SE 2XA3 (2019/20, Term I) Practice lab -- lab section L03

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The first objective of this lab practice is to get to know the safety aspects of working in a lab

Please, read the lab safety manual. It can be found in the help section, or the help section can be accessed via this link from here directly.

The second objective is to get to know the course website environment, simple manipulation of files, and uploading (submitting) a file, as well as transferring files between the workstation and ***moore***.

1. Using ***notepad*** on the lab workstation (or using any text editor on your laptop), create a text file named **test** with your name in it.
2. In case the name of the file you created is **test.txt**, rename the file to **test** . The lab workstations are running Windows. For Windows, it is a default option to hide the file extensions (i.e. *.txt), so you must change that option for the folder where the created file is or for all folders to show the extensions (google up "displaying the file extensions in Windows 7").
3. Upload (submit) the file by using the button **Submissions** above.
4. Check the submitted file.
5. Repeat the submission and checking to see how the "versioning" works: all submissions are preserved, they are versioned (e.g. if you submit it three times, you will see: **test.version0**, **test.version1**, and **test**) the latest submission is without version.
6. **Your files cannot be stored permanently on the lab workstation** -- they are there only until you log off the lab workstation. On the other hand, files in your account on ***moore*** can be stored permanently there.
7. Using **Ssh** connect form the lab workstation to your account on ***moore*** (or use any terminal software on your laptop you are familiar with). You might want to check the info how to use **Ssh** -- it can be found in the help section, or accessed via this link from here. If you are using your laptop, you are on your own with respect to help with the terminal.
8. Transfer the file **test** to your account on ***moore*** using the file transfer feature of **Ssh** (or, if you are using your laptop, you have to use the FTP=file transfer protocol the terminal software provides).
9. On ***moore***, make a copy of the file there by running a LINUX command **cp test test2** (you may want to find more about the **cp** command by executing **man cp**)
10. Then transfer the file **test2** from your account on ***moore*** to the workstation or your laptop.
11. Check that the file had really been transferred to the workstation/laptop.
12. On the workstation, open the file with ***notepad*** to check that it has the same contents as the original file **test** (or any text editior on your laptop).
13. Now try submit the file **test2** via the course website (using the **Submissions** button above); it should not work as the name of the file is wrong even though its format is right.
14. Download to your workstation/laptop this binary file called **test.bin** from here. Now try submit it via the course website. It will not work as the name is wrong.
15. Now rename the file **test.bin** on your workstation/laptop to **test** and try to submit it again via the course website. Though this time the name is correct, the submission will not work as the format of the file is wrong (i.e. it is not an ASCII text file, it is a binary file).
16. On your workstation/laptop, create a text file named **test3** using ***notepad*** (or any text editior) its content is not important.
    Then transfer the file to your ***moore*** account.

17. Using **man dos2unix** command on ***moore***, find out how to use the utility **dos2unix**. Transform the file **test3** to a UNIX text file using **dos2unix test3**
18. On your workstation/laptop, create a text file named **2xa3submit** using ***notepad*** (or any text editor). It has to contain the following lines:

```
#!/bin/bash
course=se2xa3
cd
homedir=`pwd`
homedir=${homedir:5}
chmod u+rwx ../$homedir
chmod og-rw ../$homedir
chmod og+x ../$homedir
# now we have the right permissions
#####################################################################
/nfs/u30/franek/public_html/courses/se2xa3/labs/2xa3submit $1 $2 $3
```

    Transfer it to your ***moore*** account. Transform the dos text file you just transferred to a UNIX text file by executing **dos2unix 2xa3submit** . Or create the file **2xa3submit** using ***nano*** on ***moore*** directly. Note that you can copy+paste from this webpage directly the lines to the ***notepad*** or ***nano*** if you do not want to re-type it. The file **2xa3submit** must be in your home directory.
19. Make the file **2xa3submit** executable by executing command **chmod u+x 2xa3submit** .
20. Now it is time to execute the new command **2xa3submit** . Unless you already changed your **PATH** in the .bashrc or .bashprofile to include the current directory, you have to execute the command by **./2xa3submit** . You should see the message **usage -- 2xa3submit <student no> <lab><file-to-be-submitted>** It indicates how the command **2xa3submit** should be used: first is the name of the command (i.e. **2xa3submit**), then at least one space and them comes your student number (no need for the leading 0's if any), then at least one space and the lab/project designation come (for this lab, it is **lab0**), and then at least one space and the name of the file to be submitted. For instance, if your student number is 000123456, you would type **./2xa3submit 123456 lab0 test3**
21. Now try submit the file **test3** using **2xa3submit** . It should ask you for your password for this course (the one you use for the course website), and after you have typed it in (make sure nobody observes you typing it in), then you should see a message of a successful submission.
22. Now use the website to check your submission.
23. Thus, there are two ways you can submit work when required: either through the website from your workstation/laptop, or directly from your account on ***moore*** using **2xa3submit** .
24. If you want (and you should), you can modify the **.bashrc** file and add "current directory" to the **PATH** . Use **nano .bashrc** . It opens the file **.bashrc** in the screen editor **nano** . If need be, see help section for the basic info on how to use **nano** or access it via this link from here. Add at the bottom of the file a line
    export PATH=$PATH:.
    note that the line ends with **:** and **.** since **.** means "current directory". Save the file and close the editor. In order to activate the changes you just made, execute **source .bashrc**
25. If you modified your **PATH**, you can than execute the submission with command **2xa3submit 123456 lab0 test3** rather than with **./2xa3submit 123456 lab0 test3** , (i.e. you can omit the **./** at the beginning). In this setup, the submission must always be executed from your home directory.