



Rich's lesson module checklist

Last modified: 2/28/2017

- ☐ Slides and lab posted
- ☐ WB converted from PowerPoint
- ☐ Print out agenda slide and annotate page numbers

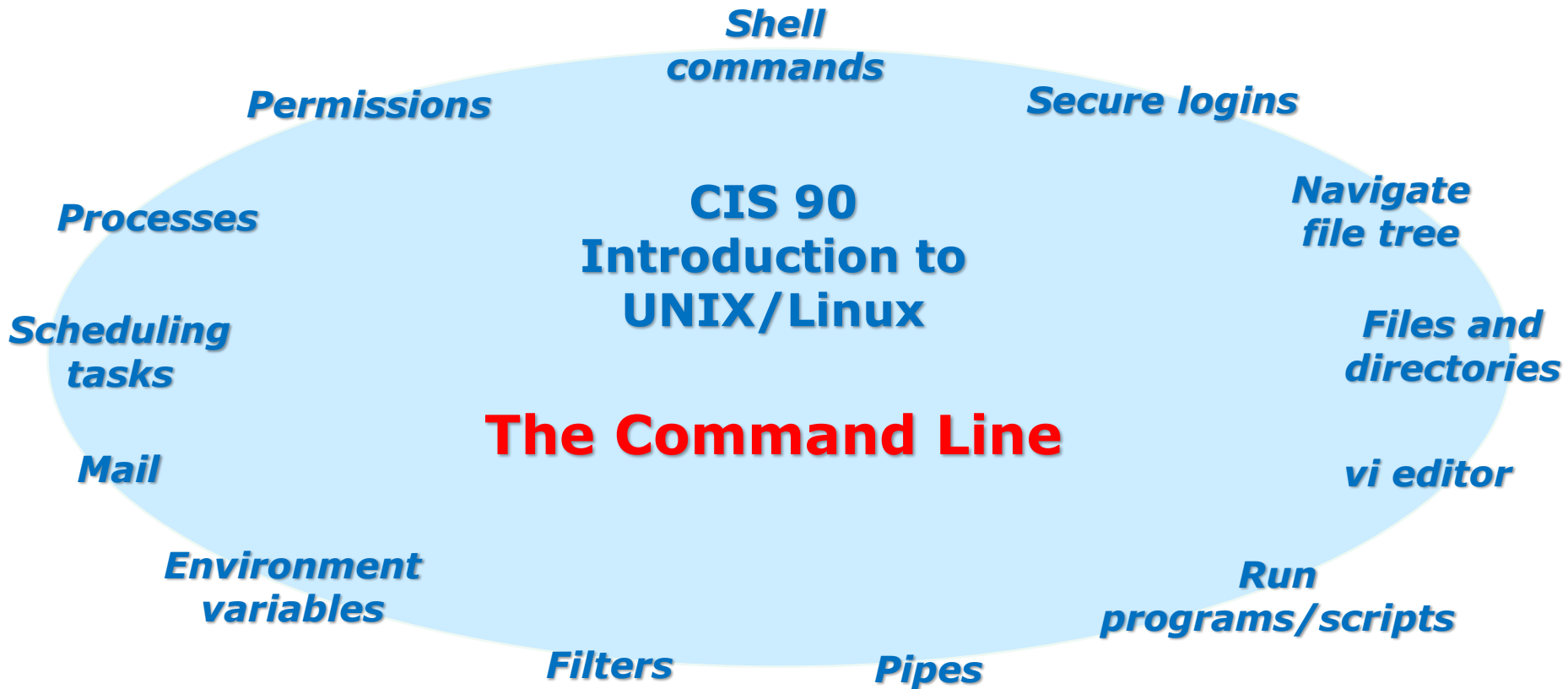
- ☐ Flash cards
- ☐ Page numbers
- ☐ 1st minute quiz
- ☐ Web Calendar summary
- ☐ Web book pages
- ☐ Commands

- ☐ Lab 5
- ☐ Put sonnet6 & bigfile in depot

- ☐ Real Test 1 configured on canvas
- ☐ Real Test 1 Q16 & Q30 updated
- ☐ Real Test 1 /etc/nologin and Q29 scheduled
- ☐ Real Test 1 systems scheduled access and shutdown
- ☐ Practice Test 1 systems shutdown scheduled

- ☐ 9V backup battery for microphone
- ☐ Backup slides, CCC info, handouts on flash drive
- ☐ Key card for classroom door

- ☐ Update CCC Confer and 3C Media portals



Student Learner Outcomes

1. Navigate and manage the UNIX/Linux file system by viewing, copying, moving, renaming, creating, and removing files and directories.
2. Use the UNIX features of file redirection and pipelines to control the flow of data to and from various commands.
3. With the aid of online manual pages, execute UNIX system commands from either a keyboard or a shell script using correct command syntax.

Introductions and Credits



Jim Griffin

- Created this Linux course
- Created Opus and the CIS VLab
- Jim's site: <http://cabrillo.edu/~jgriffin/>



Rich Simms

- HP Alumnus
- Started teaching this course in 2008 when Jim went on sabbatical
- Rich's site: <http://simms-teach.com>

And thanks to:

- John Govsky for many teaching best practices: e.g. the First Minute quizzes, the online forum, and the point grading system (<http://teacherjohn.com/>)



Student checklist for attending class

The screenshot shows a web browser window with the address bar displaying `simms-teach.com/cis90calendar.php`. The page title is "Rich's Cabrillo College CIS Classes CIS 90 Calendar". On the left sidebar, the "CIS 90" link is highlighted. The main content area shows a calendar for "CIS 90 (Fall 2014) Calendar" with tabs for "Course Details", "Genders", and "Calendar". The "Calendar" tab is selected, showing a table with columns for "Lesson", "Date", "Topics", and "Link". The first row is for Lesson 1 on 9/2, titled "Class and Linux Overview". Below the table, there are links for "Presentation slides (download)", "Supplemental" (with a link to "PowerPoint: Logging into Opus (download)"), "Assignment" (with links to "Student Survey" and "Lab 1"), "CIS Confer" (with a link to "Enter virtual classroom"), "Quiz 1", and "Comments".

1. Browse to:
`http://simms-teach.com`
2. Click the **CIS 90** link.
3. Click the **Calendar** link.
4. Locate today's lesson.
5. Find the **Presentation slides** for the lesson and **download** for easier viewing.
6. Click the **Enter virtual classroom** link to join CCC Confer.
7. Log into Opus with Putty or ssh command.

Note: Blackboard Collaborate Launcher only needs to be installed once. It has already been downloaded and installed on the classroom PC's.



Student checklist for suggested screen layout

☐ Google

☐ CCC Confer

☐ Downloaded PDF of Lesson Slides

The screenshot illustrates a virtual classroom setup with several overlapping windows. At the top left is the Blackboard LMS interface for CIS 90. In the center is a Google search page displaying a map of California. Overlaid on the Google page is the CCC Confer video chat window, which shows a list of participants (Benji Simms, Rich-Simms) and a chat log. To the right of the video chat is an Adobe Acrobat Pro window displaying a PDF document titled 'cis90lesson01.pdf'. Below the video chat and to the right of the PDF is a terminal window showing login attempts for 'Opus'.

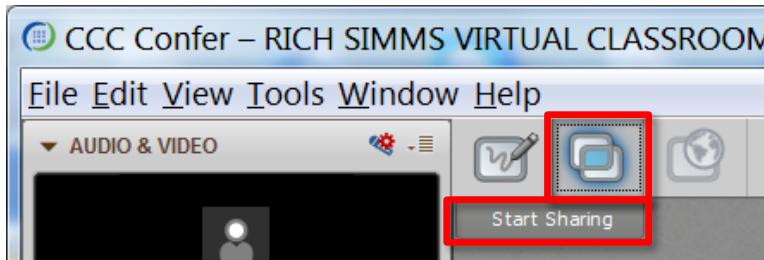
☐ CIS 90 website Calendar page

☐ One or more login sessions to Opus

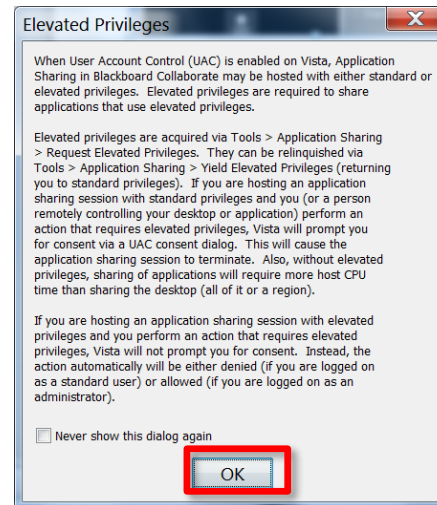


Student checklist for sharing desktop with classmates

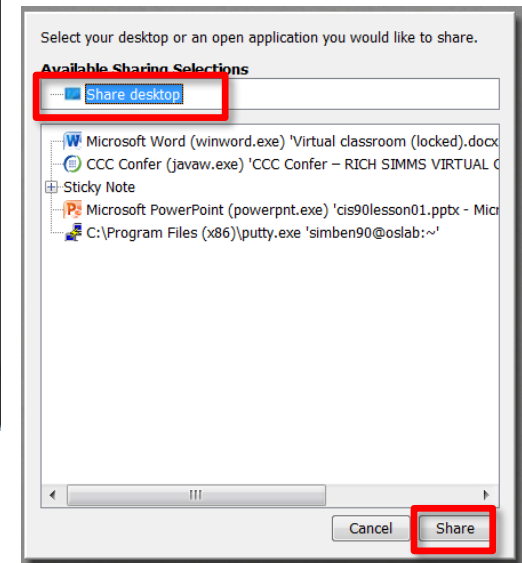
1) Instructor gives you sharing privileges



2) Click overlapping rectangles icon. If white "Start Sharing" text is present then click it as well.



3) Click OK button.



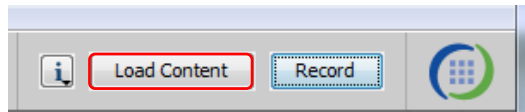
4) Select "Share desktop" and click Share button.



Rich's CCC Confer checklist - setup

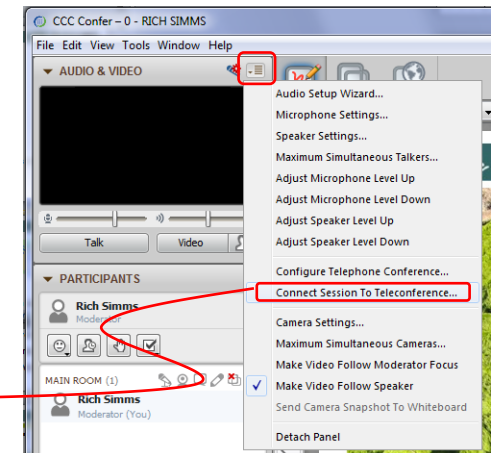
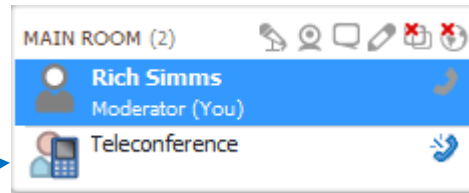


[] Preload White Board



[] Connect session to Teleconference

Session now connected to teleconference



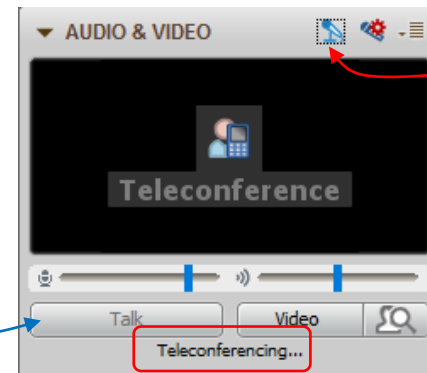
[] Is recording on?



Red dot means recording

[] Use teleconferencing, not mic

Should be grayed out



Should change from phone handset icon to little Microphone icon and the Teleconferencing ... message displayed



Rich's CCC Confer checklist - screen layout



The screenshot displays a Windows desktop environment during a CCC Confer session. The desktop includes several open applications:

- CCC Confer - 0 - RIC...:** A window showing the conferencing interface with a video feed of Rich Simms, a list of participants (Rich Simms, Rich Simms, Teleconference), and a chat window.
- simms-teach.com/docs/cis90/cis-90-TEST-1-Fall-12.pdf:** A web browser window displaying a quiz titled "Part 1 - Flashc (1 point each)". The quiz questions are:
 - [Q1] What command shows the other users logged in to the computer?
 - [A1]
 - [Q2] What environment variable is used by the shell to determine which directories to search when locating a command?
 - [A2]
- Terminal Window:** A terminal window showing a login session for simben90@oslab. The output includes:


```
login as: simben90
simben90@oslab.cabrillo.edu's password:
Access denied
simben90@oslab.cabrillo.edu's password:
Last login: Mon Oct 8 18:58:43 2011 from 10.10.10.10
d.com
```
- vSphere Client:** A window showing the vSphere Client interface, displaying a list of virtual machines (CIS 192, CIS 191, CIS 190, CIS 189, CIS 188, CIS 187, CIS 186, CIS 185, CIS 184, CIS 183, CIS 182, CIS 181, CIS 180, CIS 179, CIS 178, CIS 177, CIS 176, CIS 175, CIS 174, CIS 173, CIS 172, CIS 171, CIS 170, CIS 169, CIS 168, CIS 167, CIS 166, CIS 165, CIS 164, CIS 163, CIS 162, CIS 161, CIS 160, CIS 159, CIS 158, CIS 157, CIS 156, CIS 155, CIS 154, CIS 153, CIS 152, CIS 151, CIS 150, CIS 149, CIS 148, CIS 147, CIS 146, CIS 145, CIS 144, CIS 143, CIS 142, CIS 141, CIS 140, CIS 139, CIS 138, CIS 137, CIS 136, CIS 135, CIS 134, CIS 133, CIS 132, CIS 131, CIS 130, CIS 129, CIS 128, CIS 127, CIS 126, CIS 125, CIS 124, CIS 123, CIS 122, CIS 121, CIS 120, CIS 119, CIS 118, CIS 117, CIS 116, CIS 115, CIS 114, CIS 113, CIS 112, CIS 111, CIS 110, CIS 109, CIS 108, CIS 107, CIS 106, CIS 105, CIS 104, CIS 103, CIS 102, CIS 101, CIS 100, CIS 99, CIS 98, CIS 97, CIS 96, CIS 95, CIS 94, CIS 93, CIS 92, CIS 91, CIS 90, CIS 89, CIS 88, CIS 87, CIS 86, CIS 85, CIS 84, CIS 83, CIS 82, CIS 81, CIS 80, CIS 79, CIS 78, CIS 77, CIS 76, CIS 75, CIS 74, CIS 73, CIS 72, CIS 71, CIS 70, CIS 69, CIS 68, CIS 67, CIS 66, CIS 65, CIS 64, CIS 63, CIS 62, CIS 61, CIS 60, CIS 59, CIS 58, CIS 57, CIS 56, CIS 55, CIS 54, CIS 53, CIS 52, CIS 51, CIS 50, CIS 49, CIS 48, CIS 47, CIS 46, CIS 45, CIS 44, CIS 43, CIS 42, CIS 41, CIS 40, CIS 39, CIS 38, CIS 37, CIS 36, CIS 35, CIS 34, CIS 33, CIS 32, CIS 31, CIS 30, CIS 29, CIS 28, CIS 27, CIS 26, CIS 25, CIS 24, CIS 23, CIS 22, CIS 21, CIS 20, CIS 19, CIS 18, CIS 17, CIS 16, CIS 15, CIS 14, CIS 13, CIS 12, CIS 11, CIS 10, CIS 9, CIS 8, CIS 7, CIS 6, CIS 5, CIS 4, CIS 3, CIS 2, CIS 1, CIS 0).

Red callout boxes with arrows point to specific elements:

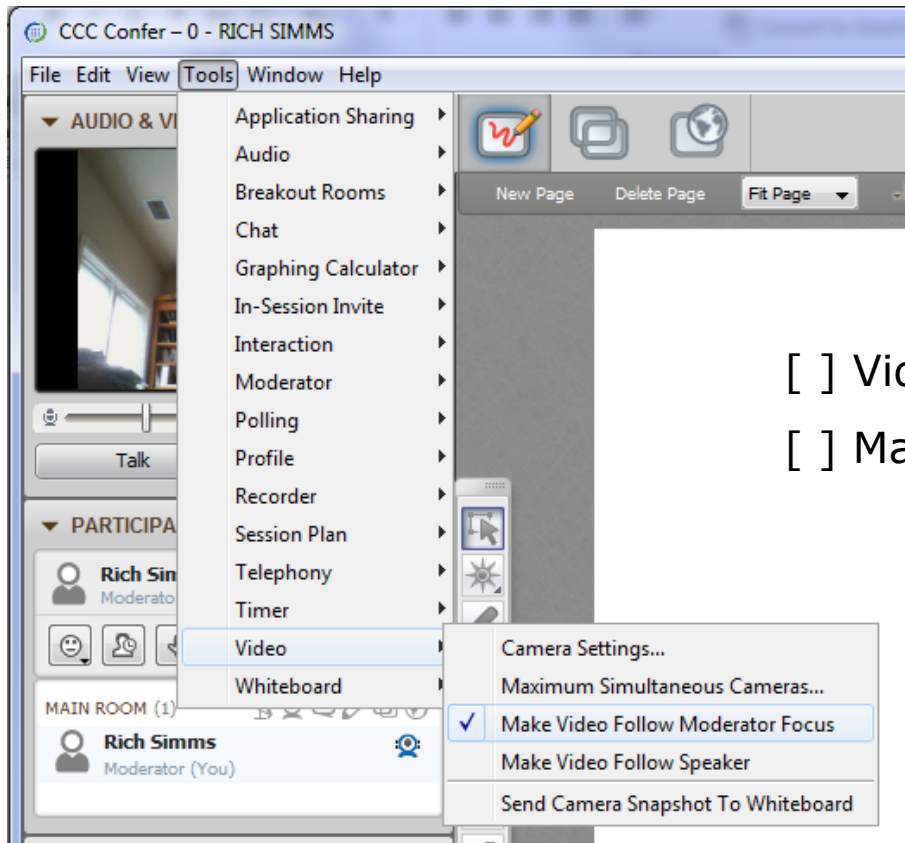
- foxit for slides:** Points to the Foxit Reader window displaying "cis90lesson07.pdf".
- chrome:** Points to the web browser window displaying the quiz.
- putty:** Points to the terminal window.
- vSphere Client:** Points to the vSphere Client window.

[] layout and share apps





Rich's CCC Confer checklist - webcam setup

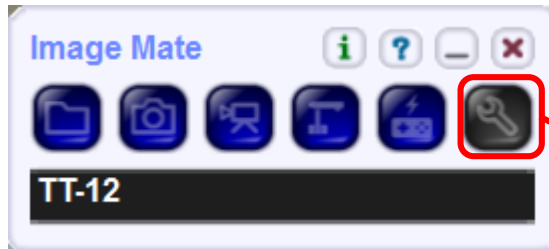


[] Video (webcam)

[] Make Video Follow Moderator Focus



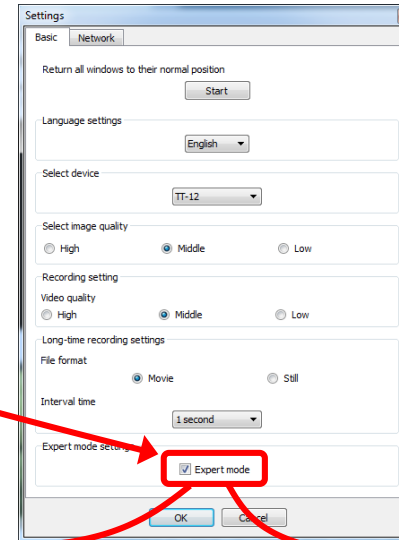
Rich's CCC Confer checklist - Elmo



Elmo rotated down to view side table



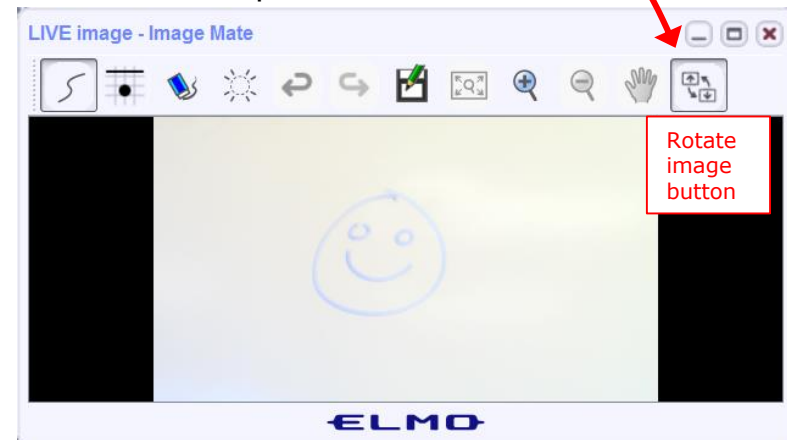
Run and share the Image Mate program just as you would any other app with CCC Confer



The "rotate image" button is necessary if you use both the side table and the white board.

Quite interesting that they consider you to be an "expert" in order to use this button!

Elmo rotated up to view white board



Rich's CCC Confer checklist - universal fixes

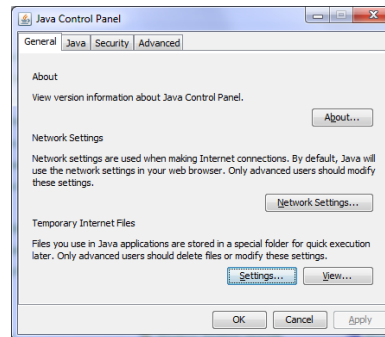
Universal Fix for CCC Confer:

- 1) Shrink (500 MB) and delete Java cache
- 2) Uninstall and reinstall latest Java runtime
- 3) <http://www.cccconfer.org/support/technicalSupport.aspx>

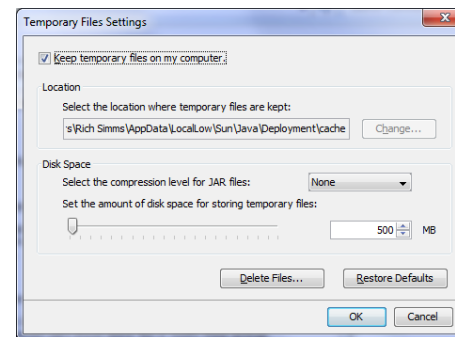
Control Panel (small icons)



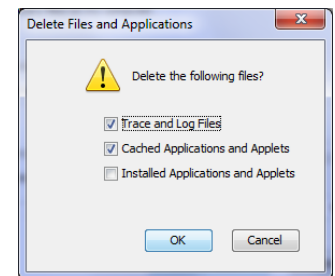
General Tab > Settings...



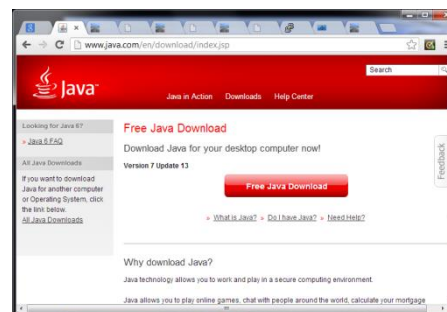
500MB cache size



Delete these

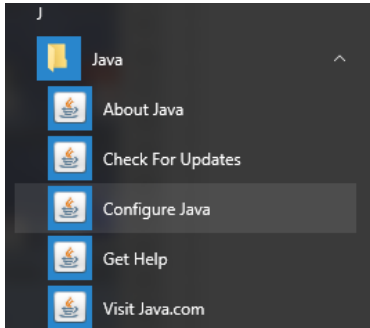


Google Java download

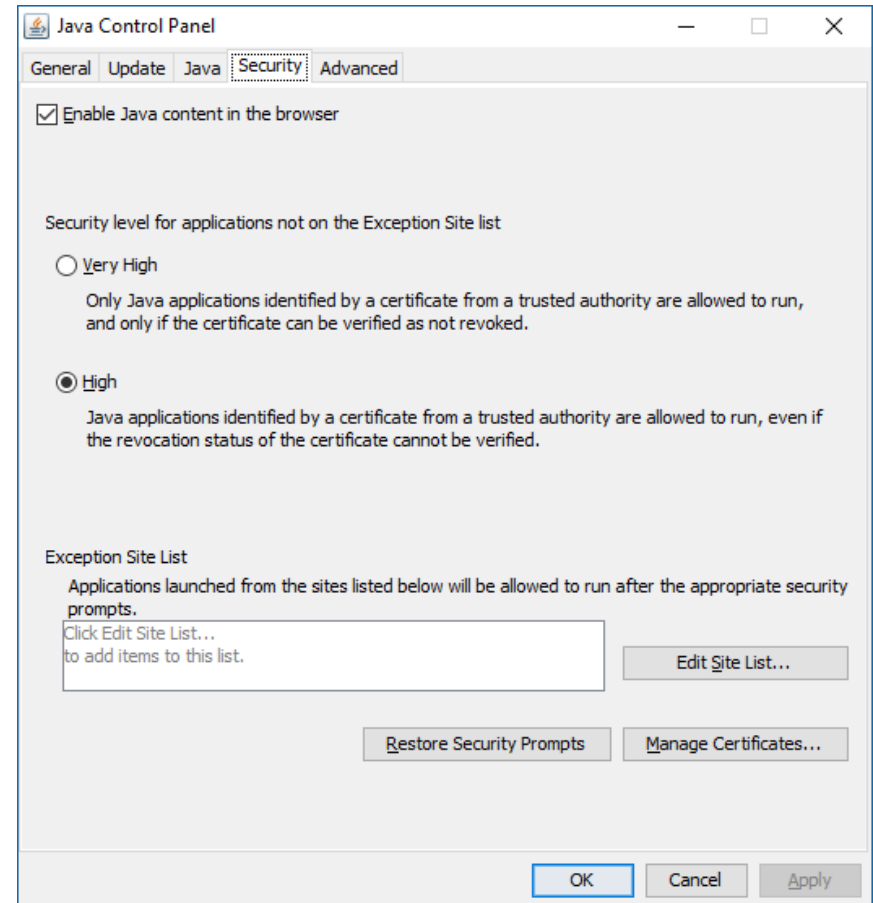




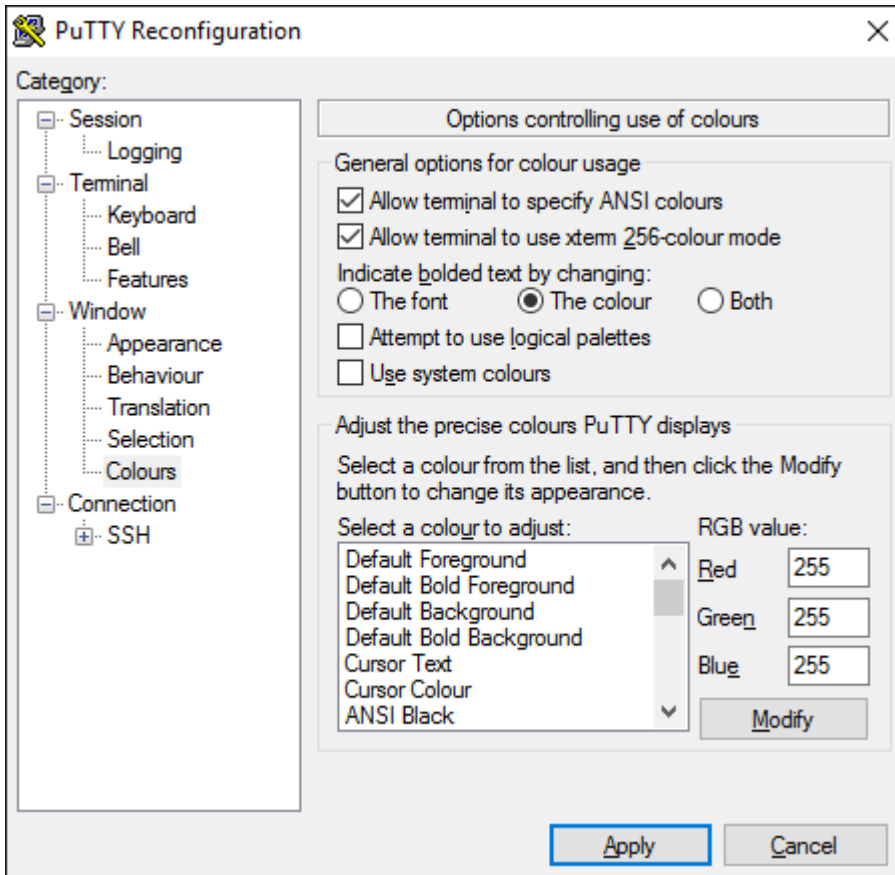
Rich's CCC Confer checklist - digital certificate work around



1. Open the [Java Control Panel](#)
2. Select the **Security** tab
3. Select **Edit Site List...**
4. Select **Add**
5. Click into the white box next to the red exclamation mark and type **https://na-downloads.illuminate.com**
6. Press OK
7. Press **Continue** on the pop-up message
8. Press OK
9. Access your session or recording once more



Rich's CCC Confer checklist - Putty Colors



Putty Colors

Default Foreground 255 255 255
 Default Bold Foreground 255 255 255
 Default Background 51 51 51
 Default Bold Background 255 2 85
 Cursor Text 0 0 0
 Cursor Color 0 255 0
 ANSI Black 77 77 77
 ANSI Black Bold 85 85 85
 ANSI Red 187 0 0
 ANSI Red Bold 255 85 85
 ANSI Green 152 251 152
 ANSI Green Bold 85 255 85
 ANSI Yellow 240 230 140
 ANSI Yellow Bold 255 255 85
 ANSI Blue 205 133 63
 ANSI Blue Bold 135 206 235
 ANSI Magenta 255 222 173
 ANSI Magenta Bold 255 85 255
 ANSI Cyan 255 160 160
 ANSI Cyan Bold 255 215 0
 ANSI White 245 222 179
 ANSI White Bold 255 255 255

<http://looselytyped.blogspot.com/2013/02/zenburn-pleasant-color-scheme-for-putty.html>

Start

Sound Check

*Students that dial-in should mute their line using *6 to prevent unintended noises distracting the web conference.*

*Instructor can use *96 to mute all student lines.*

Volume

**4 - increase conference volume.*

**7 - decrease conference volume.*

**5 - increase your voice volume.*

**8 - decrease your voice volume.*



Instructor: **Rich Simms**

Dial-in: **888-886-3951**

Passcode: **136690**



Melissa



Tess



Alex



Daniel



Ian J.



Harold



Victor



Jasen



Sam



Ryan



Roberto



Hans



Cristian



Nicholas



Dillon



Luis



Josh M.



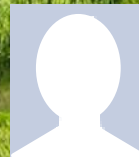
Venus



Gracie



Cameron



Julian



Ken



Joshua V.



Samantha



Steven P.



Philip



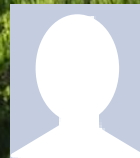
Ian C.



Stephen L.



Alison



Justin



Nigel

First Minute Quiz

Please answer these questions **in the order** shown:

No Quiz today ... test instead

For credit email answers to:

`risimms@cabrillo.edu`

within the **first few minutes of class**

Managing Files

Objectives	Agenda
• Be able to create, copy, move, remove and link files	• Questions • Housekeeping • Managing files • Creating directories • Creating regular files • Listing files • Copying files • Moving Files • Removing files • Linking files • Assignment • Wrap up • Test #1



Questions

Questions?

Lesson material?

Labs? Tests?

How this course works?

- Graded work in home directories
- Answers in /home/cis90/answers

Who questions much, shall learn much, and retain much.

- Francis Bacon

If you don't ask, you don't get.

- Mahatma Gandhi

Chinese
Proverb

他問一個問題，五分鐘是個傻子，他不問一個問題仍然是一個傻瓜永遠。

He who asks a question is a fool for five minutes; he who does not ask a question remains a fool forever.

Housekeeping



No labs due today

Test 1 will become available at **11:00 AM** today

- Open book, open notes, open computer.
- You must work alone and not help or receive help from others.
- Online timed 60 minute test using Canvas
- Online "archive watching" students that work can take it later today but it must be completed by 11:59 PM.
- **Practice test systems shutdown 30 minutes before real test starts!**

Next week:

- Quiz 5
- Lab 5 is due

Test 1 Instructions

HONOR CODE:

This test is open book, open notes, and open computer. HOWEVER, you must work alone. You may not discuss the test questions or answers with others during the test. You may not ask or receive assistance from anyone other than the instructor when doing this test. Likewise you may not give any assistance to anyone taking the test.

INSTRUCTIONS:

Every question on the test was designed to be answered using one of the systems below.

1. oslab.cis.cabrillo.edu (port 2220) - This server is named Opus internally.
2. sun-hwa-vii.cis.cabrillo.edu (port 22)
3. son-of-opus.simms-teach.com (port 2220)
4. arya-xx (port 22) - Select xx for your own Arya.

Each question begins with *[system name]* so you know which system you should be logged into to answer the question.

All systems are accessible using ssh from opus. For sun-hwa-vii and son-of-opus login using your original opus credentials. For arya, use the generic cis90 account.

IF YOU GET STUCK on a question you can ask or email the instructor for the answer and forfeit the point. The instructor will be available during class and be online between 8-10 PM in the evening for online or long distance students.

Please KEEP YOUR ANSWERS TO A SINGLE LINE ONLY !!

This test must be completed in one sitting. The submittal will be made automatically when the time is up. If you submit early by accident you will not be able to re-enter and continue. If that happens don't panic! Just email the instructor any remaining answers before the time is up.

Don't Forget -- Perkins/VTEA Survey

phpBB® Cabrillo College: Computer and Information Systems
creating communities
Forum for students in the Computer Networking and System Administration and/or Computer Support Specialist programs

Search...

Quick links FAQ Register Login

Board index < Cabrillo College Fall 2015 Courses < CIS 90 - Fall 2015

Carl D. Perkins Vocational and Technical Education Act

Post Reply Search this topic... 5 posts • Page 1 of 1

Carl D. Perkins Vocational and Technical Education Act
by Rich Simms • Tue Sep 22, 2015 2:34 pm

The Carl D. Perkins Vocational and Technical Education Act was originally authorized by Congress in 1984. It was reauthorized in 1998 and again in 2006. This act provides federal funding for improving career technical education (CTE) within the United States in order to help the economy.

For Cabrillo College to receive a portion of this funding students in technical classes must fill out a survey. The more surveys completed the more funds the college will receive. The survey only needs to be completed once per term by each student.

This survey can be completed online using web advisor:

Log on to WEBADVISOR at <https://wave.cabrillo.edu>

Select "STUDENTS: Click Here" (navy blue bar)

- Under "Academic Profile" Click on "Student Update Form"
- Use drop down list under "Select the earliest term for which you are registered" and click on the current term.
- Select "SUBMIT"

Scroll down to the "Career Technical Information"

- Answer questions by clicking on the circle to the left of your "Yes" or "No" answers
- You can get details about a question by clicking on blue underlined phrase
- After answering all questions Select "SUBMIT"

Then "LOG OUT"

Thank you for taking a few minutes to help Cabrillo College CS/CIS programs!

- Rich

Rich Simms
Posts: 1793
Joined: Sat Jan 16, 2010 5:47 pm
Contact: [email icon]

This is an important source of funding for Cabrillo College.

*Send me an email stating you completed this survey for **three points extra credit!***

Career Technical Information
Your answers to these questions will help qualify Cabrillo College for Perkins/VTEA grant funds.

Are you currently receiving benefits from:

☐ Yes ☐ No TANF/CALWORKS

☐ Yes ☐ No SSI (Supplemental Security Income)

☐ Yes ☐ No GA (General Assistance)

☐ Yes ☐ No Does your income qualify you for a fee waiver?

☐ Yes ☐ No Are you a single parent with custody of one or more minor children?

☐ Yes ☐ No Are you a displaced homemaker attending Cabrillo to develop job skills?

☐ Yes ☐ No Have you moved in the preceding 36 months to obtain, or to accompany parents or spouses to obtain, temporary or seasonal employment in agriculture, dairy, or fishing?

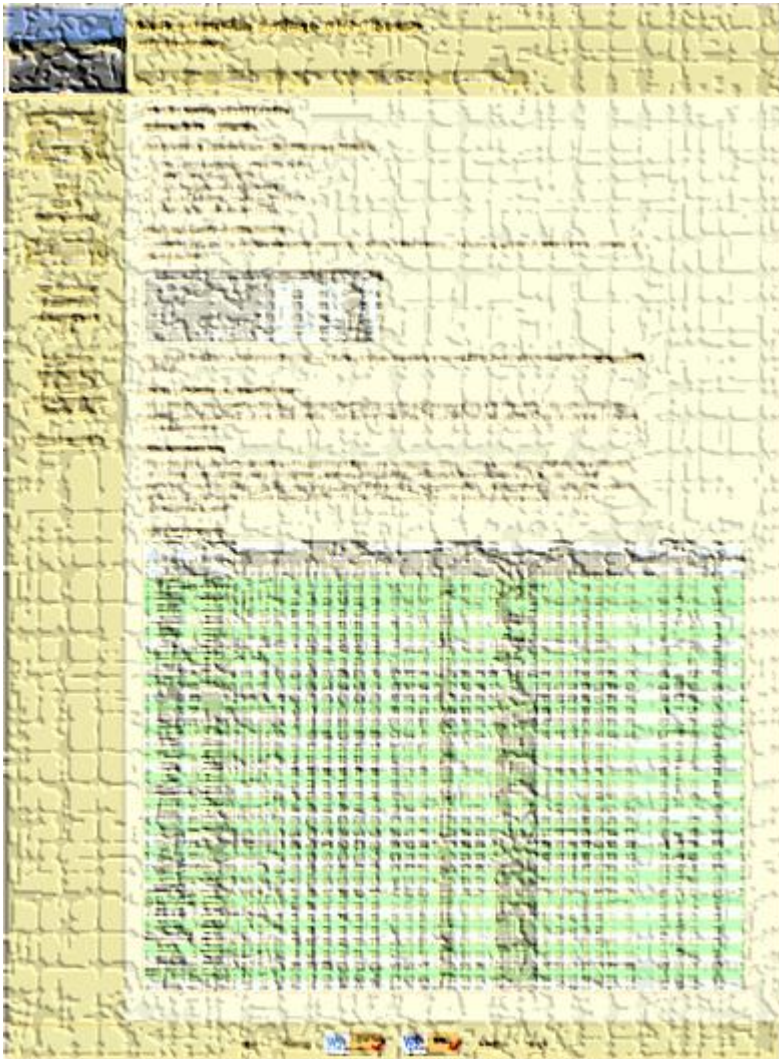
<http://oslab.cis.cabrillo.edu/forum/viewtopic.php?f=121&t=4176>

<http://simms-teach.com/cis90grades.php>

GRADES

Be sure and check your progress on the Grades page as the course continues on.

Send me a student survey if you haven't already to get your LOR secret code name.



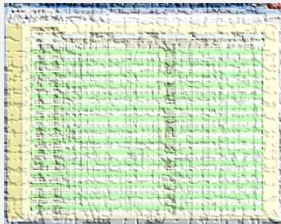
The screenshot shows a web browser window displaying a page titled "CIS 90 - Grades". The page has a yellow background with a textured pattern. On the left side, there is a vertical navigation menu with links such as "Home", "About", "Contact", "Grades", "LOR", "Survey", and "FAQ". The main content area features a large table with multiple columns and rows, displaying student names and their corresponding grades. The table is partially obscured by a large, semi-transparent watermark that reads "CIS 90 - Grades".

Where to find your grades

Send me your survey to get your LOR code name.

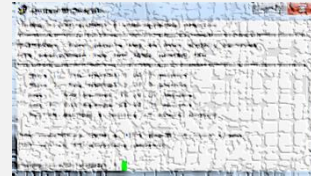
The CIS 90 website Grades page

<http://simms-teach.com/cis90grades.php>



Or check on Opus

checkgrades *codename*
(where codename is your LOR codename)



Written by Jesse Warren a past CIS 90 Alumnus

Percentage	Total Points	Letter Grade	Pass/No Pass
90% or higher	504 or higher	A	Pass
80% to 89.9%	448 to 503	B	Pass
70% to 79.9%	392 to 447	C	Pass
60% to 69.9%	336 to 391	D	No pass
0% to 59.9%	0 to 335	F	No pass

Points that could have been earned:

4 quizzes: 12 points
4 labs: 120 points
1 forum quarter: 20 points
Total: 152 points

At the end of the term I'll add up all your points and assign you a grade using this table

Managing Files



Lesson 6 commands for your toolbox:

touch	- make a file (or update the timestamp)
mkdir	- make a directory
cp	- copy a file
mv	- move or rename a file
rmdir	- remove a directory
rm	- remove a file
ln	- create a link
tree	- visual list a directory

Redirecting stdout:

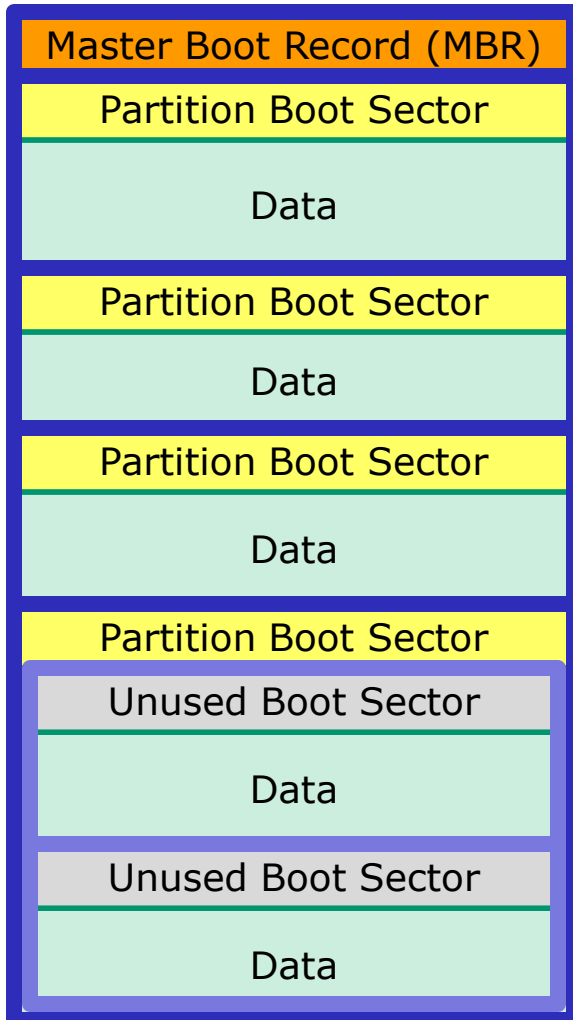
> filename - redirecting stdout to create/empty a file



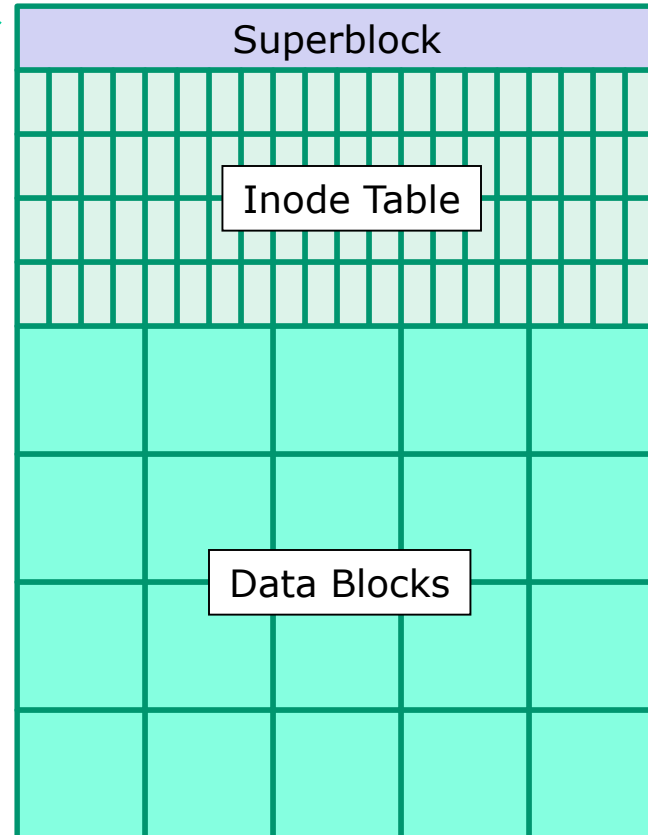
File Systems

Linux

The hard drive is partitioned and the data areas can be formatted as a file system. Linux typically uses ext2, ext3 and ext4 file systems. Windows uses FAT32 and NTFS file systems.



ext3 file system



UNIX Files

The three elements of a file

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

filename

+

```
/home/cis90/simben/Poems $ ls -li twister
102625 -rw-r--r-- 1 simben90 cis90 151 Jul 20 2001 twister
```

inode number *inode information*

inode

+

```
/home/cis90/simben/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?"
```

data

filenames are stored in directories, **not** in inodes

bigfile 19470
bin 9628
letter 9662

Hello Mother! Hello Father!

Here I am at Camp Granada. Things are very entertaining, and they say we'll have some fun when it stops raining.

All the counselors hate the waiters, and the lake has alligators. You remember Leonard Skinner? He got ptomaine poisoning last night after dinner.

Now I don't want this to scare you, but my bunk mate has malaria. You remember Jeffrey Hardy? Their about to organize a searching party.

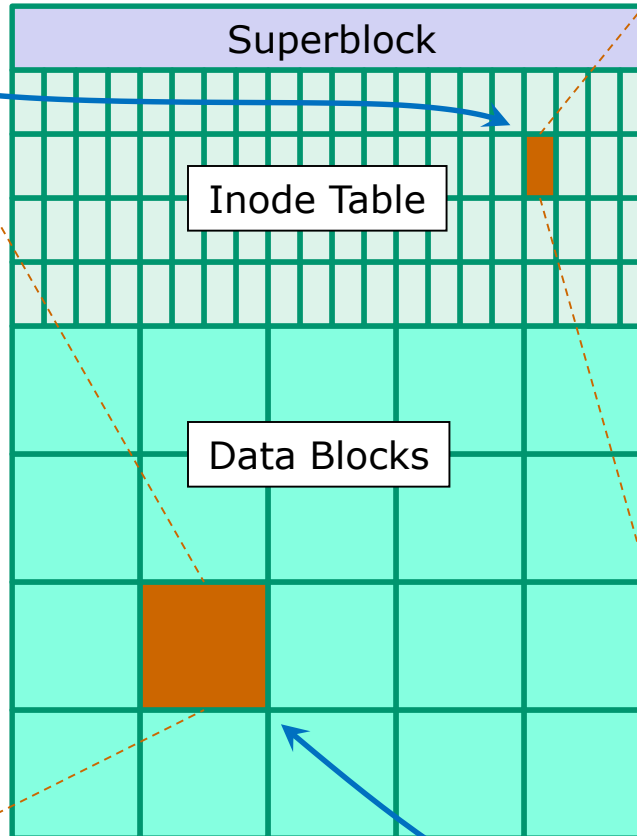
Take me home, oh Mother, Father, take me home! I hate Granada.
Don't leave me out in the forest where I might get eaten by a bear! Take me home, I promise that I won't make noise, or mess the house with other boys, oh please don't make me stay -- I've been here one whole day.

Dearest Father, darling Mother, how's my precious little brother? I will come home if you miss me. I will even let Aunt Bertha hug and kiss me!

Wait a minute! It's stopped hailing! Guys are swimming!
Guys are sailing! Playing baseball, gee that's better!
Mother, Father, kindly disregard this letter.

Alan Sherman

ext2 file system



9662	inode number
-	Type
rw-r--r--	Permissions
1	Number of links
simben90	User
cis90	Group
1044	Size
2001-07-20	Modification time
2012-09-17	Access Time
2012-08-01	Change time
Pointer(s) to data blocks	Pointer(s) to data blocks

```
/home/cis90/simben $ ls -il letter
```

```
9662 -rw-r--r--. 1 simben90 cis90 1044 Jul 20 2001 letter
```

Creating Directories

Creating Directories

Command syntax:

mkdir *<new-directory-name>*

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

Remember, everything in Unix is a file ... even directories!

Creating Directories

The mkdir command

mkdir <*new-name*>

Create a new directory named island

```
/home/cis90/simben $ ls -l island  
ls: island: No such file or directory
```

```
/home/cis90/simben $ mkdir island  
/home/cis90/simben $ ls -ld island  
drwxrwxr-x 2 simben90 cis90 4096 Mar 18 06:43 island
```

*Note: Use the **d** option on the **ls** command to list information about the directory itself rather than directory contents*

The basic file type is a directory

The file owner is a simben90

The file size is 4096 bytes

Creating Directories

The mkdir command

Create multiple directories at once

```
/home/cis90/simben $ mkdir redhat debian slackware
```

```
/home/cis90/simben $
```

```
/home/cis90/simben $
```

```
/home/cis90/simben $
```

```
/home/cis90/simben $
```

```
/home/cis90/simben $
```

```
/home/cis90/simben $ ls -ld redhat/ debian/ slackware/
```

```
drwxrwxr-x 2 simben90 cis90 4096 Mar 17 09:36 debian/
```

```
drwxrwxr-x 2 simben90 cis90 4096 Mar 17 09:36 redhat/
```

```
drwxrwxr-x 2 simben90 cis90 4096 Mar 17 09:36 slackware/
```

*Note: Use the **d** option on the **ls** command to list information about the directories themselves rather than their contents*

Column 1 of the long listing shows the basic file type is a "d" for directory

Creating Directories

The mkdir command

Create nested directories (one directory inside another)

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

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

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

```
/home/cis90/simben $ ls africa
```

```
ghana
```

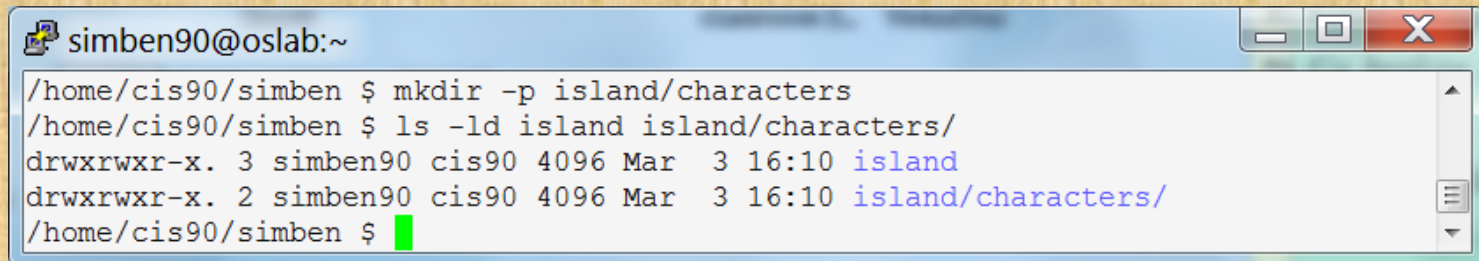
*Need to use the **p** option to create new parent directories as needed*

Activity

In your home directory create a directory named *characters* inside a directory named *island* then list both new directories:

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

```
ls -ld island island/characters/
```



```
simben90@oslab:~
/home/cis90/simben $ mkdir -p island/characters
/home/cis90/simben $ ls -ld island island/characters/
drwxrwxr-x. 3 simben90 cis90 4096 Mar  3 16:10 island
drwxrwxr-x. 2 simben90 cis90 4096 Mar  3 16:10 island/characters/
/home/cis90/simben $
```

Creating Regular Files

Creating Files

Command syntax:

touch *<new-filename>*

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

echo *"string"* **>** *<new-filename>*

- Creates or overwrites a text file

Creating Files

The touch command

touch <new-name>

Creates one or more empty regular files, or if the file already exists, it updates the time stamp.

```
/home/cis90/simben $ ls -l sawyer  
ls: sawyer: No such file or directory
```

```
/home/cis90/simben $ touch sawyer  
/home/cis90/simben $ ls -l sawyer  
-rw-rw-r-- 1 simben90 cis90 0 Mar 18 06:34 sawyer
```

*The file type
is a regular
file*

*The file owner
is simben90*

*The file size is 0
bytes (an empty file)*

Creating Files

The touch command

Multiple files can be created with one command

```
/home/cis90/simben $ ls -l a b c  
ls: a: No such file or directory  
ls: b: No such file or directory  
ls: c: No such file or directory
```

```
/home/cis90/simben $ touch a b c multiple arguments allowed  
/home/cis90/simben $ ls -l a b c
```

```
-rw-rw-r-- 1 simben90 cis90 0 Mar 17 09:27 a  
-rw-rw-r-- 1 simben90 cis90 0 Mar 17 09:27 b  
-rw-rw-r-- 1 simben90 cis90 0 Mar 17 09:27 c
```

*Column 1 of the long listing shows the basic
file type is a "-" for regular file*

Creating Files

The touch command

The "last modified" timestamp is updated if the file already exists

```
/home/cis90/simben $ ls -l sawyer  
-rw-rw-r-- 1 simben90 cis90 0 Mar 18 06:34 sawyer
```

*Wait a few minutes then touch
the file to update the timestamp*

```
/home/cis90/simben $ touch sawyer  
/home/cis90/simben $ ls -l sawyer  
-rw-rw-r-- 1 simben90 cis90 0 Mar 18 06:40 sawyer
```



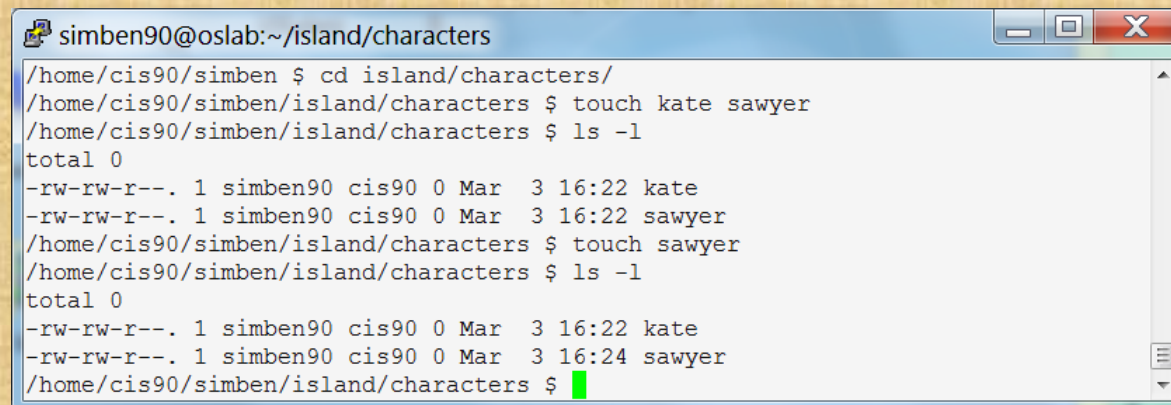
Activity

In the directory named *characters* create 2 new files:

```
cd island/characters  
touch kate sawyer  
ls -l
```

wait a minute or two

```
touch sawyer  
ls -l
```



```
simben90@oslab:~/island/characters  
/home/cis90/simben $ cd island/characters/  
/home/cis90/simben/island/characters $ touch kate sawyer  
/home/cis90/simben/island/characters $ ls -l  
total 0  
-rw-rw-r--. 1 simben90 cis90 0 Mar  3 16:22 kate  
-rw-rw-r--. 1 simben90 cis90 0 Mar  3 16:22 sawyer  
/home/cis90/simben/island/characters $ touch sawyer  
/home/cis90/simben/island/characters $ ls -l  
total 0  
-rw-rw-r--. 1 simben90 cis90 0 Mar  3 16:22 kate  
-rw-rw-r--. 1 simben90 cis90 0 Mar  3 16:24 sawyer  
/home/cis90/simben/island/characters $
```

Creating Files

Redirection to stdout

echo "string" > newfile Creates or overwrites a text file

Creating a file named accra and adding some text to it

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

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



Creating Files

Redirection to stdout

Be careful!



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

*The redirection character > will create the file named if that file does not exist. **If the file does exist it will be emptied without warning!***

Activity

- In the directory named *characters* create a new file:

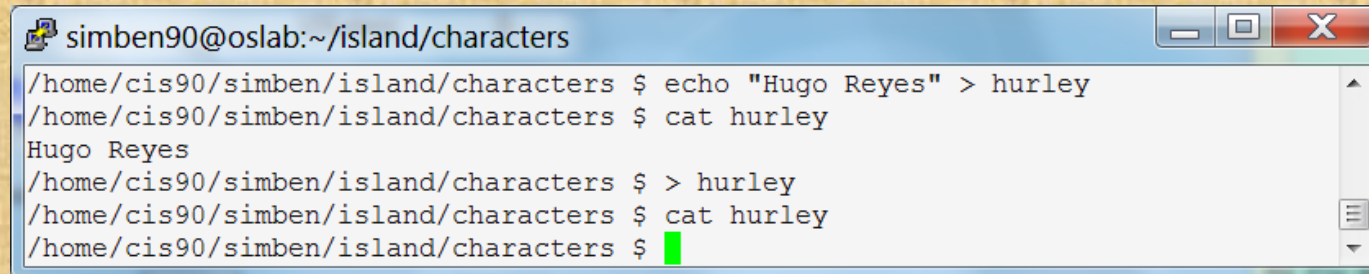
```
echo "Hugo Reyes" > hurley
```

- Print the new file with:

```
cat hurley
```

- Empty the file *hurley*

```
> hurley  
cat hurley
```



```
simben90@oslab:~/island/characters  
/home/cis90/simben/island/characters $ echo "Hugo Reyes" > hurley  
/home/cis90/simben/island/characters $ cat hurley  
Hugo Reyes  
/home/cis90/simben/island/characters $ > hurley  
/home/cis90/simben/island/characters $ cat hurley  
/home/cis90/simben/island/characters $
```

Listing Files

Listing Files & Directories

Short listing

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

Short recursive listing

```
/home/cis90/simben $ ls -R island  
island:  
characters
```

```
island/characters:  
hurley kate sawyer
```

Listing Files & Directories

Long listing

```
/home/cis90/simben $ ls -l island  
total 4  
drwxrwxr-x. 2 simben90 cis90 4096 Mar  3 16:53 characters
```

Long recursive listing

```
/home/cis90/simben $ ls -lR island  
island/:  
total 4  
drwxrwxr-x. 2 simben90 cis90 4096 Mar  3 16:53 characters
```

```
island/characters:  
total 0  
-rw-rw-r--. 1 simben90 cis90 0 Mar  3 16:53 hurley  
-rw-rw-r--. 1 simben90 cis90 0 Mar  3 16:22 kate  
-rw-rw-r--. 1 simben90 cis90 0 Mar  3 16:24 sawyer
```

Listing Files & Directories

Making a directory tree diagram

```
/home/cis90/simben $ tree island
island
|-- characters
    |-- hurley
    |-- kate
    |-- sawyer

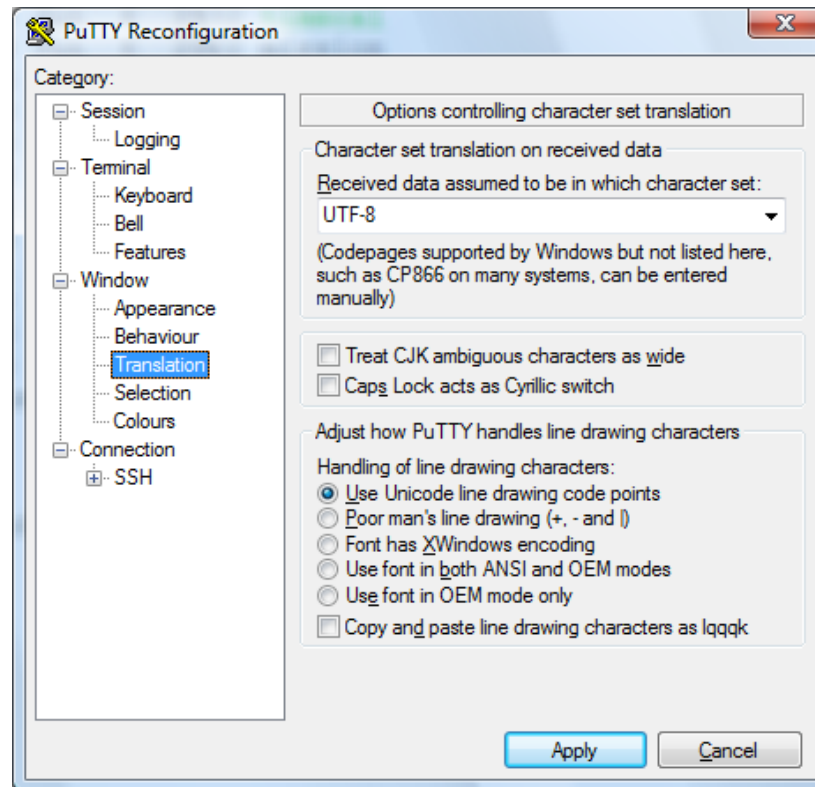
1 directory, 3 files
/home/cis90/simben $
```



Putty must be configured to use the UTF-8 translation to show line drawing characters

Managing the UNIX/Linux File System

Putty may need to be configured UTF-8 for tree command



Activity

- Return to your home directory with:

```
cd
```

- Do a long listing of the *island* directory with:

```
ls island
```

- Do a long recursive listing of the *island* directory with:

```
ls -lR island
```

- Make tree diagram of the *island* directory with:

```
tree island
```

Copying Files

Copying files

The **cp** command



#Geneva

Command syntax:

cp *<source file> <target file>*

cp *<source file> <target directory>*

cp *<source file> <target directory>/<target file>*

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

options: **-i -r**

i = warn before overwriting target files

r = recursive (copies all source sub-directories)

*Where: <source file> <target file> <target directory>
are **absolute** or **relative** pathnames*

Copying files

Copy one file to another

cp *<source file> <target file>*

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

Make a copy of the hurley file

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

Copying files

Copy multiple files to a directory

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

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

Make a new directory called backup

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

Copy three files of the four files to the new directory

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

Copying files

Copy multiple files to a directory

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

Copy all files to the new directory

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

*While parsing the shell expands *
to hurley hurley.bak kate sawyer*

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

List the four files in the new directory

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

Note: copying a file to an existing file will overwrite that file without warning!

Copy files

The **i** (interactive) option to warn about overwrites

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

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

Copying files

The **r** (recursive) option to copy an entire tree branch

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

*This directory does
not exist yet*



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

A recursive copy will copy everything in a directory (including all files and nested subdirectories) to another directory

Class Exercise

- Change to your *island* directory using an absolute path

```
cd /home/cis90/simben/island/characters/
```

Use your own username

- Make a backup copy of *kate*

```
cp kate kate2
```

- Copy *hurley* and overwrite *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
```

Moving Files

Moving Files

The **mv** command

Command syntax:

mv *<source file> <target file>*

mv *<source file> <target directory>*

mv *<source file> <target directory>/<target file>*

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

options: **-i**

i = warn before overwriting

*Where: <source file> <target file> <target directory>
are **absolute** or **relative** pathnames*

Moving Files

Renaming a file with the **mv** command

mv <original name> <new name>

This is how you rename files in UNIX/Linux!

/home/cis90/simben \$ touch iPhone iPad ProLiant Pavilion Powerege

oops ... typo!

/home/cis90/simben \$ mv Powerege PowerEdge *typo fixed by
renaming file*

/home/cis90/simben \$ ls iP* P[ra]* Pow*
iPad iPhone Pavilion PowerEdge ProLiant

successfully renamed

Moving Files

Moving a file into a directory

mv *<source file> <target directory>*

/home/cis90/simben \$ **mkdir Apple HP Dell** *Make some new directories*

/home/cis90/simben \$ **mv iPhone Apple/** *Move one file at a time into one of*
/home/cis90/simben \$ **mv iPad Apple/** *the new directories*

/home/cis90/simben \$ **ls Apple** *List the new directory the files were moved into*
iPad iPhone

Moving Files

Moving multiple files into a directory

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

```
/home/cis90/simben $ mv ProLiant Pavilion PowerEdge HP/
```

Moving multiple files at once into a directory

Moving Files

The **mv** command

Listing the contents of multiple directories to verify file moves

```
/home/cis90/simben $ ls Apple HP Dell
```

Apple:

iPad iPhone

Dell:

PowerEdge

HP:

Pavilion ProLiant

```
/home/cis90/simben $ tree Apple HP Dell
```

Apple

|-- iPad

`-- iPhone

HP

|-- Pavilion

`-- ProLiant

Dell

`-- PowerEdge

0 directories, 5 files

Class Exercise

- Change to your *island* directory using an relative path

```
cd  
cd island/characters/
```

- 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`)

Removing Files

Removing Files

The **rm** and **rmdir** commands

Removing files:

rm <file-pathname> ...

The ... (ellipses) mean you can specify more than one filename per command

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

i = prompt before remove

r = recursive (delete subdirectories)

f = force (never prompt)

rmdir <directory-pathname> ...

Directories must be empty for this to work

Removing Files

The **rm** and **rmdir** commands

Remove a file:

```
/home/cis90/simben $ touch junk1 junk2 junk3 junk4  
/home/cis90/simben $ ls junk*  
junk1  junk2  junk3  junk4
```

*Create four
test files*

```
/home/cis90/simben $ rm junk1  
/home/cis90/simben $ ls junk*  
junk2  junk3  junk4
```

Remove one of them

Note: the file is removed without warning!

Removing Files

Using the `i` option to interactively remove multiple files

Remove one or more files interactively:

```
/home/cis90/simben $ rm -i junk*
```

```
rm: remove regular empty file `junk2'? y Remove just the junk2 file
```

```
rm: remove regular empty file `junk3'? n
```

```
rm: remove regular empty file `junk4'? n
```

```
/home/cis90/simben $ ls junk* Verify it was removed
```

```
junk3  junk4
```

Removing Files

The **rmdir** command

Use **rmdir** to remove a directory

```
/home/cis90/simben $ mkdir junkdir1 Make a test directory
/home/cis90/simben $ touch junkdir1/junk6 Put a test file in new directory

/home/cis90/simben $ rmdir junkdir1 Try to remove non-empty directory
rmdir: junkdir1: Directory not empty

/home/cis90/simben $ rm junkdir1/junk6 Remove file in directory
/home/cis90/simben $ rmdir junkdir1 Remove empty directory
/home/cis90/simben $
```

Directories must be empty to be removed by rmdir

Class Exercise

- Change to your home directory

```
cd
```

- Create some test files

```
touch junk1 junk2 junk3 junk4  
ls junk*
```

- Remove one

```
rm junk1  
ls junk*
```

- Remove the others

```
rm junk[234]  
ls junk*
```

linking files

Linking files

The **ln** command

Command syntax:

ln *<existing-name>* *<new-name>*

options: -s

s = symbolic link (like Windows shortcut)

With UNIX there are hard and soft (symbolic) links

Linking files

Hard links

Creating a "hard" link

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

```
/home/cis90/simben $ echo "Chocolate Licorice Taffy Jelly Beans" > sweets
/home/cis90/simben $ cat sweets
Chocolate Licorice Taffy Jelly Beans
```

```
/home/cis90/simben $ ln sweets dulces Hard link dulces to sweets
/home/cis90/simben $ ls -il sweets dulces
100176 -rw-rw-r-- 2 simben90 cis90 37 Mar 14 09:29 dulces
100176 -rw-rw-r-- 2 simben90 cis90 37 Mar 14 09:29 sweets
```

same inode *number of hard linked files*

*Hard links allows **multiple** filenames for the **same** file.
The link count on a long listing tells you how many
names the file has.*

Linking files

Hard links

Creating a "hard" link

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

```
/home/cis90/simben $ ln sweets candy
```

Hard link candy to dulces

```
/home/cis90/simben $ ls -il sweets dulces candy
```

```
100176 -rw-rw-r-- 3 simben90 cis90 37 Mar 14 09:29 candy
100176 -rw-rw-r-- 3 simben90 cis90 37 Mar 14 09:29 dulces
100176 -rw-rw-r-- 3 simben90 cis90 37 Mar 14 09:29 sweets
```

same inode

number of hard linked files

```
/home/cis90/simben $ ln sweets bonbons
```

Hard link bonbons to sweets

```
/home/cis90/simben $ ls -il sweets dulces candy bonbons
```

```
100176 -rw-rw-r-- 4 simben90 cis90 37 Mar 14 09:29 bonbons
100176 -rw-rw-r-- 4 simben90 cis90 37 Mar 14 09:29 candy
100176 -rw-rw-r-- 4 simben90 cis90 37 Mar 14 09:29 dulces
100176 -rw-rw-r-- 4 simben90 cis90 37 Mar 14 09:29 sweets
```

same inode

number of hard linked files

Linking files

Hard links

The . and .. directories are hard links!

```
/home/cis90/simben $ ls -ldi . /home/cis90/simben
```

```
98306 drwxr-xr-x 10 simben90 cis90 4096 Mar 14 09:41 .
98306 drwxr-xr-x 10 simben90 cis90 4096 Mar 14 09:41 /home/cis90/simben
```

same inode

*number of hard linked files
(includes the . file and .. files in sub-directories)*

```
/home/cis90/simben $ ls -ldi .. /home/cis90/
```

```
2395394 drwxr-x--- 42 rsimms cis90 4096 Mar 6 08:17 ..
2395394 drwxr-x--- 42 rsimms cis90 4096 Mar 6 08:17 /home/cis90/
```

same inode

*number of hard linked files
(includes the . file and .. files in sub-directories)*

Hard links allows **multiple** filenames for the **same** file.

Note the hidden . and .. files different filenames for the same directories

Linking files

Hard links

Creating a "hard" link

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

```
/home/cis90/simben $ rm sweets
/home/cis90/simben $ ls -il sweets dulces candy bonbons
ls: sweets: No such file or directory
100176 -rw-rw-r-- 3 simben90 cis90 37 Mar 14 09:29 bonbons
100176 -rw-rw-r-- 3 simben90 cis90 37 Mar 14 09:29 candy
100176 -rw-rw-r-- 3 simben90 cis90 37 Mar 14 09:29 dulces
```

↑ *same inode*

↑ *number of hard linked files*

Removing one of the hard linked files will not delete any of the other hard links, it will just decrement the number of hard links shown in a long listing

Linking Files

Symbolic "Soft" Links

Creating a "soft" (symbolic) link

ln -s <existing-name> <new-name>

The s option for a symbolic link

```
/home/cis90/simben $ ln -s /etc/httpd/conf/httpd.conf apache
```

Creating a symbolic link to the Apache configuration file

```
/home/cis90/simben $ ls -li apache /etc/httpd/conf/httpd.conf
```

```
100172 lrwxrwxrwx 1 simben90 cis90 26 Mar 14 09:13 apache -> /etc/httpd/conf/httpd.conf
1280166 -rw-r--r-- 1 root root 33776 Feb 29 18:45 /etc/httpd/conf/httpd.conf
```

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.

Linking Files

Symbolic "Soft" Links

```
/home/cis90/simben $ ls -li apache /etc/httpd/conf/httpd.conf
100172 lrwxrwxrwx 1 simben90 cis90    26 Mar 14 09:13 apache -> /etc/httpd/conf/httpd.conf
1280166 -rw-r--r-- 1 root      root    33776 Feb 29 18:45 /etc/httpd/conf/httpd.conf
```

```
/home/cis90/simben $ head -n 5 apache
#
# This is the main Apache server configuration file.  It contains the
# configuration directives that give the server its instructions.
# See <URL:http://httpd.apache.org/docs/2.2/> for detailed information.
# In particular, see
```

```
/home/cis90/simben $ head -n 5 /etc/httpd/conf/httpd.conf
#
# This is the main Apache server configuration file.  It contains the
# configuration directives that give the server its instructions.
# See <URL:http://httpd.apache.org/docs/2.2/> for detailed information.
# In particular, see
```

From Benji's home directory, he can now refer to the Apache configuration file using either `apache` or `/etc/httpd/conf/httpd.conf`

Class Exercise

- Create a file named candy using:
`> candy`
- Create a hard link to candy named sweets using:
`ln candy sweets`
- Create a soft link to candy named dulces using:
`ln -s candy dulces`
- List them using:
`ls -li candy sweets dulces`

Assignment





Lab 6: Reorganizing Files

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

Discuss this: <http://opus.cabrillo.edu/forum/viewforum.php?f=46>

Check this forum for any lab-breaking news about this lab. This forum is also the place to go if you get stuck, have a question or want to share something you have learned about this lab.

Procedure

Log on to this Open server as that you have a confirmed link shell at your disposal. Be sure you are in your home directory to start this lab. We are going to reorganize the files in that 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 guided on exactly performing this procedure. At the end of this lab you will submit your new layout by executing the command:

Submit

Part 1: Making Directories

1. Display a listing of the files in your home directory using the ls -l command.
2. Now let's make some new directories using the mkdir command:
 - a. Make a new directory named code for keeping our lab code using the mkdir command.
 - b. Make the new directory's contents using the cp option of the ls command. Do you see the two hidden files that were created with this directory?
 - c. You can make more than one new directory at a time by supplying two arguments to the mkdir command. Make two new directories, one called docs and the other called etc.
 - d. Verify that they were made in your home directory.

In this lab you will reorganize your home directory

Be careful. For this lab, the slower you go the sooner you will be done!

A full-page background image showing a sunset over a beach. The sky is filled with vibrant orange, pink, and purple clouds. The sun is low on the horizon, casting a warm glow. To the right, a dark, silhouetted cliff rises from the beach. The foreground shows the wet sand of the beach reflecting the colors of the sky, with some dark rocks scattered about.

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

tree

draw file tree branch

Redirection:

>

redirects stdout

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



Notes to instructor

[] Schedule end of practice test on Canvas at [\[T-30\]](#)

[] Kick off and lock out users on primary and secondary practice test systems

```
echo "/root/lock-cis90; cp /etc/nologin.bak /etc/nologin" | at \[T-30\]
```

```
echo "/root/lock-cis90" | at \[T-30\]
```

[] Canvas: availability from = [\[T-0\]](#), due & available until = [\[splashdown\]](#)

[] Canvas: remove password on real test on Canvas [\[T-0\]](#)

[] Canvas: moderate the accommodations

[] Send email on Opus to students

```
echo "/home/rsimms/cis90/test01/q29/mail-q29-T1 2 q" | at \[T-0\]
```

[] Allow logins on primary and secondary real test systems

```
echo "rm /etc/nologin" | at \[T-0\]
```

```
echo "/root/unlock-cis90" | at \[T-0\]
```

[] Shutdown primary and secondary test systems

```
echo "/root/lock-cis90; cp /etc/nologin.bak /etc/nologin" | at \[splashdown\]
```

```
echo "/root/lock-cis90" | at \[splashdown\]
```



Test 1

Backup

More Examples

Practice Tasks

For use on Opus

Task 1: Create a new directory named *birds* in your home directory. In that new directory create a sub-directory named *Antarctica*. Copy the *penguin* file from the */home/cis90/depot* directory to the new *Antarctica* directory. View the last line of the *penguin* file. Recursively remove the *birds* directory when finished.

```
/home/cis90/simben $ cd
/home/cis90/simben $ mkdir -p birds/Antarctica
/home/cis90/simben $ cp ../depot/penguin birds/Antarctica/
/home/cis90/simben $ tail -n1 birds/Antarctica/penguin
and envy your plumed pride.
/home/cis90/simben $ head -n1 birds/Antarctica/penguin
Magellanic Penguin
/home/cis90/simben $ rm -rf birds/
/home/cis90/simben $
```

Performing Task 1 from the home directory using relative pathnames only.

Practice Tasks

For use on Opus

Task 1: Create a new directory named *birds* in your home directory. In that new directory create a sub-directory named *Antarctica*. Copy the *penguin* file from the */home/cis90/depot* directory to the new *Antarctica* directory. View the last line of the *penguin* file. Recursively remove the *birds* directory when finished.

```
/home/cis90/simben $ cd
/home/cis90/simben $ mkdir birds
/home/cis90/simben $ cd birds
/home/cis90/simben/birds $ mkdir Antarctica
/home/cis90/simben/birds $ cd Antarctica
/home/cis90/simben/birds/Antarctica $ cp /home/cis90/depot/penguin .
/home/cis90/simben/birds/Antarctica $ tail -n1 penguin
and envy your plumed pride.
/home/cis90/simben/birds/Antarctica $ cd
/home/cis90/simben $ rm -rf /home/cis90/simben/birds/
/home/cis90/simben $
```

Performing Task 1 by changing directories and using a mix of relative and absolute pathnames.

Practice Tasks

For use on Opus

Task 1: Create a new directory named *birds* in your home directory. In that new directory create a sub-directory named *Antarctica*. Copy the *penguin* file from the */home/cis90/depot* directory to the new *Antarctica* directory. View the last line of the *penguin* file. Recursively remove the *birds* directory when finished.

```
/home/cis90/depot $ cd /home/cis90/depot/  
/home/cis90/depot $ ls penguin  
penguin  
/home/cis90/depot $ mkdir -p ~/birds/Antarctica  
/home/cis90/depot $ cp penguin ~/birds/Antarctica/  
/home/cis90/depot $ tail -n1 ~/birds/Antarctica/penguin  
and envy your plumed pride.  
/home/cis90/depot $ rm -rf ~/birds  
/home/cis90/depot $
```

Performing Task 1 from the /home/cis90/depot directory and using the ~ for the home directory.

Practice Tasks

For use on Opus

Task 1: Create a new directory named *birds* in your home directory. In that new directory create a sub-directory named *Antarctica*. Copy the penguin file from the `/home/cis90/depot` directory to the new *Antarctica* directory. View the last line of the *penguin* file. Recursively remove the *birds* directory when finished.

```
/home/cis90/depot $ cd /home/cis90/depot/  
/home/cis90/depot $ ls penguin  
penguin  
/home/cis90/depot $ mkdir -p ../simben/birds/Antarctica  
/home/cis90/depot $ cp penguin ../simben/birds/Antarctica/  
/home/cis90/depot $ tail -n1 /home/cis90/simben/birds/Antarctica/penguin  
and envy your plumed pride.  
/home/cis90/depot $ rm -rf /home/cis90/simben/birds/  
/home/cis90/depot $
```

Performing Task 1 from the `/home/cis90/depot` directory and using relative and absolute pathnames.