

# CSC3320 System Level Programming Lab

## Assignment 2 - Part 1 (In-lab)

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Purpose: Learn use the man utility to get help on using other Unix utilities. Practice with the basic utilities for managing files and directories in a terminal.

### Notes:

Due same day.

Write a report by answering the questions and attaching the required screenshots in part B and upload the report (called Lab2\_FirstNameLastName.pdf or Lab2\_FirstNameLastName.doc) to Google Classroom no later than 11:59 pm on the date you are taking this lab session.

Connect to snowball by typing the following command and press "Enter". `ssh CampusID@snowball.cs.gsu.edu`

Part A: Try to use the man utility.

The man utility can provide the on-line copies of the original UNIX documentation for the other utilities. In the manual page, the first part is the functionality of a utility, the second part is the synopsis, the third part is the description and lists different features of a utility with different options. Then please follow the steps to learn some options provided by cat.

(1) Check the manual page cat by typing the command below and press "Enter". `man cat`

(2) The terminal only displays one window of the manual page. You can scan through the whole manual page by press "f" or SPACE to forward one window, and "b" to backward one window. Or you can press "h" to find out more commands to scan through the manual page.

(3) Check the description for option `-n`. You may find the description as

below:

```
-n, --number
    number all output lines
```

(4) Check the description for option **-s**. You may find the description as below:

```
-s, --squeeze-blank
    suppress repeated empty output lines
```

(5) Quit the manual page by press "q"

Part B: Unix basic commands on managing the files and directories.

(1) Make sure that you are connected to snowball successfully. Then go to your home directory by typing the following command, followed by pressing "Enter". `cd ~`

(2) Display current working directory:

- Question A): What is the working directory? Please write down the full path

```
C:\Users\amandapaka2>ssh amandapaka2@snowball.cs.gsu.edu
Microsoft Windows [Version 10.0.19041.1165]
(c) Microsoft Corporation. All rights reserved.

C:\Users\amandapaka2>ssh amandapaka2@snowball.cs.gsu.edu
The authenticity of host 'snowball.cs.gsu.edu (131.96.155.217)' can't be established.
ECDSA key fingerprint is SHA256:Rir34vs3KIWl5Nhu2Y0B2QaSq6shzVrxQ/AQ/veW1NY.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'snowball.cs.gsu.edu,131.96.155.217' (ECDSA) to the list of known hosts.
amandapaka2@snowball.cs.gsu.edu's password:
Last login: Tue Aug 31 16:26:21 2021 from c-24-125-100-183.hsd1.ga.comcast.net
+
|  GSU Computer Science
|  Instructional Server
|  SNOWBALL.cs.gsu.edu
+
[amandapaka2@gsuad.gsu.edu@snowball ~]$ man cat
[amandapaka2@gsuad.gsu.edu@snowball ~]$ [amandapaka2@gsuad.gsu.edu@snowball ~]$ man pwd
[amandapaka2@gsuad.gsu.edu@snowball ~]$ [amandapaka2@gsuad.gsu.edu@snowball ~]$ cd
[amandapaka2@gsuad.gsu.edu@snowball ~]$ cd -
/home/amandapaka2
[amandapaka2@gsuad.gsu.edu@snowball ~]$ pwd
/home/amandapaka2
```

`pwd : /home/amandapaka2`

(3) List the content in current working directory:

`Ls: there are no files in here`

```
[amandapaka2@gsuad.gsu.edu@snowball ~]$ ls
[amandapaka2@gsuad.gsu.edu@snowball ~]$
[amandapaka2@gsuad.gsu.edu@snowball ~]$
[amandapaka2@gsuad.gsu.edu@snowball ~]$
[amandapaka2@gsuad.gsu.edu@snowball ~]$
[amandapaka2@gsuad.gsu.edu@snowball ~]$ ls
[amandapaka2@gsuad.gsu.edu@snowball ~]$
```

(4) Create a new folder "csc3320" in your home directory:

`mkdir csc3320`

```
[amandapaka2@gsuad.gsu.edu@snowball ~]$ mkdir csc3320
[amandapaka2@gsuad.gsu.edu@snowball ~]$ ls
csc3320
[amandapaka2@gsuad.gsu.edu@snowball ~]$
```

(5) Repeat step (3).

```
[amandapaka2@gsuad.gsu.edu@snowball ~]$ mkdir csc3320
[amandapaka2@gsuad.gsu.edu@snowball ~]$ ls
csc3320
[amandapaka2@gsuad.gsu.edu@snowball ~]$
```

- Question B): What is the difference in the output compared to the output from step (3) ? Describe what the difference is.

The difference is that in step 3, when I typed in "ls" there were no files when I entered ls. But now there is a file "csc3320" in ls, which is in blue font since I created a new directory.

(6) Navigate to "csc3320":

`cd csc3320`

```
[amandapaka2@gsuad.gsu.edu@snowball ~]$ cd csc3320
[amandapaka2@gsuad.gsu.edu@snowball csc3320]$
```

(7) Display current working directory.

```
[amandapaka2@gsuad.gsu.edu@snowball csc3320]$ pwd
/home/amandapaka2/csc3320
```

- Question C): Which command should be typed?

We need to type in the “pwd” command to display it.

(8) Create a new folder called "lab2" in csc3320.

```
[amandapaka2@gsuad.gsu.edu@snowball csc3320]$ mkdir lab2
[amandapaka2@gsuad.gsu.edu@snowball csc3320]$ ls
lab2
[amandapaka2@gsuad.gsu.edu@snowball csc3320]$
```

- Question D): Which command should be typed?

We need to type in “mkdir” command.

(9) Go to the newly created "lab2" folder.

```
[amandapaka2@gsuad.gsu.edu@snowball csc3320]$ cd lab2/
[amandapaka2@gsuad.gsu.edu@snowball lab2]$
```

- Question E): Which command should be typed?

We should use “cd” command to go to the newly typed folder.

(10) Create a new file called "myLab2.txt" and put your own name in this file by typing the command below:

```
cat > myLab2.txt <Enter>
My name is FirstName LastName <Enter>
<Ctrl-D>
```

Question F): There is a special character ">" between "cat" and "myLab1.txt". What does this character do? And why we need to press "Ctrl-D" at the end of input?

The special character allows the user to type into the file- send in input data through the keyboard. You need to press “Ctrl D” at the end of the input because that tells the computer that you are done entering the input. It marks the end of user input.

```
[amandapaka2@gsuad.gsu.edu@snowball lab2]$ cat > myLab2.txt
My name is Aparna Mandapaka
[amandapaka2@gsuad.gsu.edu@snowball lab2]$
```

(11) Display the content in "myLab2.txt" with line numbers by typing the command below and press "Enter".

```
cat -n myLab2.txt
```

- Question G): Attach a screenshot of the output.

```
[amandapaka2@gsuad.gsu.edu@snowball lab2]$ cat -n myLab2.txt
 1 My name is Aparna Mandapaka
[amandapaka2@gsuad.gsu.edu@snowball lab2]$
```

(13) Go to your home directory using the absolute path by typing the command below and press "Enter".

```
cd /home/amandapaka2
```

- Question H): Then issue the command pwd again. Attach a screenshot of the output.

```
[amandapaka2@gsuad.gsu.edu@snowball lab2]$ cd /home/amandapaka2
[amandapaka2@gsuad.gsu.edu@snowball ~]$ pwd
/home/amandapaka2
[amandapaka2@gsuad.gsu.edu@snowball ~]$
```