University of Waterloo
Second Year Computer Science
Assignment 0
Due 2001 Sep 21 at 1800

1 Introduction

The purpose of this assignment is to walk students who are new to Unix through the MFCF student environment used in second-year CS courses at UW. As well, it ensures that all students have completed certain administrative steps prior to starting work on their real assignments.

All students should complete this assignment as early as possible. If you have any difficulties, contact your tutor and get help sooner rather than later.

2 Getting Help from Tutors

Tutors will be available in MC 2037 from 1630–1830 Tuesday and Thursday on September 11, 13, 18, 20, 25 and 27. These will not be tutorials but will be opportunities to have questions answered in the lab.

Additionally, the regular Friday tutorials for CS 241 will be held in MC 2037 for the first three weeks of term. The very first one of these will cover this assignment. Nobody cares which tutorial section you attend. Tutorials start at 0930, 1030, 1130, 1230, 1330, 1430 and 1530. For these three weeks only, these will be joint tutorials for CS 234/241.

3 Obtaining an Account

Every student in every second year CS course has an MFCF student Unix environment account for the term. To obtain access to your account, visit the MFCF consultants in MC 3011, or Wendy Reibel in MC 3013C. They will initialize your account and give you a password. You must change your password to something you can remember but which is unguessable.

4 Learning to use Unix

MFCF (Math Faculty Computing Facility) has several web pages with information that will help you learn to use Unix. The page entitled "Getting started with Unix" at

`http://www.math.uwaterloo.ca/mfcf/consultants/firstweek/`

contains essential introductory information. You should read this page at home, at the library, or elsewhere where you already have browser access, and print out the first couple of sub-pages for reference when you get into the Unix lab. You might also want to print out the "Common Applications" sub-page because it tells you how to run a web browser such as Netscape on the Unix systems, which will allow you to access "Getting started with UNIX" and other information sources from the Unix labs.

Once you have worked through "Getting started with UNIX", going into as much detail as you need in order to understand what is going on, the "Introduction to X and Unix Tutorial" at

`http://www.math.uwaterloo.ca/mfcf/operations/Tutorial/`

is your next step. Read through this briefly so you know what is in it. Some of the material is duplicated with the "Getting started with UNIX" page. It is essential that you understand most of the material in both tutorials by the end of the second week of classes. Friday lab tutorials on May 11 will cover this material, but you should review it beforehand so the tutorial can proceed efficiently. Don't skimp on this—the most basic and frustrating problems that you are likely to encounter in your first term of using Unix result from not knowing the contents of these tutorials. So a couple of evenings spent in the lab now will save you many evenings of frustration later on.

5 Paying Lab Fees

All printing done on MFCF printers must be paid for. Even if you will not personally be printing anything, many of your CS assignments will require printing to be done by course staff. Each student has a CAS (Computer Accounting System) account managed by IST (Information Systems & Technology) that is used to pay for printing and dial-up connection services. Type the command

```
lpquota
```

to view the current balance of your CAS account. Whenever you print something or use the UW dial-up modems, this balance will decrease. You can deposit money to your CAS account at the CHIP, on the first floor of MC. If there are any problems with your account, please speak to the people in the CHIP. Usually, however, you can add money by transferring it from your WatCard at the station in the hall outside.

Some course-related printing of assignments is paid for by the CAS account of the course. This CAS account is funded by the lab fees paid by every student in the course. Type the command

```
lab_fees info
```

to see which courses have lab fees set. You must pay the amount indicated for all courses in which you are registered. For each course, type the command

`lab_fees pay` *course*

to pay your lab fees for that course. For example, type

```
lab_fees pay cs234
```

to pay your CS 234 lab fees.

6 Setting up your Account

In order to use certain software required by second year CS courses, some configuration changes need to be made to your account. These configuration changes are contained in the file `~isg/pub/bin/cs-setup`. To incorporate this file into your configuration, you need to edit the file `.cshrc` in your home directory. For example, if your userid was `jnsmith`, the file would be `/u/jnsmith/.cshrc`. If you're wondering why you can't see `.cshrc` when you use the `ls` command, you didn't do enough in the "Learning to use Unix" step above—go back and review it. We really mean it! Little things like this need to be cleared up now, not at midterm time.

Before editing `.cshrc`, make sure you understand what `init_home` is and how it works. If you edit your configuration file incorrectly, your account won't work. Note: the full path of this command is

```
/.software/local/.admin/bins/bin/init_home
```

which you will need if you really mangle your account.

Use the `cp` command to create a backup copy of your `.cshrc` file. Something like `old.cshrc` would be a good name.

Use Xemacs or vi or some other appropriate editor to open your `.cshrc` file. You must not use an office application like MS Word or something like Pico to edit this file. If you use an office application, the file won't be a text file when you're done with it. If you use Pico, some lines may get broken in half by the editor and your account won't operate properly.

Move down through `.cshrc` until you reach the lines which look like this:

```
## Set any other environment variables that are *always* needed here.
## Variables used only by interactive programs should be set in the
## interactive section, the last section in this file.
```

Insert a new line immediately after this block of three lines. On the new line, type this text:

```
source ~isg/pub/bin/cs-setup
```

Now save the file, quit your editor, and log out and back in again. Watch carefully for any error messages; there should not be any. You might want to use the `diff` command, which compares two files, to see what the differences are between `old.cshrc` and `.cshrc`. Ah, you say you didn't create a copy before you edited your configuration? You are living dangerously! We wish you the best of luck—you'll need it. The difference between these two files should be simply the addition of a single line—meaning the output of `diff` will be quite small.

7 Using pine

Several programs can be used to send and receive email on the MFCF Unix systems. We recommend `pine` because it is small, simple, and easy to use. Regardless of which mail program you decide to use, you should send yourself an email at your MFCF address to ensure that it works properly. Your email address (if your userid is `jnsmith`, which it isn't) is

```
jnsmith@student.math.uwaterloo.ca
```

We may send important information like marks or examination notices to your `student.math` email address. If we send it, you've read it, as far as we're concerned. So ensure that this email works by emailing yourself. If you want your email to go elsewhere, learn how to use `.forward` files.

8 Using the Web

Almost every CS course has a web page at

```
http://www.student.math.uwaterloo.ca/~csXXX/
```

where `XXX` is replaced by the course number. You should bookmark your CS course web pages as they contain important information. Any announcements posted to a CS course web page are assumed to be read by every student in the course, so it is important to visit these pages every so often.

9 Using the Course Newsgroup

Most CS courses have a course newsgroup, which should be linked from the course web page. The name of the group is `uw.cs.csXXX`, where `XXX` is replaced by the course number.

Please read the netiquette sections of the Unix tutorial before posting to course newsgroups. Frequently you may find newsgroups to be a useful source of information about assignments. You should subscribe to the newsgroups for each of the courses you are taking each term.

10 Reading about Policies

Read the pages linked off the "Policies" link of your course web page. Note especially the part that says essentially "DON'T CHEAT!!!" As well, familiarize yourself with what is available off the course web page and through the "Resources" links at the bottom of the course web page. The "Unix" link is likely to be especially useful during the first couple of weeks as you learn the new environment.

11 Using `submit` - (1% of your grade)

The last task in this preliminary assignment is to complete a trial submission using the electronic `submit` program. As with other commands, information is available about the `submit` program by using `man`. As well, you should have found some supplementary information on the Web in the previous section.

You will be submitting five files, named `a0p[12345].txt`. To learn what to put in these files, read the posting to the CS 234/241 newsgroups. Submit these files to CS 234 or CS 241 as appropriate. If you are registered in neither of these courses, you may still perform this submission to ensure you know how to do it, but it doesn't actually count for credit.