

## CIS 90 - Fall 2012 - TEST 3 - 30 points

Timed Test (2 hours 50 minutes)

### Honor Code:

This test is open book, open notes, and open computer. **HOWEVER, you must work alone. You may not share answers. You may not receive or give assistance to others.**

### Procedure:

You should do this test on **Sun-Hwa-II** and record your answers in a **test03** text file. When finished you will transfer this file to Opus and submit using the instructions at the end of the test.

Record your answers to the test questions below in this file. So I can grade your test, be sure and include a line containing "Answer xx" (where xx is the question number) immediately above each of your answers. Your *test03* file should look like:

```
CIS 90 Test 3
Name: your name here
```

```
Answer 1
your answer here
Answer 2
your answer here
Answer 3
your answer here
< snipped >
```

For your convenience there is *test03.template* in the depot directory on Opus. To copy it to your Sun-Hwa-II home directory use:

```
scp xxxxxx90@opus:../depot/test03.template test03
(where xxxxxx90 is your Opus username)
```

### Tips:

- When asked to enter a command as an answer, make sure the command works without errors! Your instructor will do this when necessary to verify if a command is correct.
- When asked to enter a pathname as an answer, be sure to check your pathname with the **ls** command. Your instructor will do this when necessary to verify if a pathname is correct.
- When asked to enter output of a command or contents of a file as an answer make sure it is accurate and complete. Use copy & paste or redirection so what is reflected in your answer is 100% accurate.

### Highlighted text:

Any **highlighted text such as this** indicates important changes from the practice test.

### Note to instructor:

setup-romeo-juliet for T3

## Part 1 - Navigate and manage the UNIX/Linux file system

Let's start by logging into your account on Sun-Hwa-II and locating a file (name unknown) in your home directory that contains your unique signal number. Every student will get a unique signal number for use in later steps of the test. **Note, the signal numbers, files and locations differ from the practice test!**

1. What command would search your home directory (including sub-directories) on Sun-Hwa-II for a file containing the word "signal"? Record the command you used in *test03*. [2 points]

*If you are unable to locate the file containing your signal and are willing to pass up the points, contact the instructor who will show you where it is.*

2. What is the absolute pathname to the signal file you just found? Record this absolute pathname in *test03*. [1 point]
3. What are the contents of the signal file you just found? Record the contents in your *test03* file using copy & paste or redirection. [1 point]
4. Who is the owner of the file you just found? Record the owner in *test03*. [1 point]

*You must now search Sun-Hwa-II for a Shakespeare file created just for you. To do this you must ask the "Delphi oracle" for the name of the file to search for. Run the **delphi** script and send the resulting process your unique signal number.*

5. After you run **delphi**, what command should be run to find your delphi PID (Process ID)? Record this command in *test03*. [1 point]
6. What command did you use to send your unique signal number (from step 3 above) to your delphi process? Record this command in *test03*. [1 point]

*In a few seconds after receiving your signal the Delphi process will print the name of your Shakespeare file. It will even tell you the branch of the UNIX file tree it is located on.*

7. Use this information to locate exactly where your Shakespeare file is on Sun-Hwa-II. What command did you use to locate the file? Record the command you used to locate your Shakespeare file in *test03*. [2 points]

*If you are unable to locate your Shakespeare file and are willing to pass up the points, contact the instructor who will show you where it is.*

8. What are the contents of the Shakespeare file you just found? Record your answer by appending the exact contents of this Shakespeare file to your *test03*. After appending, be sure to move it to the correct section of *test03*. [1 point]
9. Now your favorite question on a different file in the UNIX file tree. What is the absolute pathname of the */etc/passwd* file on Sun-Hwa-II? Record this pathname in *test03*. [1 point]

## Part 2 – Automate and schedule tasks

**Note on running scripts on Sun-Hwa-II:** Unlike your Opus account you cannot run scripts by typing the script's name on the command line. Instead, on Sun-Hwa-II, you must specify an absolute path to your script. For example to run a *mysignal* script use:

```
./mysignal
```

**Note on Sun-Hwa-II email:** The email experience on Sun-Hwa-II differs from Opus. Every CIS 90 student has a cislabs (Windows) domain account on Sun-Hwa-II. Because Windows domain usernames contain a backslash they must be escaped when used as an email address. For example, to send an email to Benji use:

```
mail cislabs\\simben90
```

Reading your mail on Sun-Hwa-II also differs from Opus. When the system delivers mail to your directory in `/var/spool/mail`, the backslash is stripped from the directory name. For Benji to read his mail he must use:

```
mail -f /var/spool/mail/CISLABsimben90
```

You will need to do the same thing to read your own mail (just replace *simben90* with your username).

Note, you cannot send mail to yourself using mail the `$LOGNAME` variable. Instead use:

```
MLOGNAME=cislabs\\${LOGNAME#CISLAB\\}  
mail $MLOGNAME
```

10. Create and test a four line script named *mysignal* that:

- sets a variable named **file** to the absolute pathname of the signal file you found for Question 1 of this test.
- outputs the current locale's **12-hour clock time (e.g., 11:11:04 PM)**. Note this must be dynamic and change automatically when your script is run on a different day.
- outputs a long listing of your signal file using your **file** variable.
- outputs the contents of your signal file using your **file** variable.
- has the correct permissions on it so it may be executed by anyone.

What are the contents of your *mysignal* script? Record the contents of your script to your *test03* file. [6 points]

11. How would you run your *mysignal* script in the background? Record the command you would use in your *test03* file. [1 point]

12. Create and test a two line script named *reminder* that:

- sets a variable named **msg** to **"Relax and enjoy the holidays after finals"**

- mails yourself the contents of the **msg** variable with a subject of “Reminder”.
- has the correct permissions on it so it may be executed.

What are the contents of your *reminder* script? Record the contents to your *test03* file. [4 points]

13. Schedule your *reminder* script to run **at teatime**. What single-line command would do this? Record the command you used in your *test03* file. [1 point]
14. Schedule your *reminder* script to run at 1AM the next day. What single-line command would do this? Record the command you used in your *test03* file. [1 point]
15. What command shows all your future jobs, like *reminder*, scheduled to run in the future? Record the output of this command in your *test03* file. [1 point]
16. Create a *bin/* directory in your home directory. Move both scripts to this new directory. See if you can now run your *mysignal* and *reminder* scripts, from anywhere on Sun-Hwa-II, just by just typing their **mysignal** and **reminder** names (without the *./* prefix or a relative path to your *bin* directory). Why or why not? Record your explanation in your *test03* file [1 point]

### Part 3 – Customize the shell environment

17. On Sun-Hwa-II, permanently customize your shell environment as follows:
  - Make your prompt the same as the one on Opus (show the current directory followed by a space, a \$ and one more space)
  - Fix the MAIL variable so it is set to your correct directory in /var/spool/mail. This will allow you to read your mail without having to use the -f option.
  - Create a variable named MLOGNAME and set it so that you will be able to send yourself a message using mail \$MLOGNAME.

What are the contents of your modified *.bash\_profile* now? Record the contents of your *.bash\_profile* file to your *test03* file. [4 points]

### Extra credit

18. How can you modify your prompt above to be the **color green**? Record the command to do this in your *test03* file. [1 points]
19. What command could you use to print your *mysignal* file to the default printer on Sun-Hwa-II? Record the command you used to do this in *test03*. [1 point]
20. What is **the name of the default printer on Sun-Hwa-II**? Record the printer name in your *test03* file. [1 point]

### Review your answers

Run the **checkt3** script to review the answers in your *test03* file.

## **Submittal**

To submit your test, first copy it from Sun-Hwa-II to your home directory on Opus:

```
scp test03 xxxxxx90@opus:
```

On Opus, make it private (optional), then copy it to the *turnin* directory:

```
chmod 600 test03
```

```
cp test03 ~rsimms/turnin/test03.$LOGNAME
```

*Make sure you have correctly submitted your work from Sun-Hwa-II to the Opus turnin directory by viewing your file in the turnin directory on Opus.*