

Midterm Review

COP 3344 Introduction to UNIX
Fall 2007

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Announcements

- Assignment 2 can be submitted until 10 pm, Oct 10, without a late penalty
 - Assignments submitted after that will get grades of 0
- Midterm will be closed book, closed notes, closed laptops, closed cell phones, ...
 - But I will give you a sheet with brief notes on some commands
 - This will be available on Blackboard by Thursday
 - Please don't bring a copy of this sheet -- I will provide it to you
 - The midterm will **NOT** be multiple choice
 - *You need to know the material, and not just recognize correct answers*
- **No quiz this week**

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Commands That You Need to Know

- Commands that you should know
 - cat
 - cd
 - cmp
 - cp
 - diff
 - echo
 - gzip
 - logout
 - ls
 - man
 - mkdir
 - more
 - mv
 - pwd
- pwd
- rm
- rmdir
- tar
- ssh
- stftp
- Commands that you should be able to use, on seeing a hint
 - cut
 - expr
 - read
 - set (in sh)
 - sort
 - head
 - tail
 - wc
- Other things you should know
 - Assigning to shell variables and using shell variables
 - Command line arguments
 - I/O redirection
 - Wildcards
 - Quoting rules
 - Shell scripts
 - File permissions

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Midterm Topics

- File system: ~ 40 %
- I/O redirection: ~ 10 %
- Wildcards and quoting rules: ~ 10 %
- Shell scripts: ~ 30 %
- Utilities and other things: ~ 10 %
- **The above are just approximate figures for what I plan to do**
 - You must learn all the material
 - I may change the weight for the different components
 - Many questions, such as shell scripts, may cover multiple topics

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File System Examples

```
--rw----- ... file1
--rw----- ... file2
-rwx----- ... my700
drwxr--r-- Sep 28 15:01 temp
```

- Answer the following questions, assuming that your current working directory contains the files shown above
 - Which of the above are regular files, and which are directories?
 - Which of the above files can the owner execute?
 - Can others perform `ls` to read the files in the directory `temp`, if they have execute permission on the entire path up to the current working directory?
 - Which command will you use to output the full path for the current working directory?
 - Give a command to create a subdirectory called `dir1` in the current directory.
 - Give a command to create a subdirectory called `dir2` in the parent directory.
 - Give a command to remove the directory `temp`, assuming it is empty.

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Other Examples

- Which command will you use to login remotely to another machine in a secure manner?
- Give a command that will list all files that end in a digit between 3 and 5?
- Give a command that will append the output of `ls` to a file named `file1`.
- Give a command that will compare files `file1` and `file2`, and provide you information on whether they differ.
- Using pipes, show how you can output the first ten lines of `file1` in sorted order.

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Shell Scripts

- Some useful things to know
 - Use pipes to connect multiple commands
 - Use command options to get the output in a desired format, when possible
 - Assign to a variable when you want to store some partial result temporarily
 - Use `read` to read input
 - Use `expr` to perform arithmetic
 - Use `cut` to extract portions of the output from each line
 - Use `head` and `tail` to extract selected lines from a file or from the output of another command
 - Use `$1`, `$2`, etc to refer to command line arguments
 - Use `echo` to output things that cannot directly be output from a command
 - Use ``` to run a command and assign its output to a variable
 - Be creative!

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Shell Script Example

- Write a shell script which will be run as `./mkexec filename`
 - This should make the `filename` executable for the user, and not change any other permissions
 - It should, then, show the long listing for that file

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```
mkexec
#!/bin/sh
chmod u+x $1
ls -l $1
```

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