Assignment 1

Overview

The objectives of this assignment are to get you to

- login to your CS network account,

- make sure that it is enabled and ready to use,

- make sure that you remember your username and password, and

- learn how to submit future assignments.

It also forces you to use the Computer Science Department network. You must complete this assignment before its **deadline**, which is ***Tuesday, January 29, at midnight***, *(i.e. by 11:59 PM, EST)*.

Instructions

1. Login to `eniac` using your given username and password. If you cannot do this, then this is the first problem you have to solve. Everyone in the class has an account on the network and therefore has a username and password. If you are new to Hunter College and have not been given this account, you need to get one as soon as possible. Contact Tom Walter by sending email to `cstechsp@hunter.cuny.edu` if you cannot login. *Do not send email to any other address*!

2. If you login successfully, then *ssh* to any `cslab` host. The instructions below assume that you have logged into `cslab8`.

3. Edit your `.bashrc` file, located in your ***home directory***, using any text editor of your choice. If you do not know what this means, then somehow you have made it into a third-level course in C++ programming in our department without ever learning the most basic concept of UNIX, and it is up to you to learn what the `.bashrc` file is and what a home directory is. If this is the case, read a good book about it, such as the one at `http://linuxcommand.org/tlcl.php`. Navigate to the very last line in your file and append the following lines ***exactly***. Do this exactly and do not copy and paste from a PDF as this may introduce non-ASCII characters into the file. Typing it out will make you learn it better. Do not use tab characters. Use spaces instead:

```
# Define pathmunge to avoid duplications and put a new path in
# a suitable position in the PATH variable
pathmunge () {
    # usage: pathmunge pathname  [after]
    if ! echo $PATH | /bin/egrep -q "(^|:)$1($|:)" ; then
        # the directory to be added is not already in PATH. Eureka!!!
        if [ "$2" = "after" ] ; then
            PATH=$PATH:$1
        else
            PATH=$1:$PATH
        fi
    fi
}
```

Lines that start with # are comments. The remaining lines define a `bash` function named `pathmunge`. In English, to *munge* is to transform or mix up data. This function expects a directory pathname as its first argument and the optional word "`after`" as its second argument. `pathmunge()` checks if the directory is already in the `PATH` variable and if it is, it does nothing. If it is not, then it either prepends the directory to `PATH` or appends to `PATH` depending on whether the word "`after`" is supplied. For example, if the current value of PATH is the string "`/bin:/usr/bin:/usr/local/bin:`", and I type

```
pathmunge ~/bin  after
```

then the new value of `PATH` will be the string "`/bin:/usr/bin:/usr/local/bin:~/bin`".

4. After adding the above text to the file, append the following lines below it:

```
# Modify PATH variable to include path to cs335_sw/bin directory
if [ -d /data/biocs/b/student.accounts/cs335_sw/bin ] ; then
    pathmunge /data/biocs/b/student.accounts/cs335_sw/bin  after
    export PATH
fi
```

This uses `pathmunge()` to add the directory /data/biocs/b/student.accounts/cs335_sw/bin to your `PATH` variable.

5. Save the `.bashrc` file and then source it using either of the two equivalent commands:

```
. ~/.bashrc
source ~/.bashrc
```

6. Now make sure your `.bashrc` file contains nothing you do not want me to see. I have no idea what that might be, but just in case, make a copy of it and delete any private stuff. I have written and installed a command named `submit_cs335_hwk` on our CS network server (`biocs`) in such a way that it can be run on all `cslab` hosts. It is in the directory /data/biocs/b/student.accounts/cs335_sw/bin. You must use this command to deposit a copy of your `.bashrc` file into the correct directory with the right name and permissions. *In general you will use this command to submit all assignments given in this class.* The `submit_cs335_hwk` command requires two arguments: the number of the assignment (1 in this case) and the pathname of your homework file. Thus, to submit this assignment, assuming that your current working directory is your home directory, you will type

```
submit_cs335_hwk 1  .bashrc
```

The program will copy your `.bashrc` file into the directory

```
/data/biocs/b/student.accounts/cs335_sw/hwks/hwk1/
```

and if it is successful, it will display the message, "`File hwk1_username successfully submitted.`" where *username* is your username. You will not be able to read this file, nor will anyone else except for me. But you can double-check that the command succeeded by typing the command

```
ls -l /data/biocs/b/student.accounts/cs335_sw/hwks/hwk1
```

and making sure you see a non-empty file named `hwk1_username` whose date of last modification is the time at which you ran the command. The size of that file should be exactly the same as the size of your `.bashrc` file.

Grading Rubric

This assignment is worth 2% of your final grade. You will receive full credit if the file you submit has exactly the lines shown in the above instructions and has been submitted by the assignment deadline, which is Tuesday, January 29 at 11:59PM, EST. If the lines do not match, the script that checks them will fail and you will receive at most 1%. If it is not submitted by the deadline, you get 0.