

CS 240 - Homework 1

Assigned: 1.23.17 (Monday)

Due: 1.30.17 (Monday), 4:00pm

The purpose of this assignment is to familiarize you with the basic tools you'll be using throughout the semester. Upon completing this assignment you will have used the basic UNIX/LINUX commands we covered in class, used a text editor, and written/executed your first C program.

As part of this assignment, you should be reading K&R chapter 1, Glass & Ables Ch. 3 (basic UNIX commands, covered in lecture 1).

Try the commands in UNIX as you read about them. Sit at a terminal to do this.

Get a UNIX account and a directory for this course

You can apply remotely by following the instructions here: <http://www.cs.umb.edu/sp/resources/other/faqs/#FAQ02>

You can also apply at a terminal in the UNIX lab (S-3-157, 3rd floor of the Science building).

If you run into trouble, ask an operator in the UNIX lab for help.

NOTE: There are often problems with the CS Dept. servers at the beginning of the semester. You should do this part of the assignment **immediately**.

Try out the UNIX commands we went over in class

Once you have your UNIX account set up and have successfully completed the apply process, experiment with the UNIX commands we covered in class. Your initial prompt should look something like:

```
username@itserver6:~$
```

```
username@itserver6:~$ pwd
```

(see the full name of your home directory)

```
username@itserver6:~$ ls -al
```

(see the contents of your home directory)

```
username@itserver6:~$ man ls
```

(see the manual page for ls)

The output of these commands may be overwhelming, but it is all explained in G&A, chapter 3.

One of the things you will find in your home directory is a link to a directory for your cs240 homework. A link is a type of file that points to another file (like a Windows shortcut or Mac alias). This link points to: `/courses/cs240/sum16/jmcurran/your_login_name`

```
username@itserver6:~$ cd cs240
```

(change your current working directory to your cs240 directory)

This is where you will save all your work for this class. Its permissions are set that I can read its contents, but no one else can. (The default UNIX file protection is to allow anyone to read anything.)

```
username@itserver6:~$ mkdir hw1
```

(create a folder for hw1 in your cs240 directory)

```
username@itserver6:~$ cd hw1
```

(use the cd command to go to the hw1 directory you just created)

```
username@itserver6:~$ cd ..
```

(use the cd command to go to the parent directory of your current working directory -- should put you back in cs240)

Create links

I will save any supplementary files needed for homework assignments in the following folder: `/courses/cs240/s16/jmcurran/GROUP`

You should create a link to this folder in your cs240 folder so you can access it easily:

```
$ ln -s /courses/cs240/s16/jmcurran/GROUP cs240_group
```

There are 4 parts to this command:

<code>ln</code>	the utility to create a link
<code>-s</code>	the option to specify "symbolic link"
<code>/courses/cs240/s17/jmcurran/GROUP</code>	the directory the link is associated with
<code>cs240_group</code>	the name you're giving to the link

Text editors

Familiarize yourself with a UNIX/LINUX text editor. There are two standard options, `vi` and `emacs`. It doesn't matter to me which one you use, but start learning how to use one or the other.

There are numerous guides online, and the G&A textbook contains an introduction to `vi`.

line numbers

Set up an initialization file for your editor of choice to display line numbers.

	emacs	vi
open init file	<code>\$ emacs .emacs</code>	<code>\$ vi exrc</code>
add this line	<code>(global-linum-mode t)</code>	<code>set nu</code>
save and close	<code>ctrl-x-s, ctrl-x-c</code>	<code>:x<Return></code>

Note: `Vi` has two modes: **command** and **insert**.
Press `i` to enter insert mode and enter text.
Press `escape` to return to command mode.

.forward

Get started by editing your email forward file.

This is a file in your home directory named `.forward`. Edit this file:

emacs	vi
<code>\$ emacs .forward</code>	<code>\$ vi .forward</code>

Once in the file, add a single line: an email address that you monitor frequently. Save and close the file, and then make sure the forwarding is working by sending an email to `your_login_name@cs.umb.edu` and making sure it is forwarded to the email address you saved in `.forward`.

Write and run a C program: hello.c

Write and run a C program named `hello.c`.

See **K&R § 1.1** for the text of this file.

Compile it to an executable file named `hello` using the `gcc` instructions from the Lecture 1 notes. Once compiled, you should be able to run it with the following result:

```
username@itserver6:~$ ./hello
```

```
Hello, world!
```

```
username@itserver6:~$
```

Create a directory in your cs240 folder called `hw1` (make sure it is exactly `hw1`, not `HW1`, not `homework1`, not `Hw1`) and save your `hello.c` file there.

Send me the following information

Once you have completed the above, I'd like you to send me an email with some information about yourself.

Send the email to:

`jmcurran@cs.umb.edu`

The subject of the email must be exactly:

`cs240, spring 2017, hw1`

The body of the email should contain 3 lines:

1. Your full name.
2. Your UNIX account user name.
3. The language your cs110 class was taught in.

Example body:

```
Jane Student  
js2017  
Python
```

I will use these emails to create the mailing list for the class. It is important that you set up email forwarding correctly or you will not receive email.