Practical Assignment #1

Introduction to Computer Networks

Description

Through Practical Assignment #1 to #4, you will build by the end of the semester a simple Unix-based Web server. That server will be developed in C on a Unix-based OS. This simple Web server will be capable of serving one request at a time. To simplify the programming task and to proceed incrementally, we will lead you through the simple Web server implementation in four stages. At the first stage, you will be asked to get on a Unix-based system and practice a number of basic commands to get around the Unix operating system.

1. Getting an account

You will be working on your practical assignment #1 to #4 all on Unix-based workstations. In particular, these machines: **ccws1**.ee.ntu.edu.tw, **ccws5**.ee.ntu.edu.tw, and **ccws9**.ee.ntu.edu.tw. Please make sure that you have an account on these EE dept workstations. Each EE undergraduate student has an account similar to his/her student ID. For example, student b91901001 has an account of b91901001 on our workstations. **Non-EE students should apply for one.** Go to EE department's Computing Center in EEII Room 114(電機二館 電機系計中) and fill up the application form. You may find more information about getting an account on the EE dept machines here:
http://cc.ee.ntu.edu.tw/index.php?p=accountapp

2. Preparation

Only Microsoft users will need this before you may proceed to the following exercises. If you are a Microsoft user, install 'ssh' first. ssh stands for **S**ecure **SH**ell. It enables you to log on to a Unix-based system securely. There are two popular ssh clients for Microsoft Windows based system – PuTTY and TTSSH. Install either one or anyone that supports ssh. For downloading and installation instructions, please refer to:

- http://www.chiark.greenend.org.uk/~sgtatham/putty/ for PuTTY
- http://www.zip.com.au/~roca/ttssh.html for TTSSH.

3. Getting on to a Unix-based system

With the ssh client installed, you may now log on to the Unix host (ccws{1…8}.ee.ntu.edu.tw) using the your account for the exercises. If the log in is successful, you should see the following Unix prompt:

```
-bash-3.00$
```

Find out about the current time by:

```
-bash-3.00$ date
```

4. Checking out about the existing files

Check out the files in the current directory by:

```
-bash-3.00$ ls
```

Create a file that contains your login time by:

```
-bash-3.00$ date > login-time.txt
```

Check whether there is a new file created in the directory by:

```
-bash-3.00$ ls
```

Check the content of the file by:

```
-bash-3.00$ cat login-time.txt
```

5. Helping yourself

You may find out how to use ls for more information about files by:

```
-bash-3.00$ man ls
```

From the output above, try if you can find the flag to show the files in long format.

```
-bash-3.00$ ls -l
```

6. Moving from directory to directory

Create a directory by:

```
-bash-3.00$ mkdir PA1
```
(rmdir deletes a directory)

Copy the login time file to the above created directory by:

```
-bash-3.00$ cp login-time.txt    PA1
```

Go to the above created directory by:

```
-bash-3.00$ cd PA1
```

Check whether the login time file is copied to the new directory by:

```
-bash-3.00$ ls -l    >    file-check.txt
```

Go back to the original directory by:

```
-bash-3.00$ cd ..
```

7. Renaming and removing

Rename the login time file in the original directory to tmp.txt by:

```
-bash-3.00$ mv login-time.txt    tmp.txt
```
(Directories can be renamed the same way.)

Remove the tmp.txt file by:

```
-bash-3.00$ rm tmp.txt
```

8. Logging out

Make sure you have created a directory PA1 and these two files login-time.txt and file-check.txt are in the directory. These will be your proof of completing the Practical Assignment #1.

And finally, simply log out by:

```
-bash-3.00$ logout
```

9. Online Unix Tutorials

If you are interested in learning more, there are plenty UNIX operating system tutorials around on the Web. Just google. You should find, for example, the UNIX Tutorial for Beginners at:

http://www.ee.surrey.ac.uk/Teaching/Unix/

Or this one at Utah Math:

http://www.math.utah.edu/lab/unix/unix-tutorial.html

10. Submit your PA1

Please follow the following instructions and upload the login-time.txt and file-check.txt to the class ftp server:

- Log in to 140 dot 112 dot 42 dot 157 at port 6621
- As user: introCN password: introCNtue234
- Go to the 'PA1' directory
- Create a subdirectory and name the subdirectory using your student ID, for example ‘b909010001’
- Put the file you need to submit in this directory
- Close the ftp connection