

Lesson Module Status

- Slides - draft
- Flash cards – done
- properties – done
- 1st minute quiz – done
- Web Calendar summary – done
- Web book pages - none
- Commands – done
- Lab tested – done

- Backup headset charged -
- CCC Confer wall paper - done
- Slides & Lab uploaded -
- Test uploaded -



Dennis



Sean



Christopher



Francisco



Rich

Instructor: **Rich Simms**
Dial-in: **888-450-4821**
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Salena



Abd



Sarah



Astitow



Mike D.



Alex



Christine



Steven



Richie



Nathan



Tony



James G.



Sergio



Anthony



Fernando



Miguel



Lars



Jennifer



Rudy



Laura P.



Nick



Juan



Jacob



Andrew



Luke



Saulius

Online Class Students



Edtson



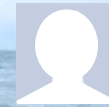
James B.



Liz



Casady



Jason



Dale



Aaron



Steve



Matt



Songul



Stephanie



Victor



Tanya



Mike P.



Adriana



Laura S.



Olivia



Janelle

Email me (risimms@cabrillo.edu) a relatively current photo of your face for 3 points extra credit



- [] Has the phone bridge been added?
- [] Is recording on?
- [] Does the phone bridge have the mike?
- [] Share slides, putty (rsimms, simmsben, roddyduk), Chrome
- [] Disable spelling on PowerPoint

Managing Files

Objectives	Agenda
<ul style="list-style-type: none">• Be able to create, copy, move, remove and link files	<ul style="list-style-type: none">• Questions• Test Prep• Housekeeping• Managing files• Wrap up• Test

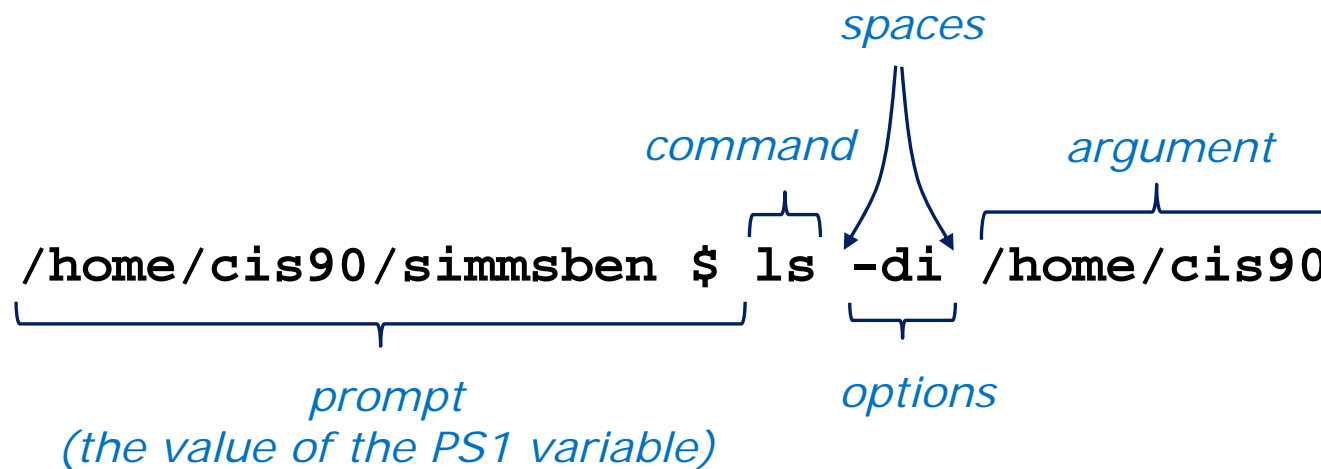
Questions

Previous material and assignment

1. Questions on previous material or labs?
2. Questions on the practice test?

Command Syntax Review (Test Prep)

Command Line Syntax Review



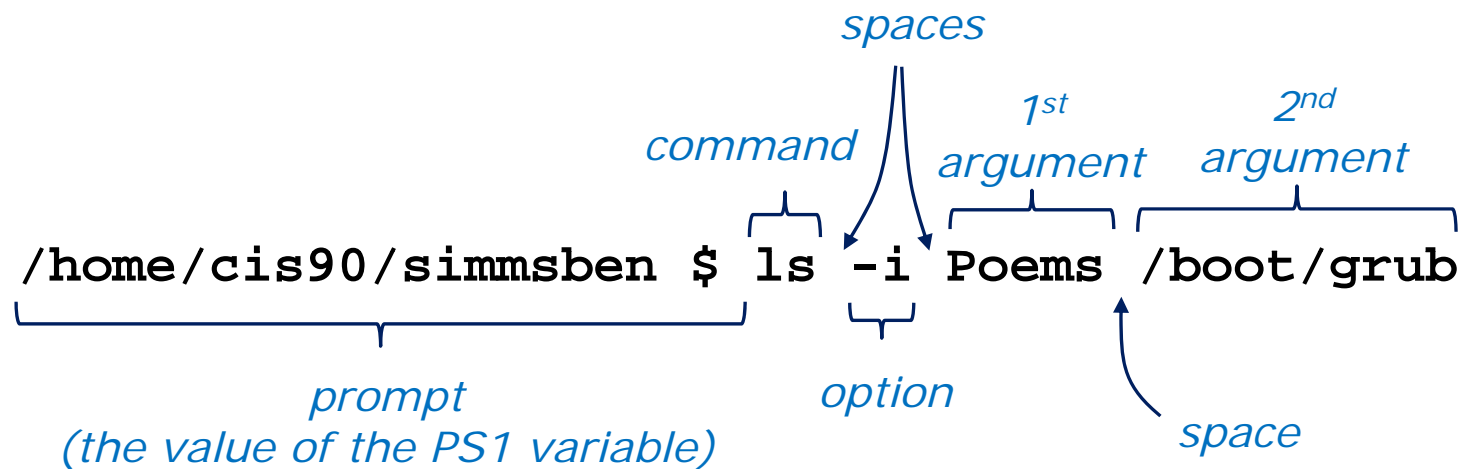
Parsing the command line above yields:

One command: **ls**

Two options: **d** and **i**

One argument: **/home/cis90** (an absolute pathname to a directory)

Command Line Syntax Review



Parsing the command line above yields:

One command: **ls**

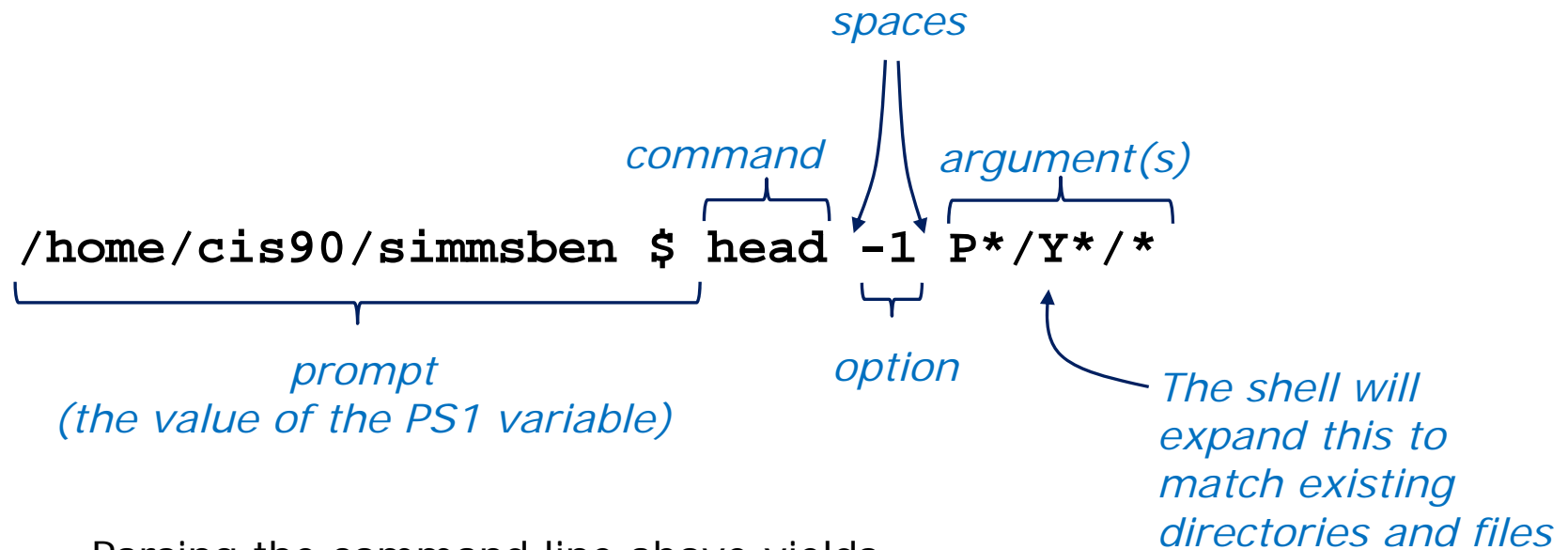
One options: **i**

Two arguments:

Poems (a relative pathname to a directory)

/boot/group (an absolute pathname to a directory)

Command Line Syntax Review



Parsing the command line above yields:

One command: **head**

One option: **1**

Three arguments:

Poems/Yeats/mooncat (a relative pathname to a file)

Poems/Yeats/old (a relative pathname to a file)

Poems/Yeats/whitebirds (a relative pathname to a file)



Lab 4

Review

(Test Prep)

Lab 4 - Q2

2) Relative to your home directory, what is the pathname of the tiger file in the Blake subdirectory?

Correct answer: **Poems/Blake/tiger**

OK answer: `./Poems/Blake/tiger`

Incorrect answers:

tiger

/Poems/Blake/tiger

/Blake

simmsben/Poems/Blake/tiger

ls /Poems/Blake/tiger *(no commands in pathnames)*

fails the ls test

```
/home/cis90/roddyduk $ ls Poems/Blake/tiger
Poems/Blake/tiger
/home/cis90/roddyduk $
```

Lab 4 - Q5

5) Are any of your hidden files directories? If so, which ones?

Correct answers: `., .., .mozilla, .ssh, .gconf, or .gconfd`

Incorrect answers:

Poems/

Lab2.0/

Lab2.1

Hidden/

bin

Miscellaneous

.bash_history

.bash_profile

.emacs

.plan

Not hidden

(hidden files have names that start with .)

Not directories

Lab 4 - Q5

Files that are **directories** (1st column=d) AND **hidden** (filenames start with .)

```
/home/cis90/roddyduk $ ls -la
```

```
total 460
```

```
drwxr-xr-x  9 roddyduk cis90  4096 Sep 23 18:07 .
drwxr-x--- 59 rsimms   cis90  4096 Sep 26 15:11 ..
-rw-----  1 roddyduk cis90  10953 Oct  3 15:56 .bash_history
-rw-----  1 roddyduk cis90    24 Jul 20 2001 .bash_logout
-rw-----  1 roddyduk cis90   354 Sep 17 2003 .bash_profile
-rw-----  1 roddyduk cis90   146 Jan 18 2004 .bashrc
-rw-r--r--  2 roddyduk cis90  10576 Jul 20 2001 bigfile
drwxr-xr-x  2 roddyduk cis90  4096 Sep 11 2005 bin
-rw-----  1 roddyduk cis90  3723 Sep 20 06:08 dead.letter
-rw-r--r--  1 roddyduk cis90   515 Sep  6 14:08 .emacs
-rw-r--r--  1 roddyduk cis90    0 Jul 20 2001 empty
d-----  2 roddyduk cis90  4096 Feb  1 2002 Hidden
-r-----  1 roddyduk staff   143 Sep  9 14:38 lab01.graded
-r-----  1 roddyduk staff  1042 Sep 16 19:10 lab02.graded
-r-----  1 roddyduk staff 13834 Sep 23 18:07 lab03.graded
drwxr-xr-x  2 roddyduk cis90  4096 Feb 17 2001 Lab2.0
drwxr-xr-x  3 roddyduk cis90  4096 Feb 17 2001 Lab2.1
-rw-----  1 roddyduk cis90    35 Sep 26 14:14 .lessht
-rw-r--r--  1 roddyduk cis90  1044 Jul 20 2001 letter
```

Lab 4 - Q5

Files that are **directories** (1st column=d) AND **hidden** (filenames start with .)

```
-rw-r--r--  1 roddyduk cis90      156 Sep 18 07:41 log
-rw-----  1 roddyduk cis90 110556 Sep 22 05:33 mbox
drwxr-xr-x  2 roddyduk cis90    4096 Sep 11  2005 Miscellaneous
-rw-r--r--  1 roddyduk cis90     759 Jun  6  2002 mission
drwxr-xr-x  4 roddyduk cis90    4096 Sep  6 14:08 .mozilla
-rw-r--r--  1 roddyduk cis90      40 Jul 20  2001 .plan
drwxr-xr-x  5 roddyduk cis90    4096 Jan 18  2004 Poems
-rw-r--r--  1 roddyduk cis90    1074 Aug 26  2003 proposal1
-rw-r--r--  1 roddyduk cis90    2175 Jul 20  2001 proposal2
-rw-r--r--  1 roddyduk cis90    2054 Sep 14  2003 proposal3
-rw-r--r--  1 roddyduk cis90    1580 Nov 16  2004 small_town
-rw-r--r--  1 roddyduk cis90     485 Aug 26  2003 spellk
-rw-r--r--  1 roddyduk cis90     250 Jul 20  2001 text.err
-rw-r--r--  1 roddyduk cis90     231 Jul 20  2001 text.fxd
-rwxr-xr-x  1 roddyduk cis90     509 Jun  6  2002 timecal
-rw-rw-r--  1 roddyduk cis90   33697 Sep 21 22:54 uhistory
-rw-----  1 roddyduk cis90     682 Sep 18 08:16 .viminfo
-rw-r--r--  1 roddyduk cis90     352 Jul 20  2001 what_am_i
/home/cis90/roddyduk $
```

Lab 4 - Q9

9) Who is the owner of your home directory?

Correct answers: **your username, e.g. simmsben, roddyduk, etc.**

Incorrect answers:

rsimms

Cis 90

mikki

cis90

```
/home/cis90/roddyduk $ cd
/home/cis90/roddyduk $ ls -ld
drwxr-xr-x 9 roddyduk cis90 4096 Sep 23 18:07 .
```

owner → ← *group*

```
/home/cis90/roddyduk $ ls -ld /home/cis90/roddyduk/
drwxr-xr-x 9 roddyduk cis90 4096 Sep 23 18:07 /home/cis90/roddyduk/
```

owner → ← *group*

Lab 4 - Q9

```

/home/cis90/simmsben $ ls -l /home/cis90
total 456
drwxr-xr-x  2 rsimms  staff 4096 Sep 30 14:08 answers
drwxr-xr-x  9 antiden  cis90 4096 Sep 30 15:24 antiden
drwxr-xr-x  9 beltredt  cis90 4096 Sep 30 15:24 beltredt
drwxr-x---  2 rsimms  cis90 4096 Sep 18 13:01 bin
drwxr-xr-x  9 birmijam  cis90 4096 Sep 30 15:24 birmijam
drwxr-xr-x  9 blacksea  cis90 4096 Sep 15 16:02 blacksea
drwxr-xr-x 10 botoschr  cis90 4096 Sep 30 15:24 botoschr
drwxr-xr-x  9 brownbri  cis90 4096 Sep 11  2005 brownbri
drwxr-xr-x  9 brownliz  cis90 4096 Sep 30 15:24 brownliz
drwxr-xr-x  9 cardefra  cis90 4096 Sep 30 15:24 cardefra
drwxr-xr-x  9 castrsal  cis90 4096 Sep 11  2005 castrsal
drwxr-xr-x  9 dahlicas  cis90 4096 Sep 30 22:05 dahlicas
drwxr-xr-x  9 dakkaabd  cis90 4096 Sep 23 18:07 dakkaabd
drwxr-xr-x  9 daviesar  cis90 4096 Sep 30 15:24 daviesar
drwxr-xr-x 10 dawadast  cis90 4096 Oct  4 18:23 dawadast
< snipped >

```

owners

groups

directories

Lab 4 - Q10

10) What's the name of the largest text file in your home directory?

Correct answer: **varies by student**

```
/home/cis90/roddyduk $ ls -ls
total 364
-rw----- 1 roddyduk cis90 110556 Sep 22 05:33 mbox
-rw-rw-r-- 1 roddyduk cis90  33697 Sep 21 22:54 uhistory
-r----- 1 roddyduk staff  13834 Sep 23 18:07 lab03.graded
-rw-r--r-- 2 roddyduk cis90  10576 Jul 20  2001 bigfile
drwxr-xr-x 2 roddyduk cis90   4096 Sep 11  2005 bin
d----- 2 roddyduk cis90   4096 Feb  1  2002 Hidden
drwxr-xr-x 2 roddyduk cis90   4096 Feb 17  2001 Lab2.0
drwxr-xr-x 3 roddyduk cis90   4096 Feb 17  2001 Lab2.1
< snipped >
```

The biggest text file for roddyduk is mbox at 110,556 bytes

Lab 4 - Q15

15) Which files in your home directory should you not view with the cat or more commands?

Correct answer: **what_am_i**

```
/home/cis90/roddyduk $ file *
bigfile:          ISO-8859 English text, with overstriking
bin:              directory
dead.letter:     ASCII mail text
empty:           empty
Hidden:          directory
lab01.graded:    ASCII text
lab02.graded:    ASCII English text
lab03.graded:    ASCII mail text
Lab2.0:          directory
Lab2.1:          directory
letter:          ASCII English text
log:             ASCII text
```

*All these are text files
or directories*

Lab 4 - Q15

```
mbox:          ASCII mail text, with very long lines, with escape
sequences
Miscellaneous: directory
mission:       ASCII English text
Poems:         directory
proposal1:     ASCII English text
proposal2:     ASCII English text
proposal3:     ASCII English text
small_town:    ASCII English text
spellk:        ASCII English text
text.err:      ASCII text
text.fxd:      ASCII text
timecal:       shell archive or script for antique kernel text
uhistory:      ASCII mail text
```

*These are all text files
except for what_am_i which
contains binary data*

```
what_am_i:     data
```

```
/home/cis90/roddyduk $ cat what_am_i
```

```
H/./>/..#mailrc!.profile+HiddenLab3.1.1%Lab3.1.2f*PoemsReferen
ce8bigfile$bi!mailfoldersa_very_long_fi)lenameerrors/fruita#g
reeting,lettermystery^proposal1,proposal29timecal/home/cis90/ro
ddyduk $
```

*Binary/data files contain unprintable characters that spew garbage on the screen. If your terminal gets messed up try the **reset** command.*

Lab 4 - Q17

17) What ls command-line allows you to see the permissions of your home directory while you are in your home directory?

Correct answer: `ls -ld` or `ls -l ..` or `ls /home/cis90/$LOGNAME`

```
/home/cis90/roddyduk $ ls -ld  
drwxr-xr-x 9 roddyduk cis90 4096 Sep 23 18:07 .
```

```
/home/cis90/roddyduk $ ls -ld /home/cis90/roddyduk/  
drwxr-xr-x 9 roddyduk cis90 4096 Sep 23 18:07 /home/cis90/roddyduk/  
/home/cis90/roddyduk $
```

```
/home/cis90/roddyduk $ ls -ld /home/cis90/$LOGNAME  
drwxr-xr-x 9 roddyduk cis90 4096 Sep 23 18:07 /home/cis90/roddyduk
```

 *permissions*

Lab 4 - Q17

```
/home/cis90/roddyduk $ ls -l ..  
total 456  
drwxr-xr-x  2 rsimms  staff 4096 Sep 30 14:08 answers  
drwxr-xr-x  9 antiden  cis90 4096 Sep 30 15:24 antiden  
< snipped >  
drwxr-xr-x  9 rochajua  cis90 4096 Sep 29 14:06 rochajua  
drwxr-xr-x  9 roddyduk  cis90 4096 Sep 23 18:07 roddyduk  
drwxr-xr-x 14 salinjac  cis90 4096 Oct  4 12:04 salinjac  
drwxr-xr-x 12 simmsben  cis90 4096 Oct  3 15:24 simmsben  
drwxr-xr-x  9 srecklau  cis90 4096 Sep 30 15:24 srecklau  
drwxr-xr-x 10 valadand  cis90 4096 Sep 30 15:24 valadand  
drwxr-xr-x  9 velasliv  cis90 4096 Sep 30 15:24 velasliv  
drwxr-xr-x  9 wattsluk  cis90 4096 Sep 30 15:24 wattsluk  
drwxr-xr-x  9 woodjan   cis90 4096 Sep 23 18:07 woodjan  
drwxr-xr-x  9 zilissau  cis90 4096 Sep 30 15:24 zilissau  
/home/cis90/roddyduk $
```

Lab 4 - Q19

19) From your home directory what is the relative path to sonnet1?

Correct answer: **Poems/Shakespeare/sonnet1**

Incorrect answers:

ls -a Poems/Shakespeare/sonnet1

cd Poems/Shakespear/ls

../../../../shakespeare/sonnet1

Poems/Shakespeare /sonnet1

ls Poems/Shakespeare/sonnet1

../Shakespeare../Poems../husemat../cis90../home

Poems/Shakespeare

/home/cis90/ojedavic/Poems/Shakespeare/sonnet1

/Poems/Shakespeare/

Always check your pathname by using it as an argument to the ls command

```
/home/cis90/roddyduk $ ls Poems/Shakespeare/sonnet1
```

```
Poems/Shakespeare/sonnet1
```

Lab 4 - Q24/25

24) What file in the Miscellaneous directory is a symbolic link to another file?

25) What is the inode number of the file being linked to?

Correct answer: **varies by student**

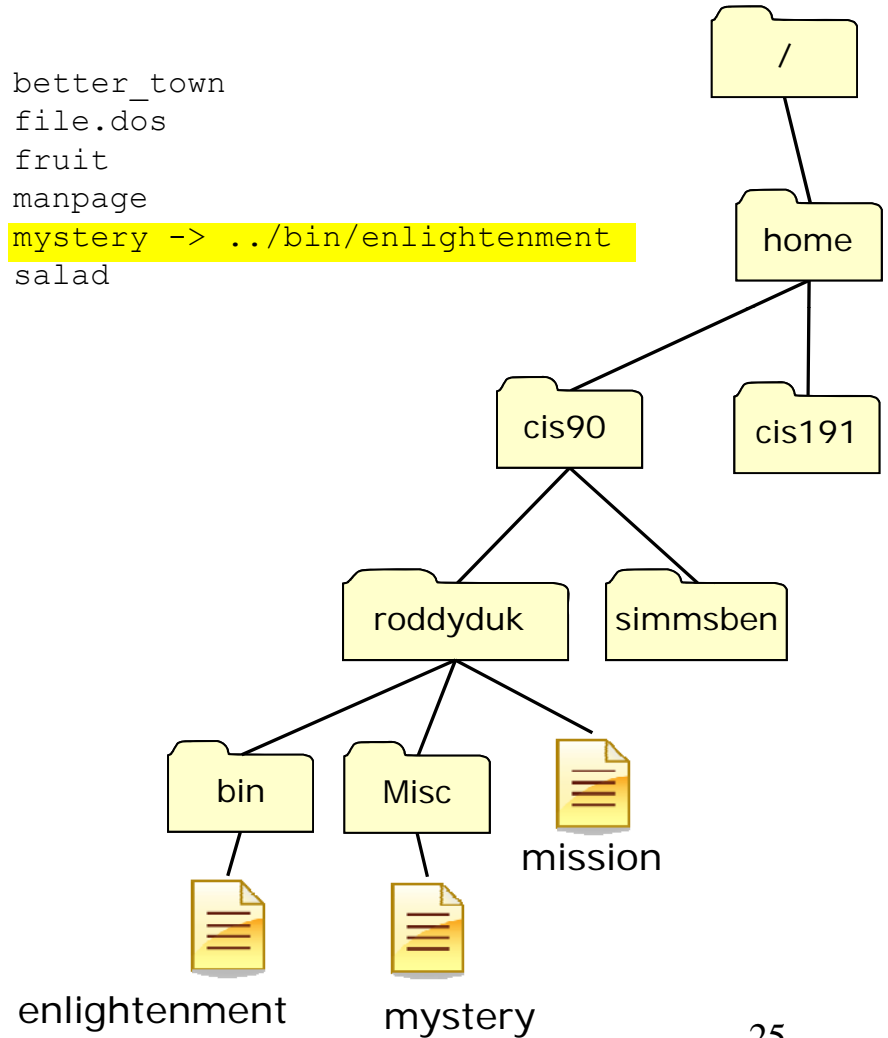
```
/home/cis90/roddyduk $ ls -l Miscellaneous/
total 52
-rw-r--r-- 1 roddyduk cis90 1382 Feb  1  2002 better_town
-rw-r--r-- 1 roddyduk cis90  148 Jul  20  2001 file.dos
-rw-r--r-- 1 roddyduk cis90   78 Oct  26  2004 fruit
-rw-r--r-- 2 roddyduk cis90 10576 Jul  20  2001 manpage
lrwxrwxrwx 1 roddyduk cis90   20 Sep  9 06:03 mystery -> ../bin/enlightenment
-rw-r--r-- 1 roddyduk cis90   78 Apr  17  2004 salad
/home/cis90/roddyduk $ ls -li bin/enlightenment
2425572 bin/enlightenment
/home/cis90/roddyduk $
```


Lab 4 - Q24/25

```

/home/cis90/roddyduk $ ls -l Miscellaneous/
total 52
-rw-r--r-- 1 roddyduk cis90 1382 Feb 1 2002 better_town
-rw-r--r-- 1 roddyduk cis90 148 Jul 20 2001 file.dos
-rw-r--r-- 1 roddyduk cis90 78 Oct 26 2004 fruit
-rw-r--r-- 2 roddyduk cis90 10576 Jul 20 2001 manpage
lrwxrwxrwx 1 roddyduk cis90 20 Sep 9 06:03 mystery -> ../bin/enlightenment
-rw-r--r-- 1 roddyduk cis90 78 Apr 17 2004 salad
/home/cis90/roddyduk $ ls -l bin/enlightenment
2425572 bin/enlightenment
/home/cis90/roddyduk $

```



Lab 4 - Extra Credit

24) With what command can you list only the hidden files of your home directory?

```

/home/cis90/simmsben $ echo .*
. .. .bash_history .bash_logout .bash_profile .bashrc .emacs .gconf .gconfd
.lessht .mozilla .plan .ssh .viminfo
/home/cis90/simmsben $ ls -d .*
. .bash_history .bash_profile .emacs .gconfd .mozilla .ssh
.. .bash_logout .bashrc .gconf .lessht .plan .viminfo
/home/cis90/simmsben $ ls -a | egrep '^\.
.
..
.bash_history
.bash_logout
.bash_profile
.bashrc
.emacs
.gconf
.gconfd
.lessht
.mozilla
.plan
.ssh
.viminfo
/home/cis90/simmsben $

```

Practice Test

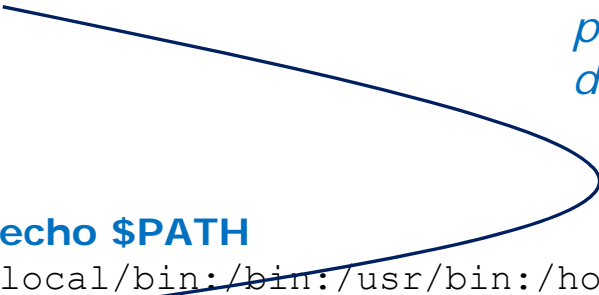
Practice Test 1 - Q8

Q8) Is the directory named `.` in your path?

Correct answer: **yes**

Use ***echo \$PATH*** to see your path which will contain directories separated by ***:***'s

```
/home/cis90/simmsben $ echo $PATH  
/usr/kerberos/bin:/usr/local/bin:/bin:/usr/bin:/home/cis90/simmsben/../../bin:/home/cis90/simmsben/bin:.  
/home/cis90/simmsben $
```



The directories, and the order they are searched on this path are:

1. */usr/kerberos/bin*
2. */usr/local/bin*
3. */bin*
4. */usr/bin*
5. */home/cis90/simmsben/../../bin*
6. */home/cis90/simmsben/bin*
7. *.*

Practice Test 1 - QX3

QX3) What is the relative path from your home directory to the less command?

Correct answer: `../../usr/bin/less`

```
/home/cis90/simmsben $ type less  
less is /usr/bin/less  
/home/cis90/simmsben $
```

Practice Test 1 - QX3

```

/usr/bin $ cd Start in home directory
/home/cis90/simmsben $ ls Use ls to view what's in the directory
bigfile      Hidden      letter      mylist      small_town  uhistory
bin          lab01.graded  log         Poems       spellk      what_am_i
class       lab03.graded  mbox        proposal1   text.err
dead.letter  Lab2.0       Miscellaneous proposal2   text.fxd
empty       Lab2.1       mission     proposal3   timecal
/home/cis90/simmsben $ ls ../ Use up arrow to load previous command and add next directory
answers     brownliz    depot       guest       martiant    parrijen    roddyduk    zilissau
antiden     cardefra   derriale    hamiljas    menafer     pennitan    salinjac
beltredt    castrsal   dingechr    henrydal    messison    perezrud    simmsben
bin         dahlicas   enriqste    hernaar     millehom    pirkllau    srecklau
birmijam    dakkaabd   fouric      hrdinste    mottste     pitzemik    valadand
blacksea    daviesar   galbrnat    husemat     ojedavic    plastadr    velasliv
botoschr    dawadast   garciton    joossam     orozcmig    redmanic    wattsluk
brownbri    delfimik   garibjam    komicser    palmilar    rochajua    woodjan
/home/cis90/simmsben $ ls ../../ Use up arrow to load previous command and add next directory
backup      cis191     cis193     gerlinde    jimg        noah        ryan
cis172     cis192     cis90      guest       mikki       rsimms      turnin
/home/cis90/simmsben $ ls ../../../../ Use up arrow to load previous command and add next directory
bin  dev  home  lost+found  misc  net  proc  sbin      srv  tftpboot  u  var
boot  etc  lib  media      mnt  opt  root  selinux  sys  tmp      usr
/home/cis90/simmsben $

```

Practice Test 1 - QX3

```
/home/cis90/simmsben $ ls ../../../../usr
bin  games  kerberos  libexec  sbin  src  X11R6
etc  include lib      local   share  tmp
```

Use up arrow to load previous command and add next directory

```
/home/cis90/simmsben $ ls ../../../../usr/bin
[
411toppm          nslookup
a2p               nspr-config
a2ps              nss-config
                  nsupdate
< skipped >
lddlibc4         tree
leaftoppm        troff
less             tset
lessecho         tsort
lesskey          ttmkfsdir
< skipped >
notify-send      znew
nroff            zsoelim
nsgmls
```

Use up arrow to load previous command and add next directory

```
/home/cis90/simmsben $ ls ../../../../usr/bin/less
../../../../usr/bin/less
```

Use up arrow to load previous command and add file name

This is the relative path to the less command and the answer to QX3!

Descending down the file tree to the less command file

Practice Test 1 - Q13

Q13) Starting in /u and descending down subfolders, what are the names of the two files in the last and deepest folder?

Correct answer: **dorothy toto**

```

/home/cis90/simmsben $ cd /u
/u $ ls
krb money named.conf notes ntab ntp r update
/u $ ls -F
krb money named.conf notes ntab ntp r/ update
/u $ ls -l
total 60
-rw-r--r-- 1 root root 2281 Dec 9 2009 krb
-rw-r--r-- 1 root root 400 Dec 9 2009 money
-rw-r--r-- 1 root root 1051 Dec 9 2009 named.conf
-rw-r--r-- 1 root root 0 Dec 9 2009 notes
-rw-r--r-- 1 root root 242 Dec 9 2009 ntab
-rw-r--r-- 1 root root 2794 Dec 9 2009 ntp
drwxr-xr-x 3 root root 4096 Dec 9 2009 r
-rw-r--r-- 1 root root 149 Dec 9 2009 update
/u $ cd r
/u/r $ ls
far

```

Use the cd command to start in /u

To descend, we must find directories to descend into. There is a directory named r so lets begin the descent!

Start the descent down with the cd command

Practice Test 1 - Q13

```
/u/r $ cd far
/u/r/far $ ls
away
/u/r/far $ cd away
/u/r/far/away $ ls
in
/u/r/far/away $ cd in
/u/r/far/away/in $ ls
the
/u/r/far/away/in $ cd the
/u/r/far/away/in/the $ ls
land
/u/r/far/away/in/the $ cd land
/u/r/far/away/in/the/land $ ls
of
/u/r/far/away/in/the/land $ cd of
/u/r/far/away/in/the/land/of $ ls
oz
/u/r/far/away/in/the/land/of $ cd oz
/u/r/far/away/in/the/land/of/oz $ ls
dorothy toto
```

*Use the **cd** and **ls** commands to work your way down the file tree till you get to the bottom*

Here are the two files in the deepest and last folder and the answer to Q13!



Housekeeping

1. Grades page

- Do you know your code name? email me if you don't.
- Grading option - students who are not turning in any assignments should contact me!

2. /home/cis90/answers - check this directory on Opus for answers to completed labs.

Code Name	Grading Choice	Quizzes & Tests												Forum										Labs										Final	Extra	Total	Grade
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	T1	T2	T3	F1	F2	F3	F4	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	Project	Credit							
Max Points		3	3	3	3	3	3	3	3	3	3	3	3	3	20	20	20	20	30	30	30	30	30	30	30	30	30	30	60	90	560						
adelaida	Grade	1	3												20				29	30	36	30															
elatar	Grade	3	3	1											0				26	29	24																
benroth	Grade	3	3												0				6	16	32																
enboms	Grade	3	3												9																						
erador	Grade	3	3	3	3										8				20	24	15																
erwen	Grade	3	3	3											20				30	30	36	34							3								
balrog	Grade	3	3												20				28	21																	
berlman	Grade	3	3	3	0										20				25	26	26	25							3								
benegond	Grade														0				25	30	30																
berethor	Grade	3	3												12				24	4	24	32															
bilbo	Grade														20				30	26																	
bombadil	Grade	0	3	3											20				24	22	34																
carc	Grade	3	3	3	3										0				24	28	28																
celeborn	Grade	3													0				22																		
galadriel	Grade	3	3	3	3										20				30	25	18	25							4								
gandalf	Grade	3	3	3	3										20				28	23	36	30							3								
denethor	Grade	2	3	3											20				24	30	25																
durin	Grade														8				26	23	32	18							3								
thrain	Grade	2	1	3	3										20				30	23	34	0							3								
alfred	Grade	3	3	3	3										20				28	30	34	34															
roamer	Grade	3	3	3											20				23	36	24																
ecwyn	Grade	2	1	3											20				24	22	6	13							3								
frudo	Grade	3	2	1	3										20				25	24	26	22							5								
gandalf	Grade	3	3	3	3										20				6	36	34	33															

```

/home/cis90/simmsben $ ls -l /home/cis90/answers/
total 64
-rw-r--r-- 1 rsimms cis90 173 Sep 9 14:43 lab01
-rw-r--r-- 1 rsimms cis90 1096 Sep 16 17:03 lab02
-rw-r--r-- 1 rsimms cis90 33699 Sep 30 14:08 lab03
-rw-r--r-- 1 rsimms cis90 506 Sep 30 14:06 lab04
/home/cis90/simmsben $

```

Managing Files

Managing the UNIX/Linux File System

Objectives:

- Name the three elements of a Unix file, and where each is stored.
- Be able to manage the files in your home directory using:

mkdir
cp
mv
rmdir
rm
ln

UNIX Files

The three elements of a file

```
/home/cis90/simmsben/Poems $ ls  
ant Blake nursery Shakespeare twister Yeats
```

```
/home/cis90/simmsben/Poems $ ls -l twister  
-rw-r--r-- 1 simmsben cis90 151 Jul 20 2001 twister
```

```
/home/cis90/simmsben/Poems $ cat twister
```

```
A tutor who tooted the flute,  
tried to tutor two tooters to toot.  
Said the two to the tutor,  
"is it harder to toot? Or to  
tutor two tooters to toot?"
```

name

+

inode

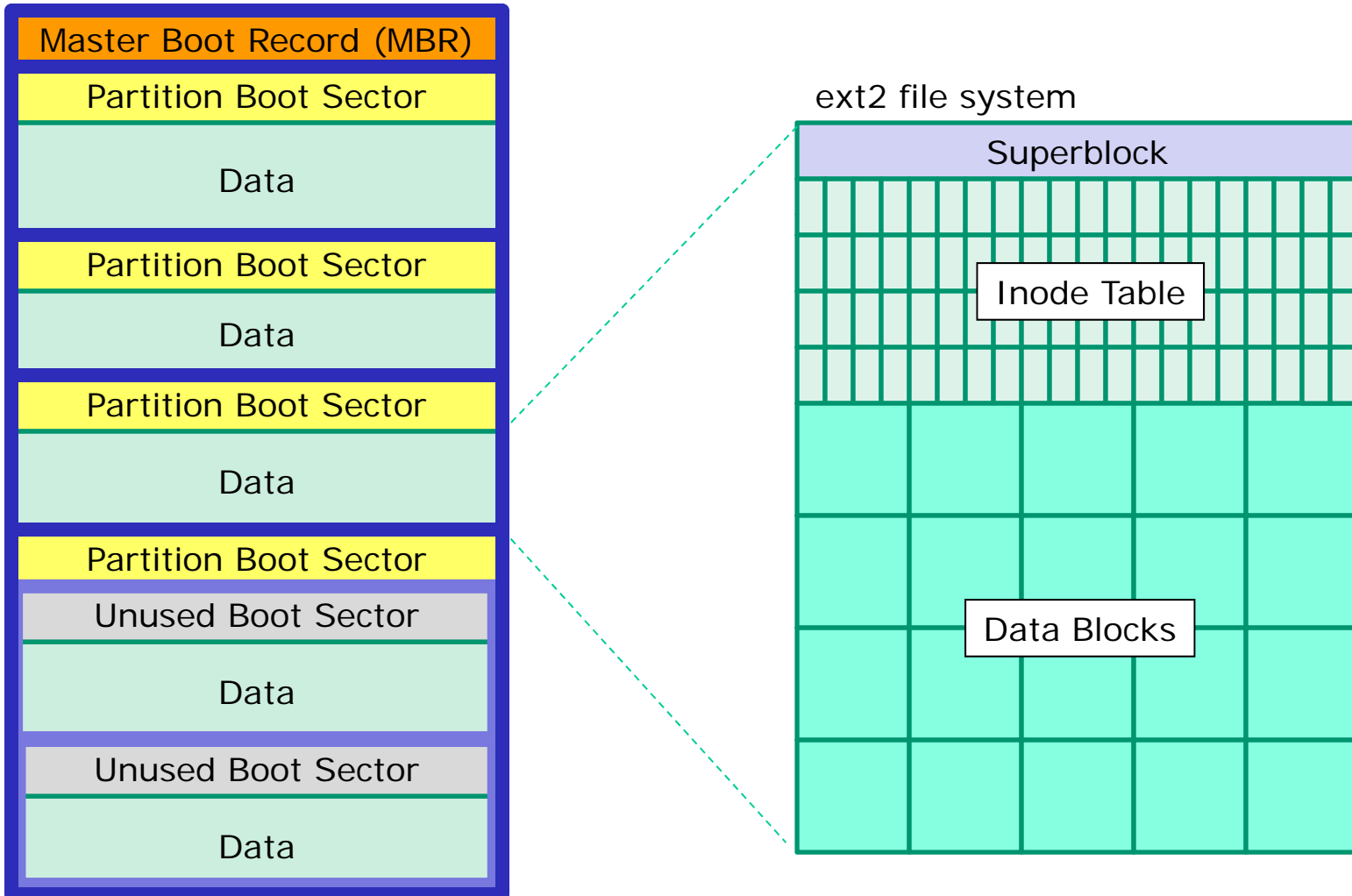
+

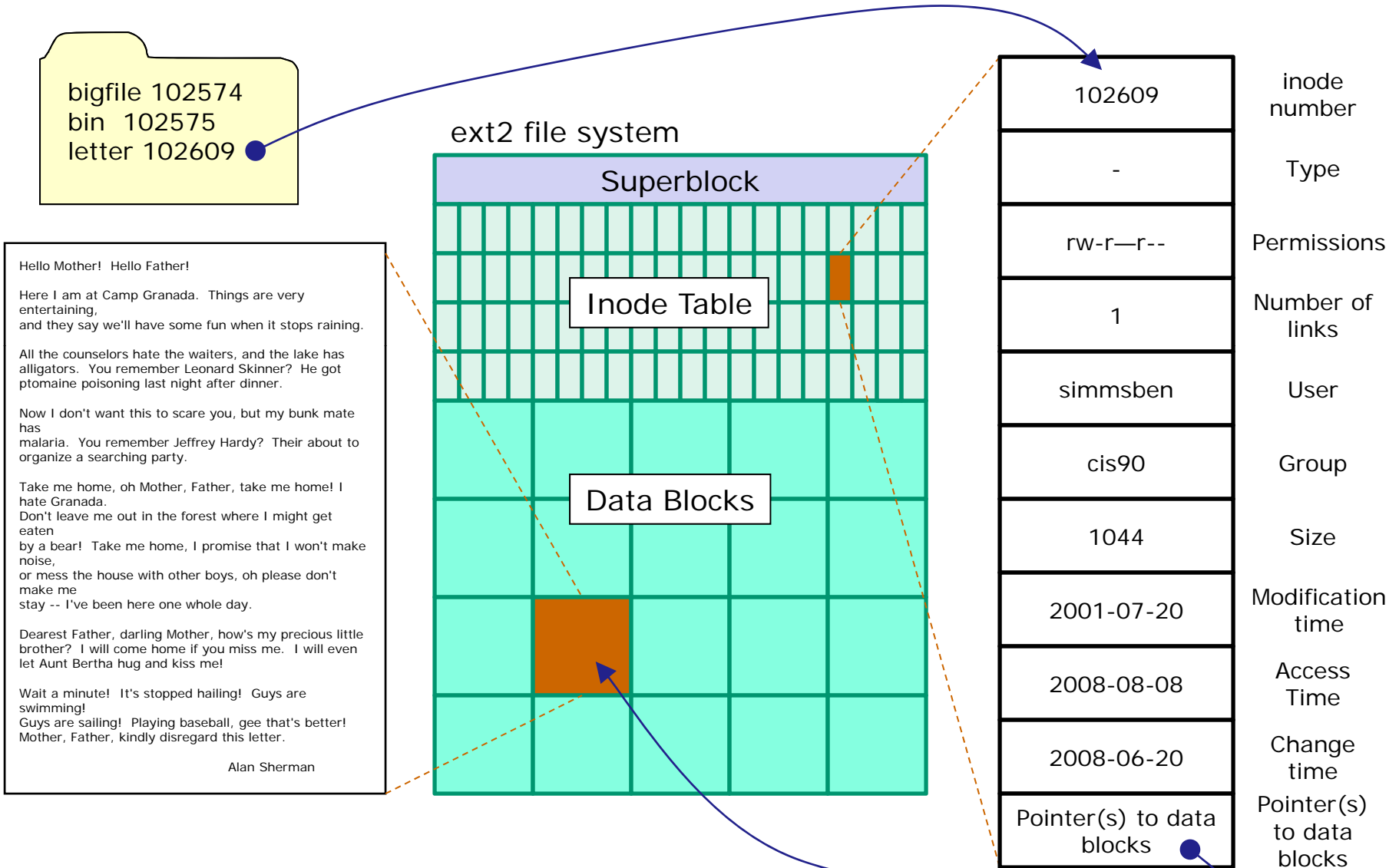
data



File Systems

Linux





```
[simmsben@opus ~]$ls -il letter
102609 -rw-r--r-- 1 simmsben cis90 1044 Jul 20 2001 letter
```


Create

Managing the UNIX/Linux File System

Creating

Commands:

touch

- creates an empty ordinary file(s), or if the file already exists, it updates the time stamp.

mkdir

- creates an empty directory(s)
- options: -p (to create nested directories)

echo "string" > new file

- Creates or overwrites a text file

Managing the UNIX/Linux File System

Creating

Commands:

touch

- creates an empty ordinary file(s), or if the file already exists, it updates the time stamp.

A new file, named sawyer is created in the current working directory

```
/home/cis90/simmsben $ ls -l sawyer
ls: sawyer: No such file or directory
/home/cis90/simmsben $ touch sawyer
/home/cis90/simmsben $ ls -l sawyer
-rw-rw-r-- 1 simmsben cis90 0 Mar 18 06:34 sawyer
/home/cis90/simmsben $
```

An empty file 

Managing the UNIX/Linux File System

Creating

Commands:

touch

- creates empty ordinary file(s), or if the file(s) already exist, the time stamp(s) are updated.

The Last Modified timestamp for sawyer is updated

```

/home/cis90/simmsben $ ls -l sawyer
-rw-rw-r-- 1 simmsben cis90 0 Mar 18 06:34 sawyer
/home/cis90/simmsben $ touch sawyer
/home/cis90/simmsben $ ls -l sawyer
-rw-rw-r-- 1 simmsben cis90 0 Mar 18 06:40 sawyer
/home/cis90/simmsben $
  
```

Last modified

Managing the UNIX/Linux File System

Creating

Commands:

mkdir

- creates empty directory(ies)
- options: -p

Create a new directory named island

```
/home/cis90/simmsben $ ls -l island  
ls: island: No such file or directory  
/home/cis90/simmsben $ mkdir island  
/home/cis90/simmsben $ ls -ld island  
drwxrwxr-x 2 simmsben cis90 4096 Mar 18 06:43 island
```

d option used to list information about the directory itself rather than its contents

file type is directory

Managing the UNIX/Linux File System

Creating

Commands:

`mkdir`

- creates empty directory(ies)
- options: `-p`

Create a new directory named `ghana` in a new directory named `africa`

```
/home/cis90/simmsben $ mkdir africa/ghana
```

```
mkdir: cannot create directory `africa/ghana': No  
such file or directory
```

```
/home/cis90/simmsben $ mkdir -p africa/ghana
```

```
/home/cis90/simmsben $ ls africa
```

```
ghana
```

```
/home/cis90/simmsben $
```

Need to use the `p` option for creating multiple new nested directories

Managing the UNIX/Linux File System

Creating

Commands:

echo "string" > new file

- Creates or overwrites a text file

Creating a file named accra and adding some text to it

```
/home/cis90/simmsben $ cd africa
/home/cis90/simmsben/africa $ ls
ghana
/home/cis90/simmsben/africa $ cd ghana
/home/cis90/simmsben/africa/ghana $ echo Population 1,658,937 > accra
/home/cis90/simmsben/africa/ghana $ cat accra
Population 1,658,937
```

*Output of the echo command is redirected
from the screen to a file named accra*



Managing the UNIX/Linux File System

Creating

Commands:

Be careful!



echo "string" > new file

- Creates or overwrites a text file

```
/home/cis90/simmsben/africa/ghana $ cat accra
Population 1,658,937
/home/cis90/simmsben/africa/ghana $ > accra
/home/cis90/simmsben/africa/ghana $ cat accra
/home/cis90/simmsben/africa/ghana $
```

*The redirection character > will create the file named if it does not exist and **empty** it if it does exist*

Class Exercise

- In your home directory create a directory named **characters** inside a directory name **island**.

```
mkdir -p island/characters
```

- In the directory named **characters** create three files: **sawyer**, **kate** and **hurley**
- Add some text of the new files:

```
echo "Katherine Anne Austin" > kate  
echo "James Ford" > sawyer  
echo "Hugo Reyes" > hurley
```

- Print all files with **cat ***
- Empty the file **hurley**

```
> hurley
```

Listing

Managing the UNIX/Linux File System

Short listing

```
/home/cis90/simmsben $ ls island  
characters
```

Short recursive listing

```
/home/cis90/simmsben $ ls -R island  
island:  
characters  
  
island/characters:  
hurley kate sawyer
```

Managing the UNIX/Linux File System

Long listing

```
/home/cis90/simmsben $ ls -l island
total 8
drwxrwxr-x 2 simmsben cis90 4096 Mar 18 07:25 characters
```

Long recursive listing

```
/home/cis90/simmsben $ ls -lR island
island:
total 8
drwxrwxr-x 2 simmsben cis90 4096 Mar 18 07:25 characters

island/characters:
total 24
-rw-rw-r-- 1 simmsben cis90 11 Mar 18 07:25 hurley
-rw-rw-r-- 1 simmsben cis90 22 Mar 18 07:25 kate
-rw-rw-r-- 1 simmsben cis90 11 Mar 18 07:25 sawyer
/home/cis90/simmsben $
```

Managing the UNIX/Linux File System

Making a directory tree diagram

```
/home/cis90/simmsben $ tree island
```

```
island
```

```
`-- characters
```

```
    |-- hurley
```

```
    |-- kate
```

```
    `-- sawyer
```

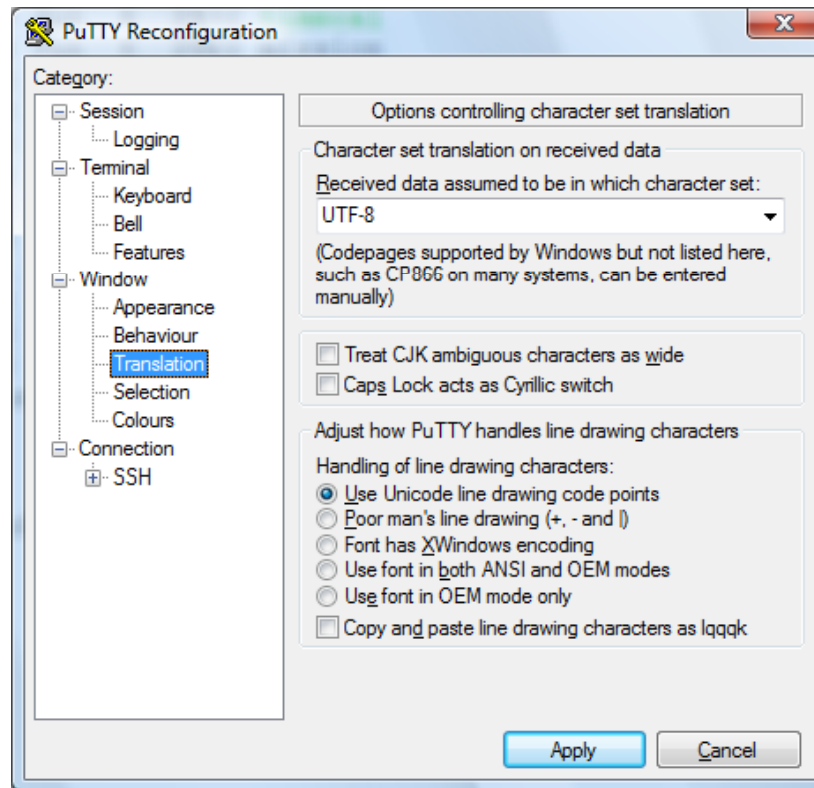
```
1 directory, 3 files
```

```
/home/cis90/simmsben $
```

Putty must be configured to use UTF-8

Managing the UNIX/Linux File System

PuTTY must be configured to use UTF-8



Class Exercise

- Return to your home directory with **cd**
- Do a short listing of the island directory with **ls island**
- Do a short recursive listing of the island directory **ls -R island**
- Do a long listing of the island directory with **ls -l island**
- Do a long recursive listing of the island directory with **ls -lR island**
- Do a long recursive listing of your home directory with **ls -lR**
- Make tree diagram of island with **tree island**

copy

Managing the UNIX/Linux File System

Copying

Commands:

cp <source file> <target file>

or

cp <source file> <target directory>

or

cp <source file> <source file> <target directory>

options: `-i -r`

`i` = warns before overwriting

`r` = recursive (copies all sub folders)

Managing the UNIX/Linux File System

Copying


Commands:

Note: using a relative pathname

cp <source file> <target file>

```

/home/cis90/simmsben $ cd
/home/cis90/simmsben $ cd island/characters/
/home/cis90/simmsben/island/characters $ ls
hurley kate sawyer
/home/cis90/simmsben/island/characters $ echo "Hugo Reyes" > hurley
  
```



Make a copy of the hurley file

```

/home/cis90/simmsben/island/characters $ cp hurley hurley.bak
/home/cis90/simmsben/island/characters $ ls
hurley hurley.bak kate sawyer
/home/cis90/simmsben/island/characters $ cat hur*
Hugo Reyes
Hugo Reyes
  
```

Managing the UNIX/Linux File System

Copying

Commands:

cp <source file> <source file> <target directory>

```
/home/cis90/simmsben/island/characters $ ls  
hurley hurley.bak kate sawyer
```

Make a new directory called backup

```
/home/cis90/simmsben/island/characters $ mkdir backup
```

Copy three files to the new directory

```
/home/cis90/simmsben/island/characters $ cp hurley kate sawyer backup/
```

List the three files in the new directory

```
/home/cis90/simmsben/island/characters $ ls backup  
hurley kate sawyer  
/home/cis90/simmsben/island/characters $
```

Managing the UNIX/Linux File System

Copying

Commands:

cp <source file> <source file> <target directory>

Copy all files to the new directory

```
/home/cis90/simmsben/island/characters $ cp * backup/
cp: omitting directory `backup'
```

*Although * matches backup, it is not included in the copy*

List the four files in the new directory

```
/home/cis90/simmsben/island/characters $ ls backup/
hurley hurley.bak kate sawyer
/home/cis90/simmsben/island/characters $
```

Note: copying a file to an existing file will overwrite that file

Managing the UNIX/Linux File System

Copying

options: `-i -r`

`i` = warns before overwriting

`r` = recursive (copies all sub folders)

```
/home/cis90/simmsben/island/characters $ ls h*
hurley  hurley.bak
/home/cis90/simmsben/island/characters $ cp -i hurley hurley.bak
cp: overwrite `hurley.bak'? yes
/home/cis90/simmsben/island/characters $
```

The `i` option provides some interaction with the user before overwriting a file

Managing the UNIX/Linux File System

Copying

options: -i -r

i = warns before overwriting

r = recursive (copies all sub folders)

```
/home/cis90/simmsben/island/characters $ cd ..  
/home/cis90/simmsben/island $ ls  
characters
```

Do recursive copy of the characters directory to a new players directory

```
/home/cis90/simmsben/island $ cp -r characters players  
/home/cis90/simmsben/island $ ls -R players  
players:  
backup hurley hurley.bak kate sawyer  
  
players/backup:  
hurley hurley.bak kate sawyer  
/home/cis90/simmsben/island $
```

Class Exercise

- Change to your island directory using an absolute path

```
cd /home/cis90/simmsben/island/characters/
```

Use your own username

- Make a backup copy of kate

```
cp kate kate2
```

- Copy hurley to kate using interactive mode

```
cp -i hurley kate (Respond with yes to overwrite)  
cat kate
```

- Restore kate from the backup copy

```
cp kate2 kate  
cat kate
```

move

Managing the UNIX/Linux File System

Moving

Commands:

mv <source file> <target file>

or

mv <source file> <target directory>

or

mv <source file> <source file> <target directory>

options: -i

i = warns before overwriting

Managing the UNIX/Linux File System

Renaming

Commands:

mv <original name> <new name>

This is how you rename files in UNIX/Linux

Class Exercise

- Change to your island directory using an absolute path

```
cd /home/cis90/simmsben/island/characters/
```

Use your own username

- Rename kate to katherine

```
mv kate katherine  
cat katherine
```

- Create a new file named **jin** and rename it to be hidden

```
touch jin  
mv jin .jin  
(verify with ls and ls -a)
```

remove

Managing the UNIX/Linux File System

Removing

Commands:

rm <filename>...

options: `-i -r -f`

`i` = prompt before remove

`r` = recursive (delete subdirectories)

`f` = force (never prompt)

rmdir <directory name>

Directories must be empty for this to work

Managing the UNIX/Linux File System

Removing

Commands:

rm <filename>...

options: `-i -r -f`

`i` = prompt before remove

`r` = recursive (delete subdirectories)

`f` = force (never prompt)

```
/home/cis90/simmsben/island/characters $ ls
backup hurley hurley.bak kate2 katherine sawyer
/home/cis90/simmsben/island/characters $ rm h* k*
/home/cis90/simmsben/island/characters $ ls
backup sawyer
```

Remove all files except for sawyer (using filename expansion characters)

Managing the UNIX/Linux File System

Removing

Commands:

rm <filename>...

options: `-i -r -f`

`i` = prompt before remove

`r` = recursive (delete subdirectories)

`f` = force (never prompt)

```
/home/cis90/simmsben/island/characters $ ls
```

```
backup sawyer
```

```
/home/cis90/simmsben/island/characters $ rm -i sawyer
```

```
rm: remove regular file `sawyer'? yes
```

```
/home/cis90/simmsben/island/characters $ ls
```

```
backup
```

Remove sawyer file interactively

Managing the UNIX/Linux File System

Removing

Commands:

rm <filename>...

options: **-i -r -f**

i = prompt before remove

r = recursive (delete subdirectories)

f = force (never prompt)

```
/home/cis90/simmsben/island/characters $ ls  
backup  
/home/cis90/simmsben/island/characters $ mv backup/* .  
/home/cis90/simmsben/island/characters $ ls  
backup hurley hurley.bak kate sawyer  
/home/cis90/simmsben/island/characters $ rmdir backup  
/home/cis90/simmsben/island/characters $ ls  
hurley hurley.bak kate sawyer
```

Move the files in the backup directory to the current directory and then remove the backup directory

Class Exercise

- Change to your island directory using an absolute path

```
cd /home/cis90/simmsben/island/characters/
```

Use your own username

- Remove all files except sawyer

```
ls
```

```
rm h* k* (use ls to verify)
```

- Remove sawyer interactively with **rm -i sawyer** and use **ls** to verify
- Move the files in backup/ to the current directory

```
mv backup/* .
```

- Remove the backup directory with **rmdir backup/**

links

Managing the UNIX/Linux File System

Linking

Commands:

In **<existing-name>** **<new-name>**

options: -s

s = symbolic link (like Windows shortcut)

Managing the UNIX/Linux File System

Linking

Commands:

In <existing-name> <new-name>

```
/home/cis90/simmsben/island/characters $ In kate katy
/home/cis90/simmsben/island/characters $ ls -li k*
105406 -rw-rw-r-- 2 simmsben cis90 22 Mar 18 07:59 kate
105406 -rw-rw-r-- 2 simmsben cis90 22 Mar 18 07:59 katy
```

↑
same inode

↑
number of hard linked files

*Use hard links to have **multiple** names for the **same** file*

Managing the UNIX/Linux File System

Linking

Commands:

In `<existing-name> <new-name>`

options: `-s`

`s` = symbolic link (like Windows shortcut)

```
/home/cis90/simmsben/island/characters $ ln -s hurley hugo
/home/cis90/simmsben/island/characters $ ls -li hu*
105401 lrwxrwxrwx 1 simmsben cis90 6 Mar 18 09:09 hugo -> hurley
105405 -rw-rw-r-- 1 simmsben cis90 11 Mar 18 07:59 hurley
```

l for symbolic link, - for regular file

Different inodes

Symbolic links are like Windows shortcuts. They are two separate files and it is possible to break the links when the target files get renamed.

Class Exercise

- Hard link kate and katy with **In kate katy**
- Use **cat ka*** and **ls -l ka*** to show these files
- Create symbolic link hugo to hurley

In -s hurley hugo

- Use **cat hu*** and **ls -l hu*** to show these files
- Break the link with **mv hurley hurley2**
- Show broken link with **cat hugo**
- Fix link with **mv hurley2 hurley**

Wrap up

New commands:

cp	copy files
ln	link files
mkdir	make directory
mv	move or rename files
rm	remove files
rmdir	remove directory
touch	make/modify a file

file:///H:/data-simms-teach.com/docs/cis90/cis90lab05.html

Cabrillo College

CIS 90 Linux Lab Exercise
Lab 5: The Unix File System
Fall 2010

Objectives

The goal of this lab is to become proficient with system commands for copying, moving, renaming, creating and removing files within your home directory.

Forum

If you get stuck, have a question or want to share something you learned with this lab then use the CIS 90 Forum at <http://opus.cabrillo.edu/forum/viewforum.php?f=25>

Procedure

Log on to the Opus server so that you have a command line shell at your service. Be sure you are in your home directory to start this lab. We are going to reorganize the files in our home directory. This will involve making new subdirectories and moving files around. The questions asked during this procedure are for your clarification only. You will be graded on correctly performing the procedure. At the end of the lab you will submit your new layout by entering the command:

```
submit
```

Making Directories

1. Display a listing of the files in your home directory using the `ls -F` command.
2. Now lets make some new directories using the `mkdir` command
 - Make a new directory named `edits` for keeping our file edits using the following command:
`mkdir edits`
 - View the new directory's contents using the `-a` option of the `ls` command. Do you see the two hidden files that were created with the directory?

Santa Cruz County C...xls Show all downloads...

In this lab you will reorganize your home directory

This lab is not one to start at the last minute!

Next Class

Assignment: Check Calendar Page on web site to see what is due next week:

<http://simms-teach.com/cis90calendar.php>

Lab 5 due

Quiz questions for next class:

- What command is used to rename a file?
- If two files are hard linked do they have the same or different inode numbers?
- What option for the rm command provides confirmation when deleting files?

Test 1

Test

- 15 questions, 30 points, plus some extra credit
- 5 questions taken from CIS 90 Lesson 1-5
flashcards
- 10 operational questions based on using
commands used in labs 1-4
- Open book, open notes, open computer



Test 1

Backup