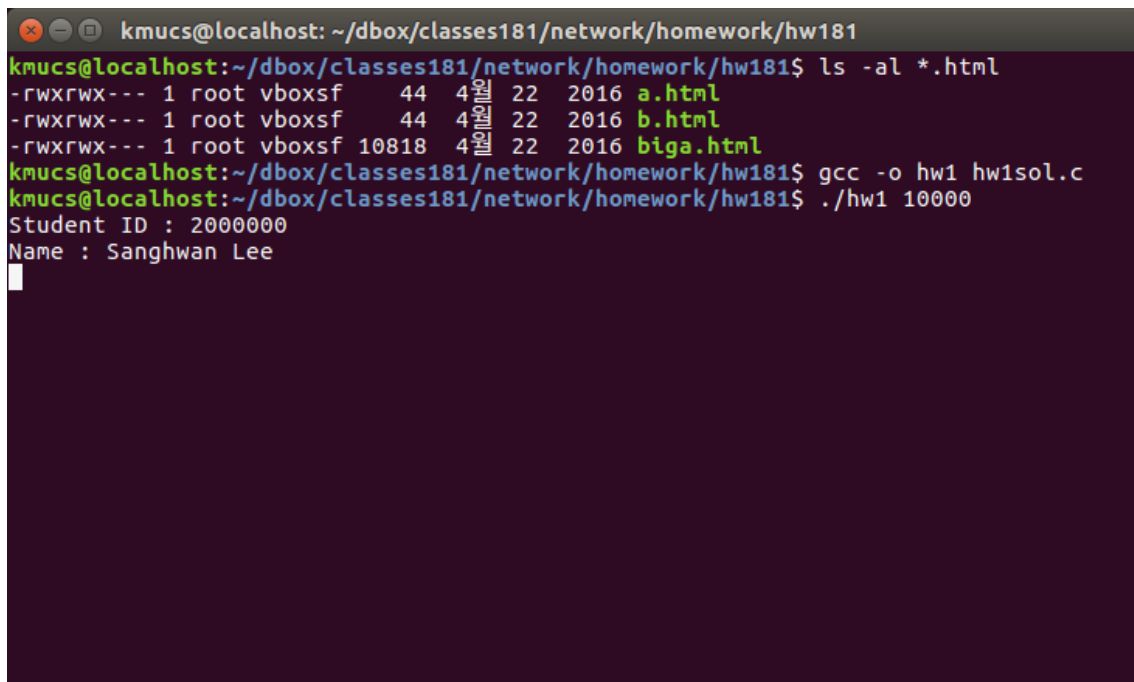
Things to Submit : studentid.c File (All code should be in one file.)

This homework is to implement a [simple web server](#). The web server should be able to receive a **HTTP Request** and send the **HTTP response** messages.

The following is an example of execution.

First, run the application “hw1” with port number **10000**.

You will see the student id and the name of the student.

A terminal window with a dark background and light green text. The prompt is 'kmucs@localhost: ~/dbox/classes181/network/homework/hw181'. The user runs 'ls -al *.html', showing three files: 'a.html', 'b.html', and 'biga.html'. Then, the user runs 'gcc -o hw1 hw1sol.c' and './hw1 10000'. The program outputs 'Student ID : 2000000' and 'Name : Sanghwan Lee' followed by a cursor.

```
kmucs@localhost: ~/dbox/classes181/network/homework/hw181
kmucs@localhost:~/dbox/classes181/network/homework/hw181$ ls -al *.html
-rwxrwx--- 1 root vboxsf  44 4월 22  2016 a.html
-rwxrwx--- 1 root vboxsf  44 4월 22  2016 b.html
-rwxrwx--- 1 root vboxsf 10818 4월 22  2016 biga.html
kmucs@localhost:~/dbox/classes181/network/homework/hw181$ gcc -o hw1 hw1sol.c
kmucs@localhost:~/dbox/classes181/network/homework/hw181$ ./hw1 10000
Student ID : 2000000
Name : Sanghwan Lee
█
```

Now, run a web browser and request one of the .html files. The URL is as follows.

http://localhost:10000/biga.html

Type this above URL in the web browser and hit enter.

hw1 will display the information of the connection and the HTTP request message.

Then, it will send the HTTP response message with the requested file.

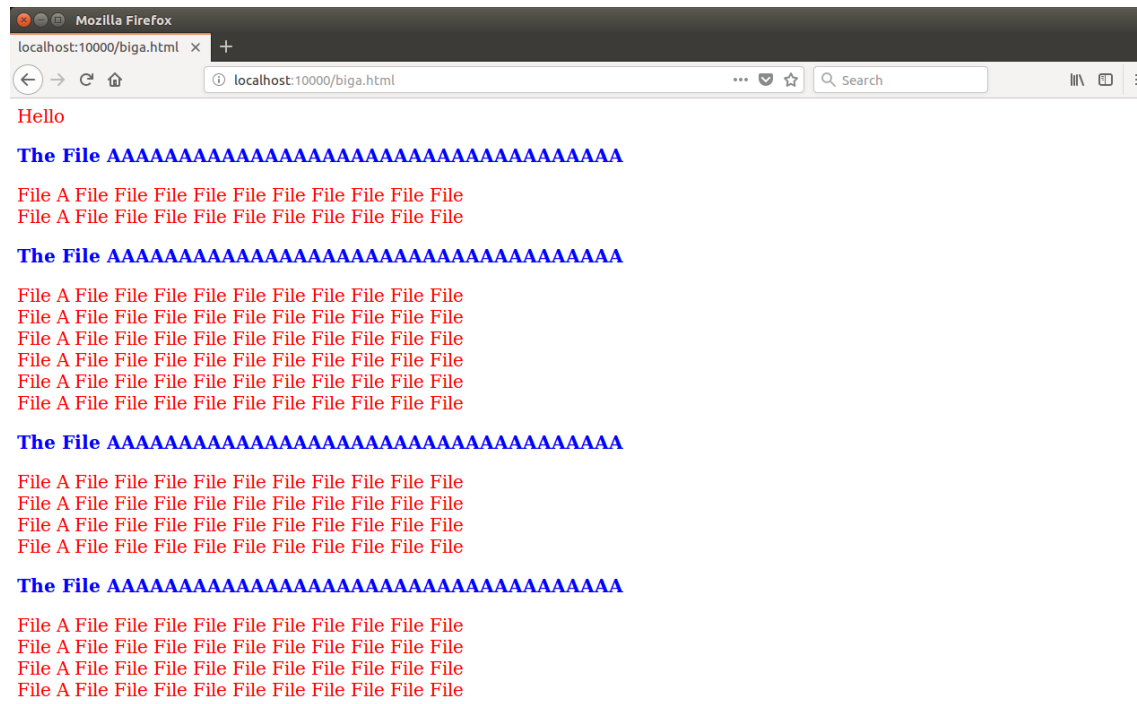
After that, it displays the number of bytes sent and the number of bytes of the file.

The two numbers should be the same.

```
kmucs@localhost: ~/dbox/classes181/network/homework/hw181
kmucs@localhost:~/dbox/classes181/network/homework/hw181$ ls -al *.html
-rwxrwx--- 1 root vboxsf 44 4월 22 2016 a.html
-rwxrwx--- 1 root vboxsf 44 4월 22 2016 b.html
-rwxrwx--- 1 root vboxsf 10818 4월 22 2016 biga.html
kmucs@localhost:~/dbox/classes181/network/homework/hw181$ gcc -o hw1 hw1sol.c
kmucs@localhost:~/dbox/classes181/network/homework/hw181$ ./hw1 10000
Student ID : 2000000
Name : Sanghwan Lee
Connection : Host IP 127.0.0.1, Port 51234, socket 4
GET /biga.html HTTP/1.1
Host: localhost:10000
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:59.0) Gecko/20100101 Firefox/59.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: keep-alive
Upgrade-Insecure-Requests: 1

finish 10818 10818
```

Then, the browser will display the file.



Now, hw1 is ready to receive another request.

Implementation details

- When the program is executed, the student ID and name should appear just as the above figures.
- An executable is attached so that you can test by yourself.
- In this homework, you do not have to use **select()** system call.
- Hw1.c contains a skeleton code for your convenience.
- Some C library function such as `fdopen()`, `fwrite()`, `fgets()`, and `fread()` are useful to read the socket and write the data to a file.

Good Luck!!!!