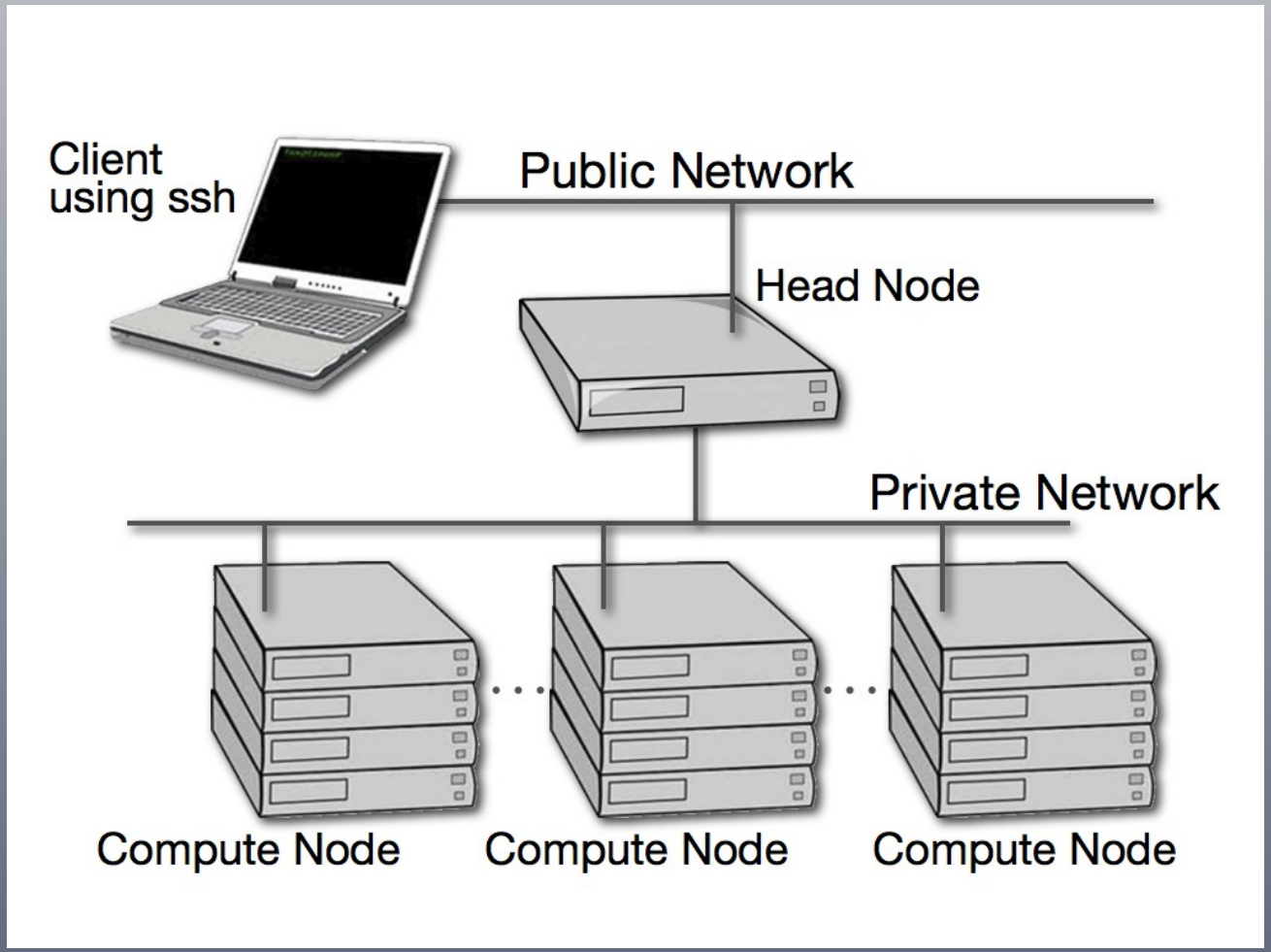
Part I

UNIX Workshop Series: Quick-Start

Objectives

- Overview – Connecting with ssh
- Command Window Anatomy
- Command Structure
- Command Examples
- Getting Help
- Files and Directories
- Wildcards, Redirection and Pipe
- Create and edit files

Overview

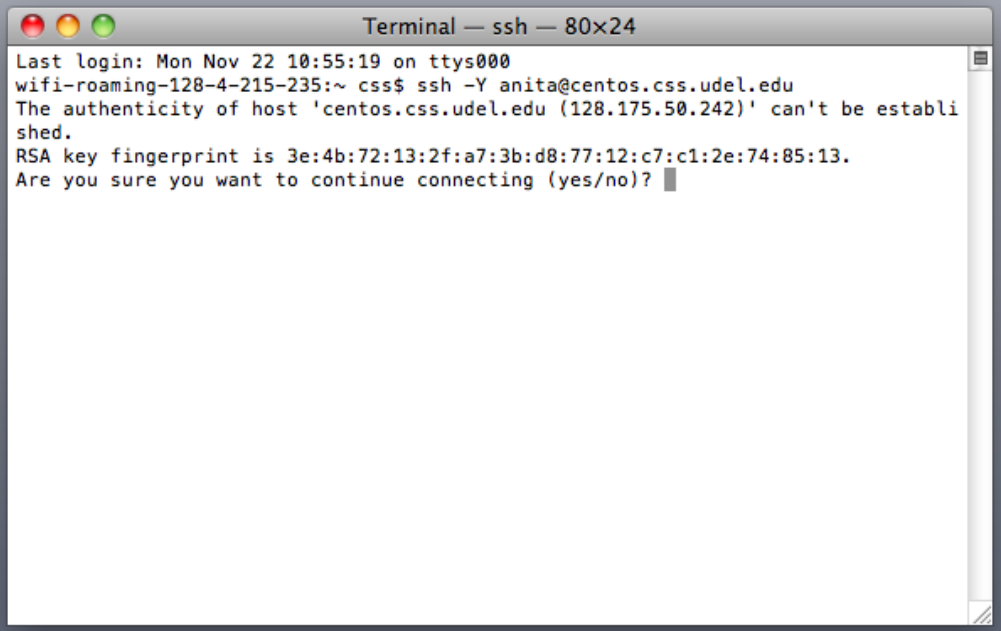

Client
using ssh
Public Network
Head Node
Private Network
Compute Node
Compute Node
Compute Node

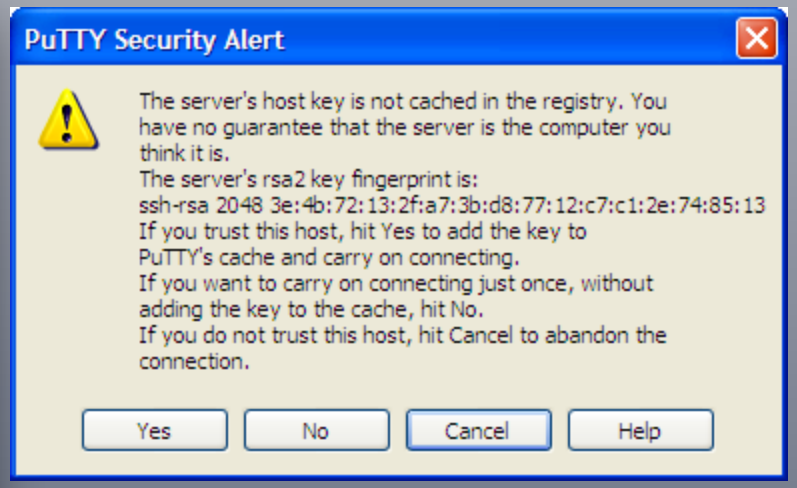
Connecting with ssh

- Open a Terminal program
  - Mac: ***Applications*** **>** ***Utilities*** **>** ***Terminal***
    `ssh –Y` **`username`**`@centos.css.udel.edu`
  - Linux: In local shell
    `ssh –Y` **`username`**`@centos.css.udel.edu`
  - Windows: Start Xming and PuTTY
    Create a saved session for the remote host name `centos.css.udel.edu` using **`username`**

Connecting with ssh

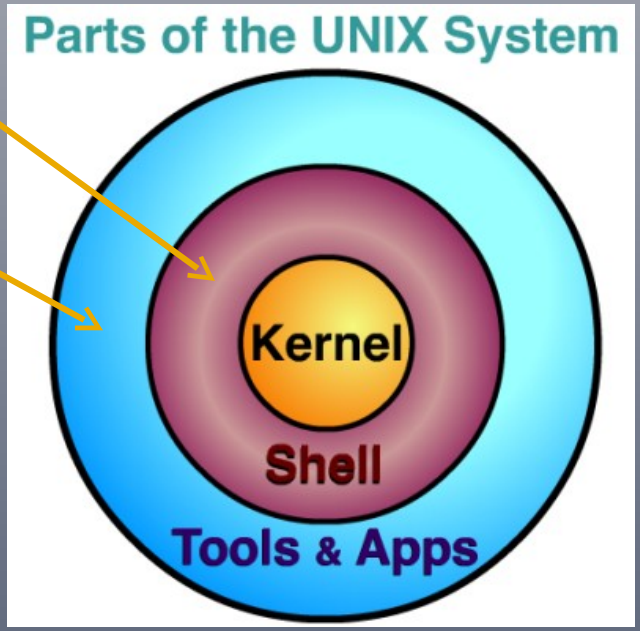
- First time you connect



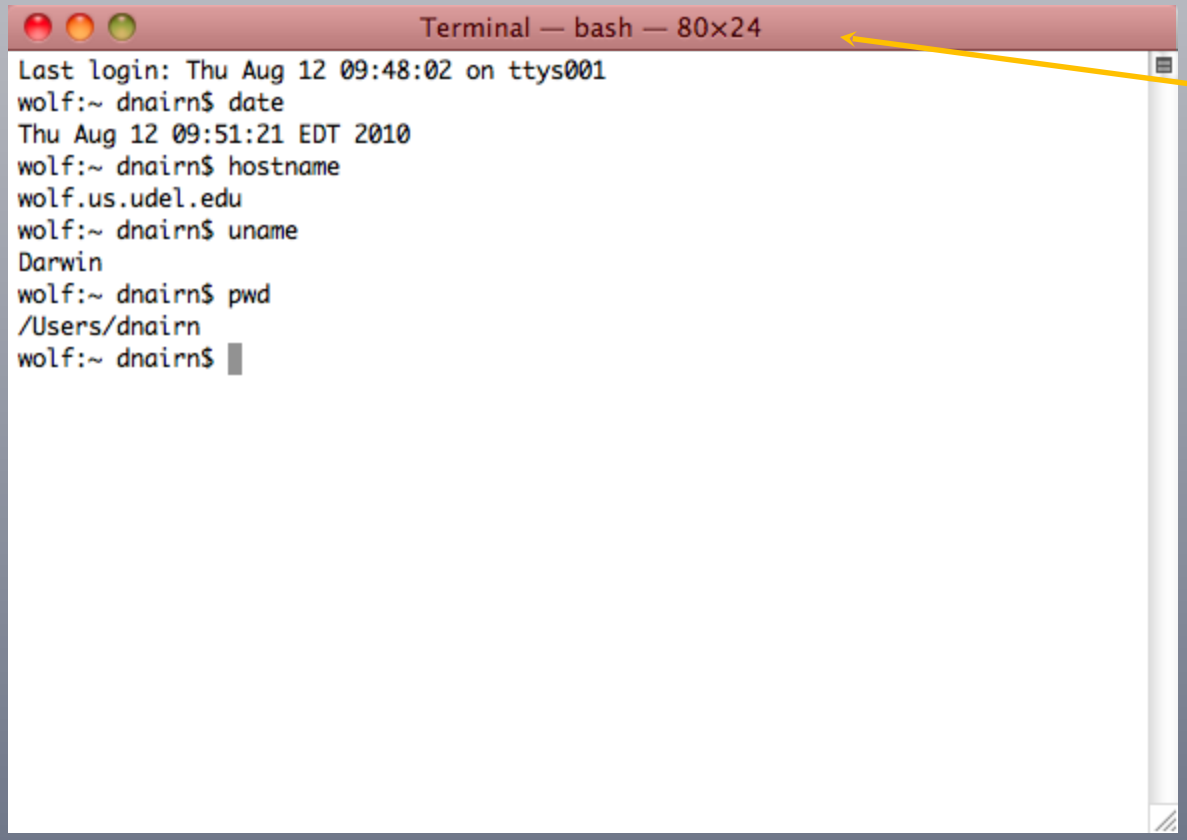


Unix Basics

- Multi-user
- Case-sensitive
- Bash shell, command-line
- Commands

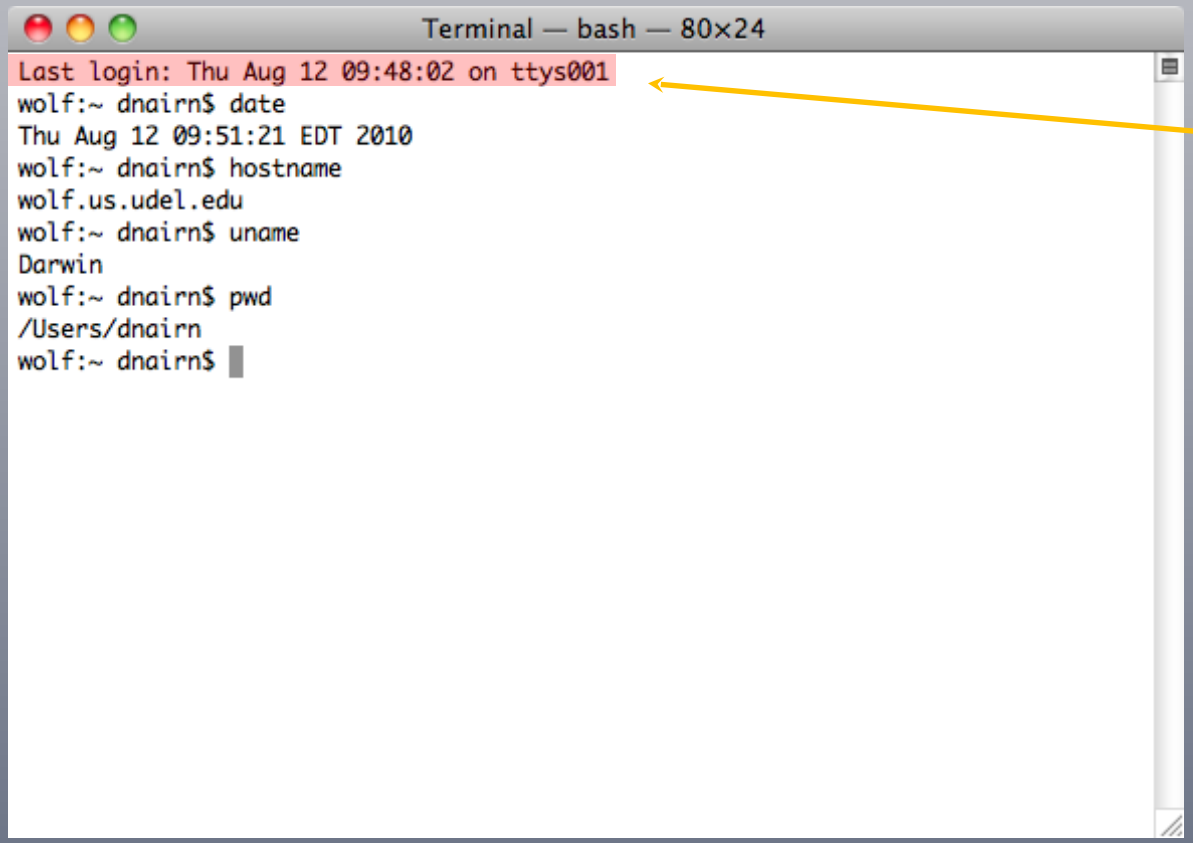


Command Window Anatomy



Click in the title bar to bring the window to the front and make it active.

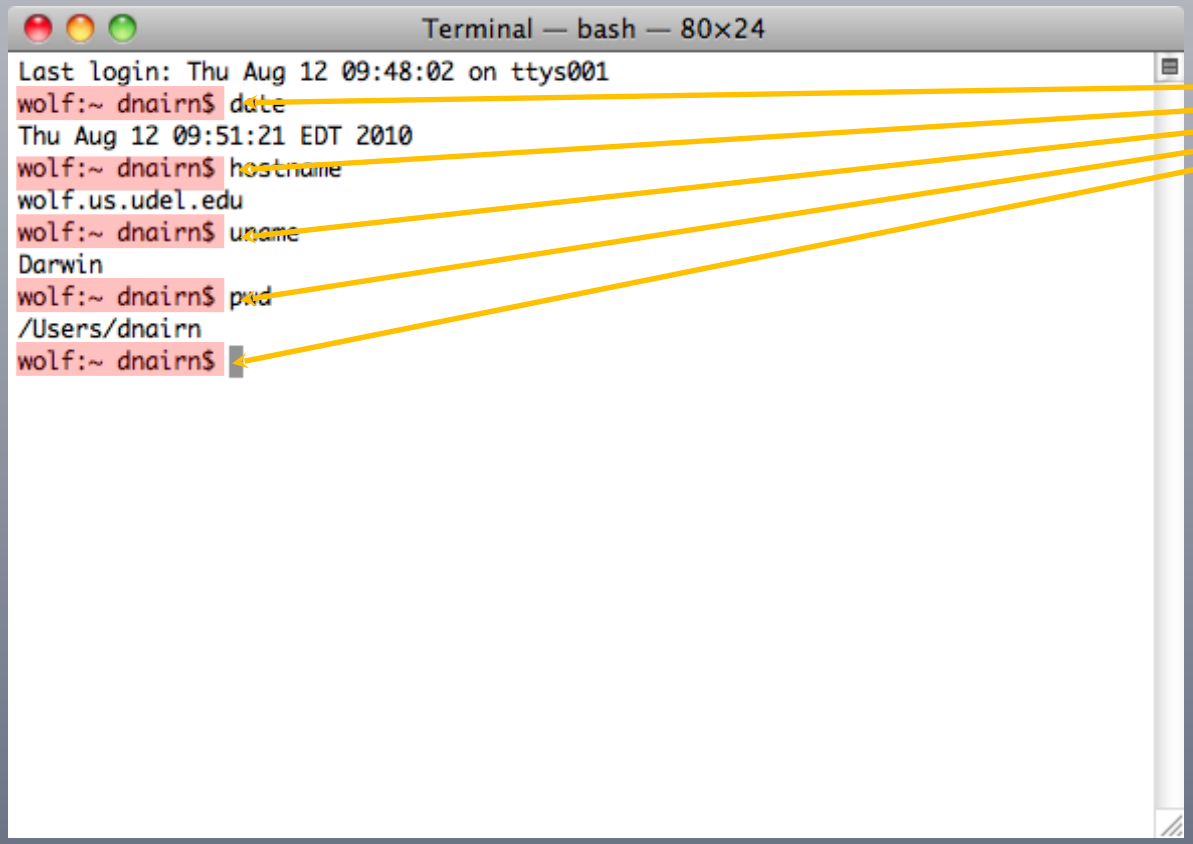
Command Window Anatomy



Login banner

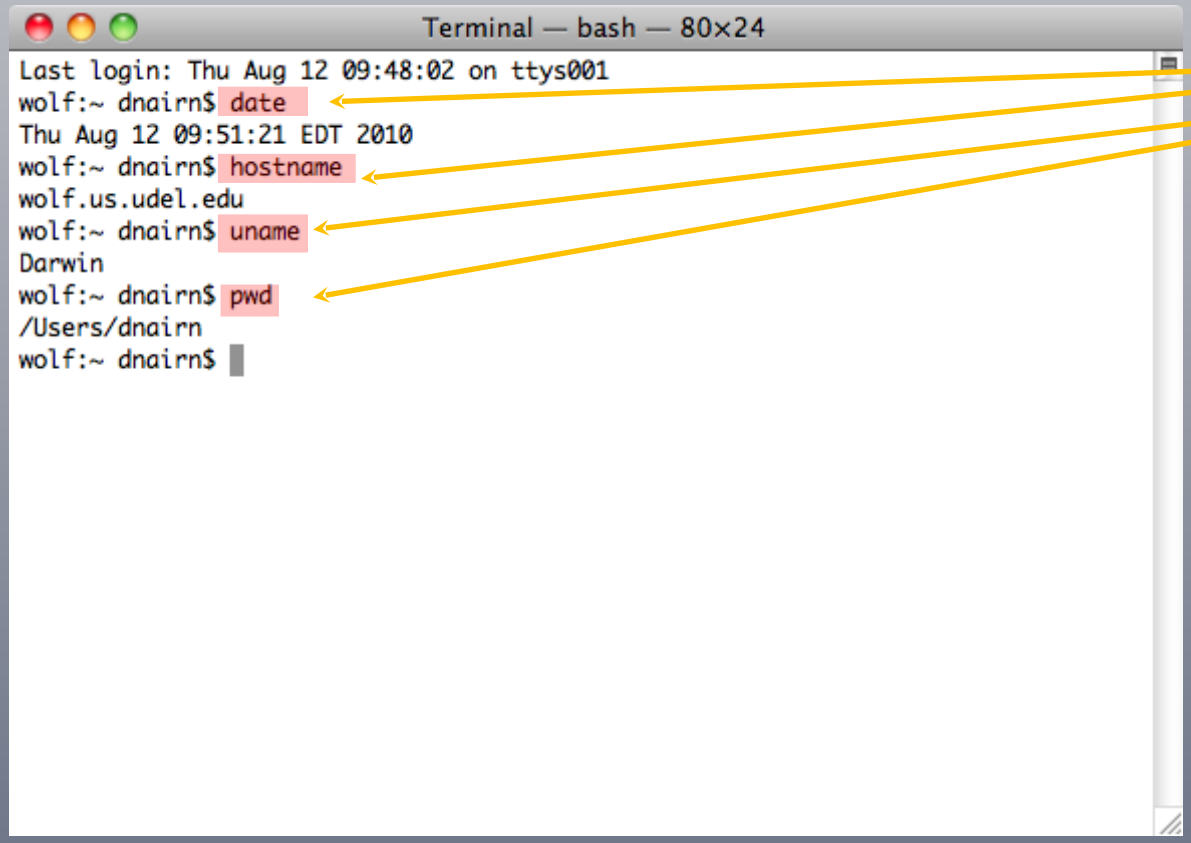
Appears as the first line of a login shell.

Command Window Anatomy



Appears at the beginning of a line and usually ends in $.

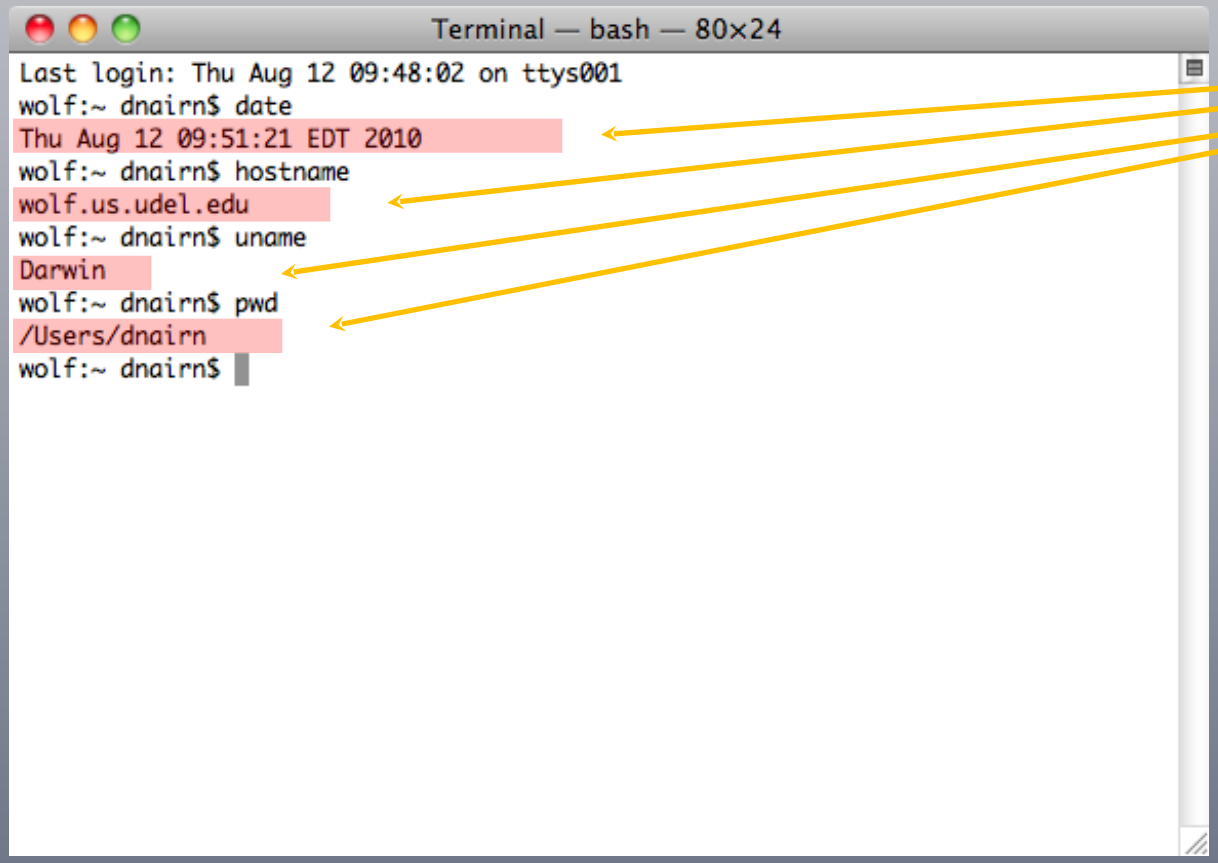
Command Window Anatomy



Command input

Place to type commands, which may have options and/or arguments.

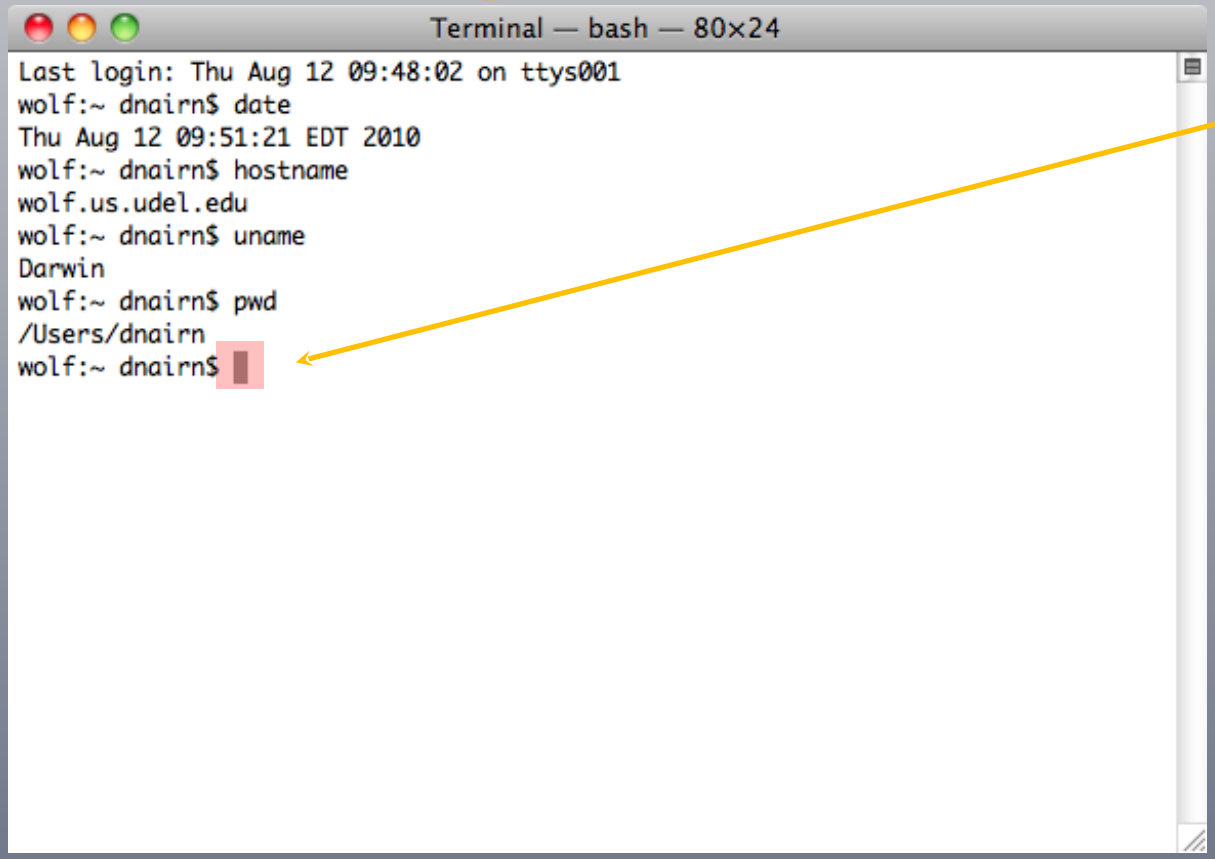
Command Window Anatomy



Command output

Place for command response, which may be many lines long.

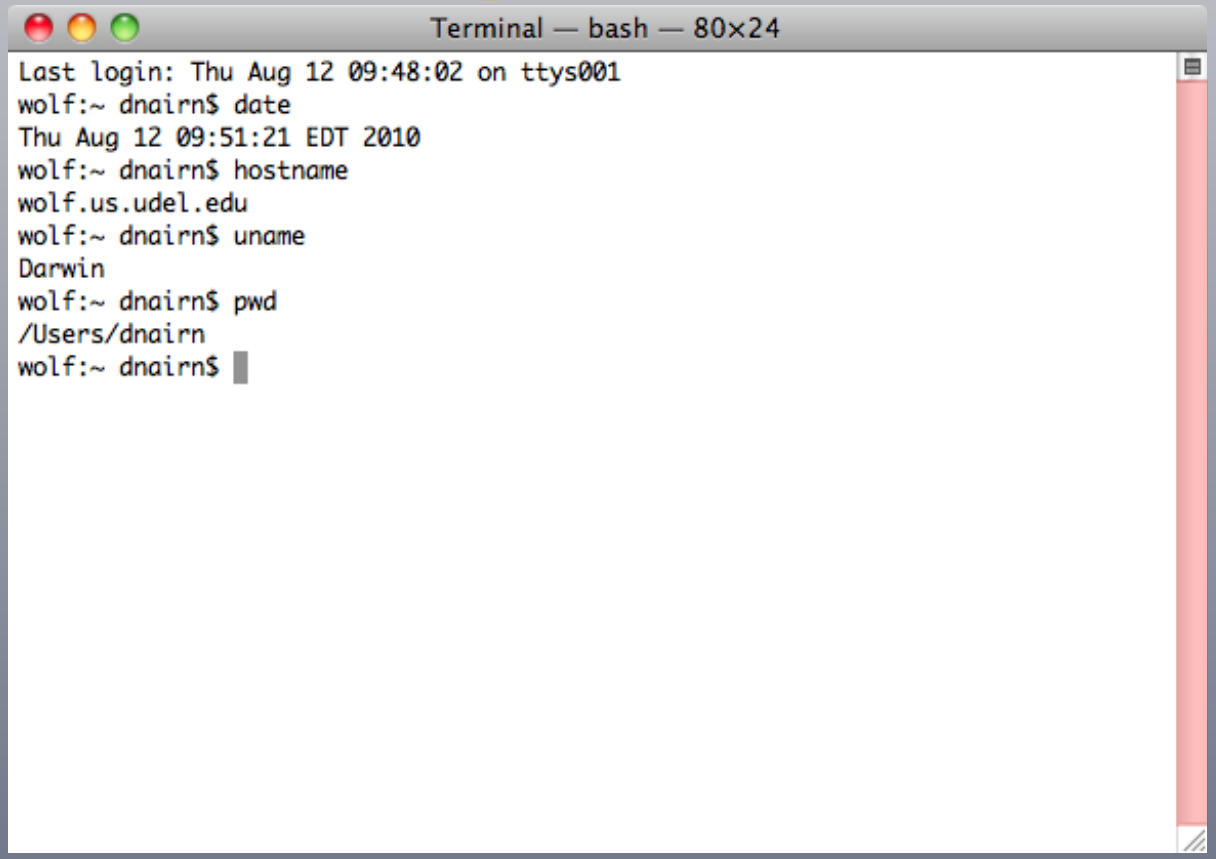
Command Window Anatomy



Input cursor

Typed text will appear at the cursor location.

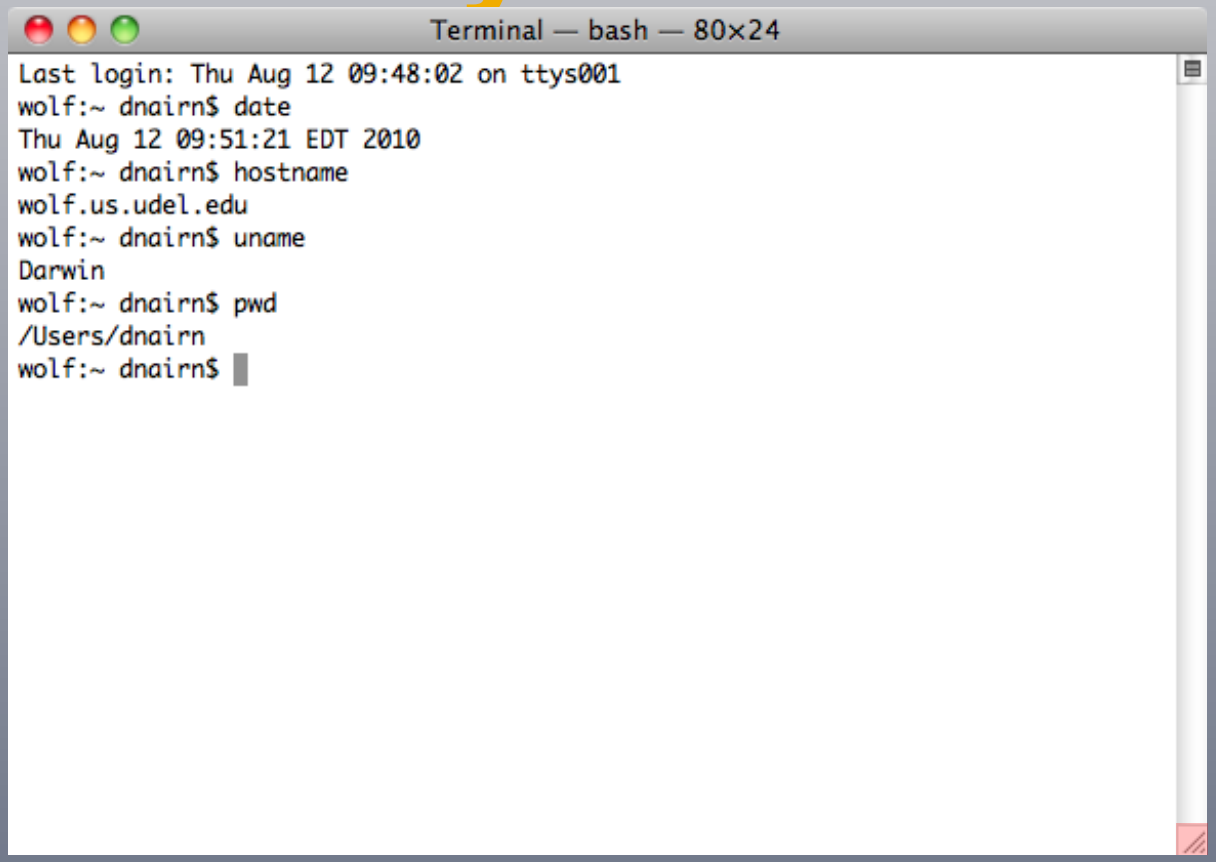
Command Window Anatomy



Scroll Bar

Will appear as needed when there are more lines than fit in the window.

Command Window Anatomy



Resize Handle

Use the mouse to change the window size from the default 80x24.

Command Structure

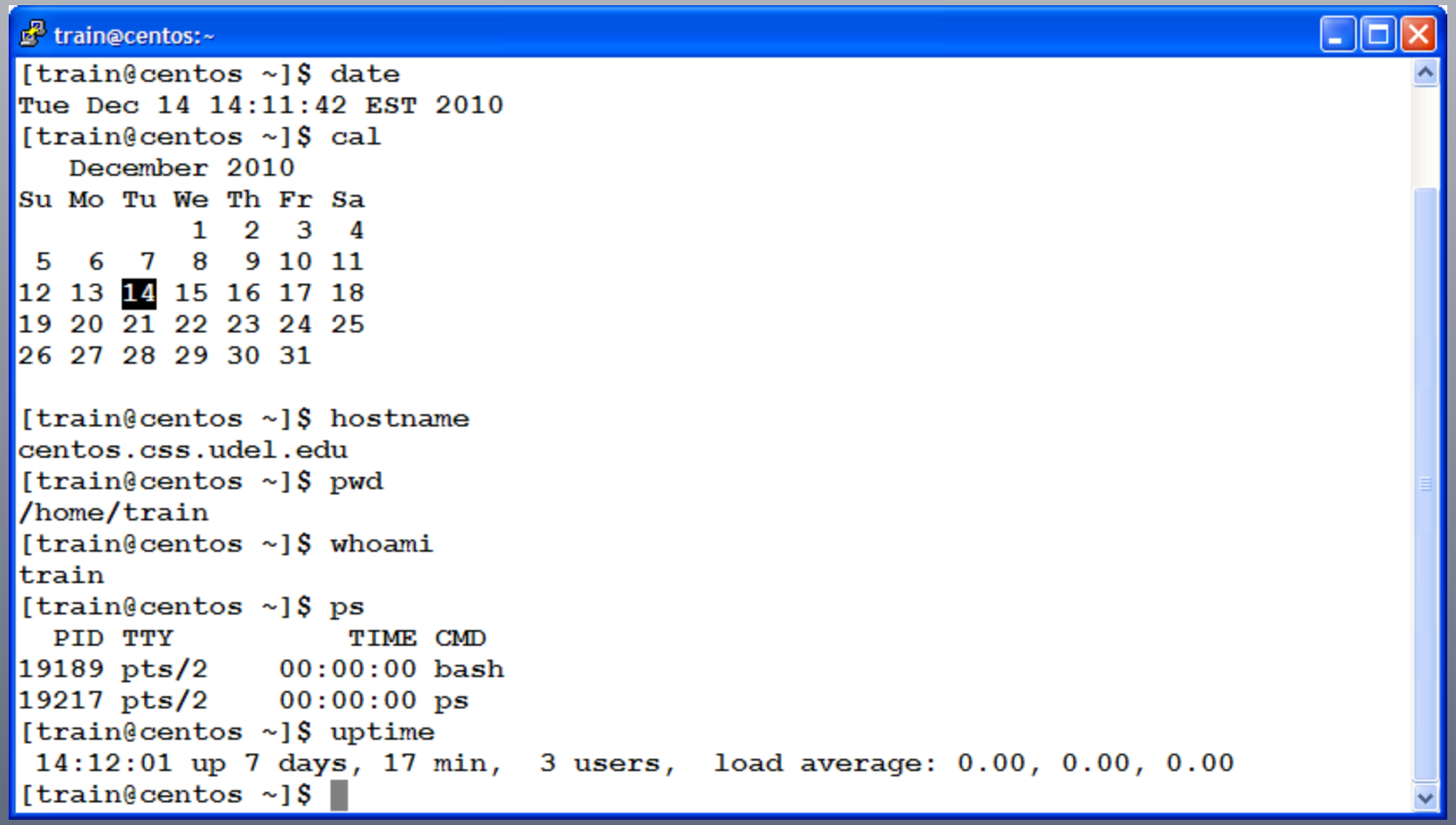
command [*arguments*]

- Commands are made up of the actual *command* and its *arguments*.

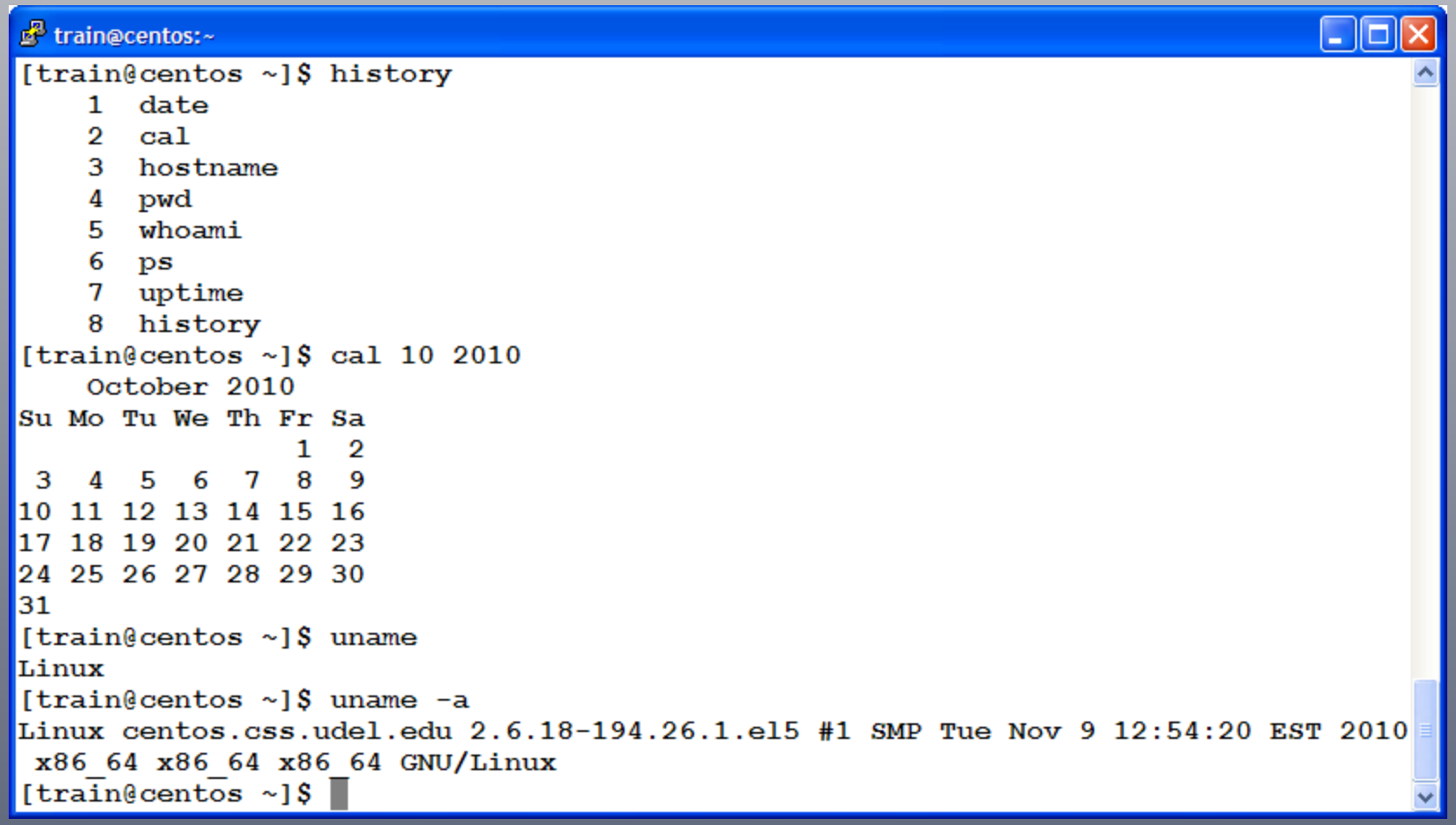
command -options [*arguments*]

- The arguments are further broken down into the command *options* which are single letters prefixed by a “-” and other *arguments* that identify data for the command.

Basic Command Examples



Advanced Command Examples



Command Input Keys Summary

At the cursor location use

to insert a character.

to enter the command.

to erase character to left.

to move to the left or right.

to retrieve previous command.

for command line completion.

Command Input Keys Summary

control C or **CTRL-c** or just **C-c**
use the control key as a shift

control U or **CTRL-u** or just **C-u**
use the control key as a shift

control D or **CTRL-d** or just **C-d**
use the control key as a shift

Command Output Summary

- Lines longer then the column width are wrapped

Use the mouse in the resize handle to increase the width of the screen and unwrap the lines.

- Lines are scrolled off the top and the prompt will appear at the bottom of the scree

Use the mouse in the scroll bar to see lines that have scrolled off the screen.

Getting Help

man *command*

- man is a command that formats and displays on-line manual pages for *command*.

info [*subject*]

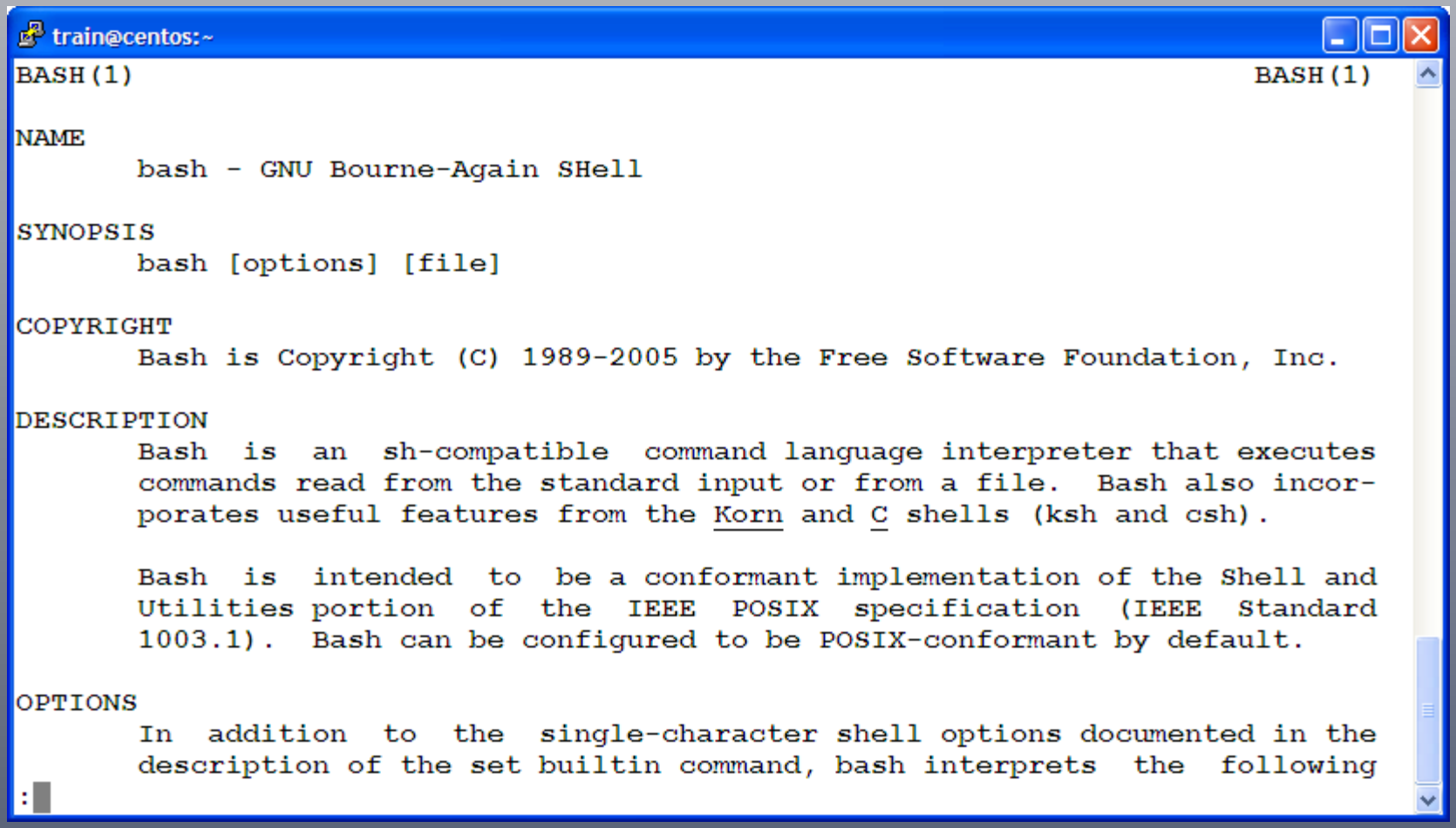
- info formats and displays online documents that are easily searchable.

apropos *keyword*

- apropos searches the whatis database for commands containing the keyword

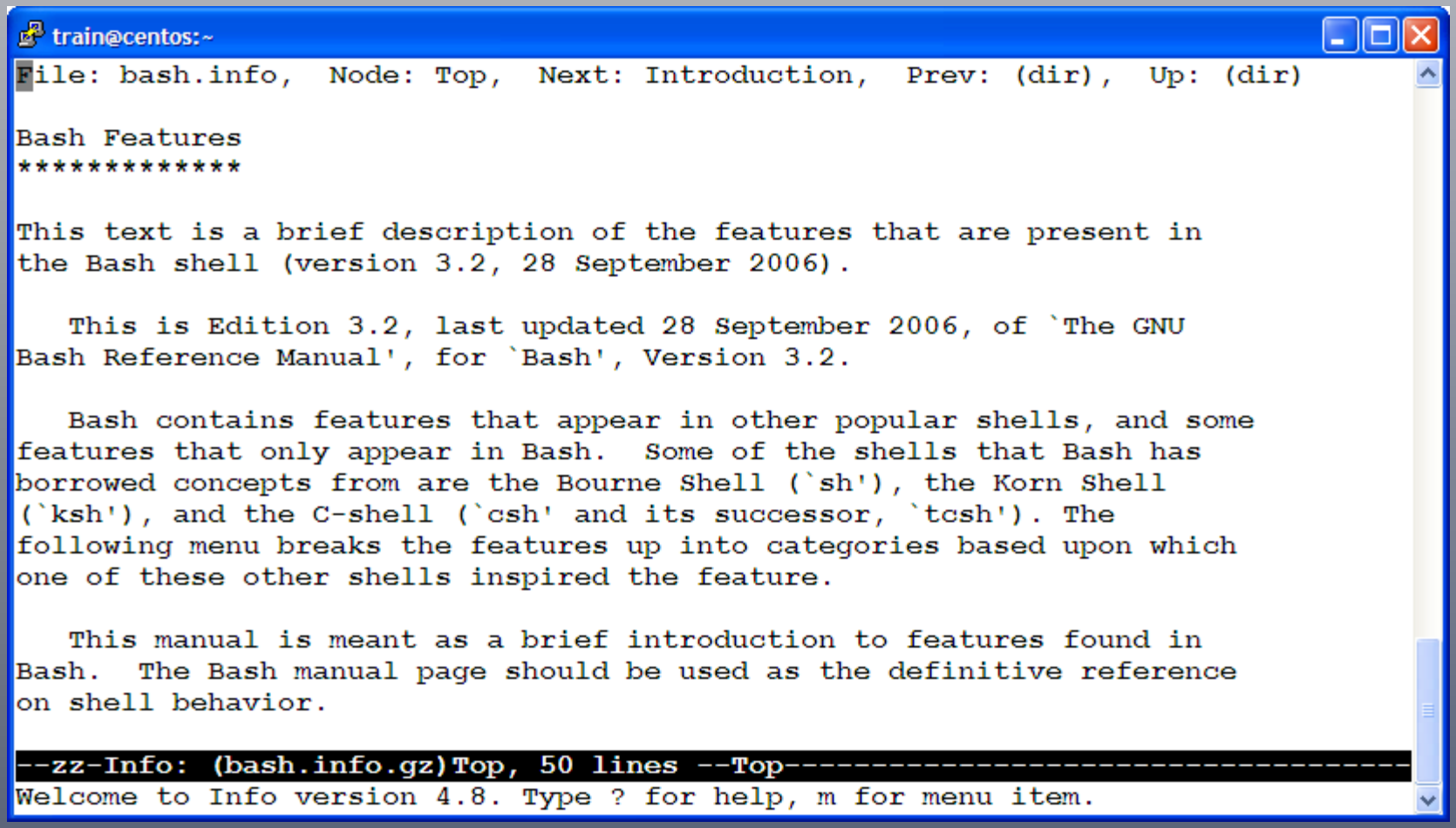
Getting Help

- man bash



Getting Help

- info bash



Getting Help: Info Keys

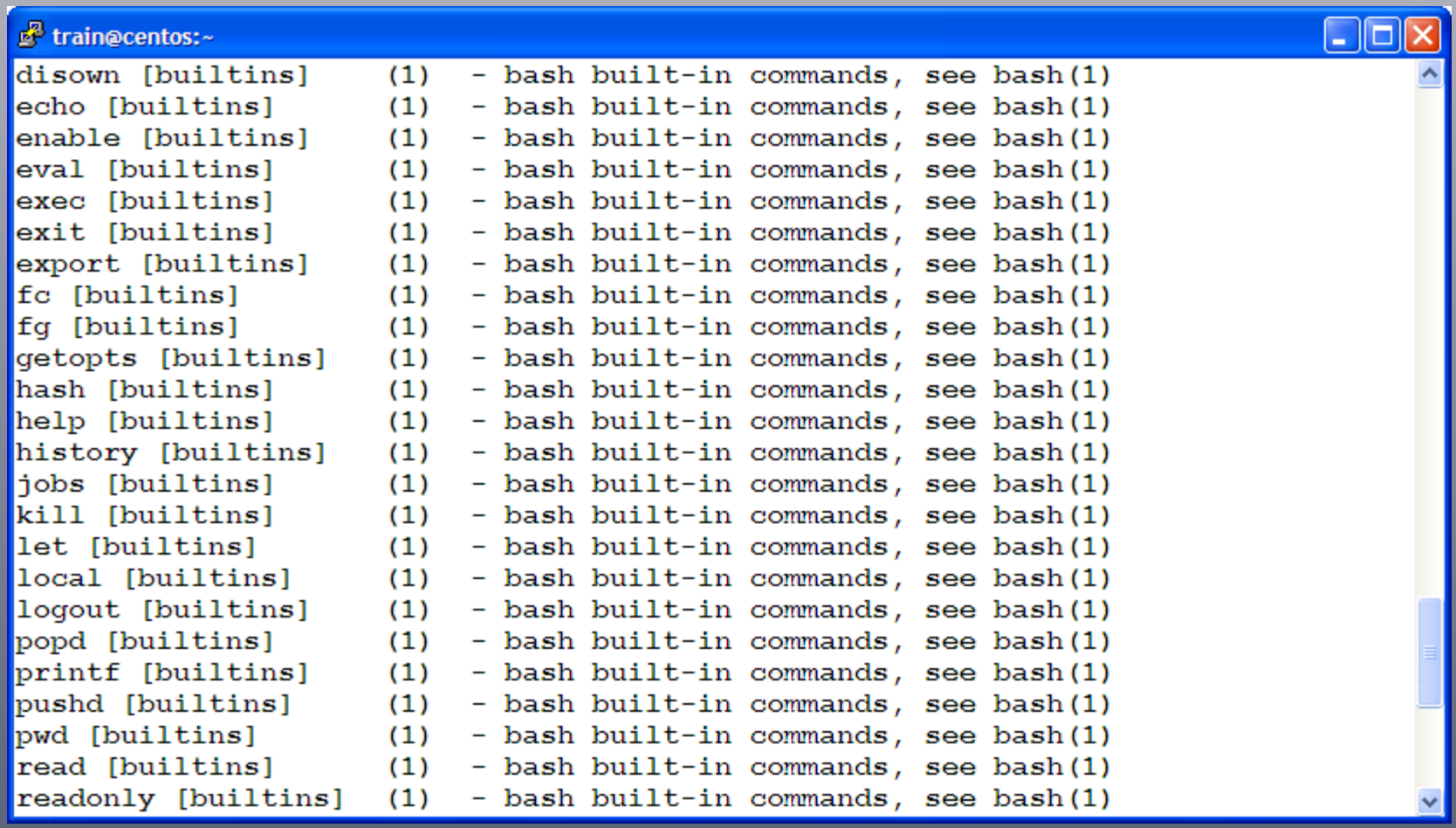
	To read linearly through all sections
delete	back up after SPC
H	‘h’ special link to help.
L	‘l’ return from help link.
Q	‘q’ to quit.

Getting Help: Info Keys

tab	Jump to next link or cross reference.
return	follow the link at the cursor.
esc tab	back up to previous link.
M	‘m’ to go to the menu.
L	‘l’ return from link.
Q	‘q’ to quit.

Getting Help

- apropos bash



Files and Directories

Files

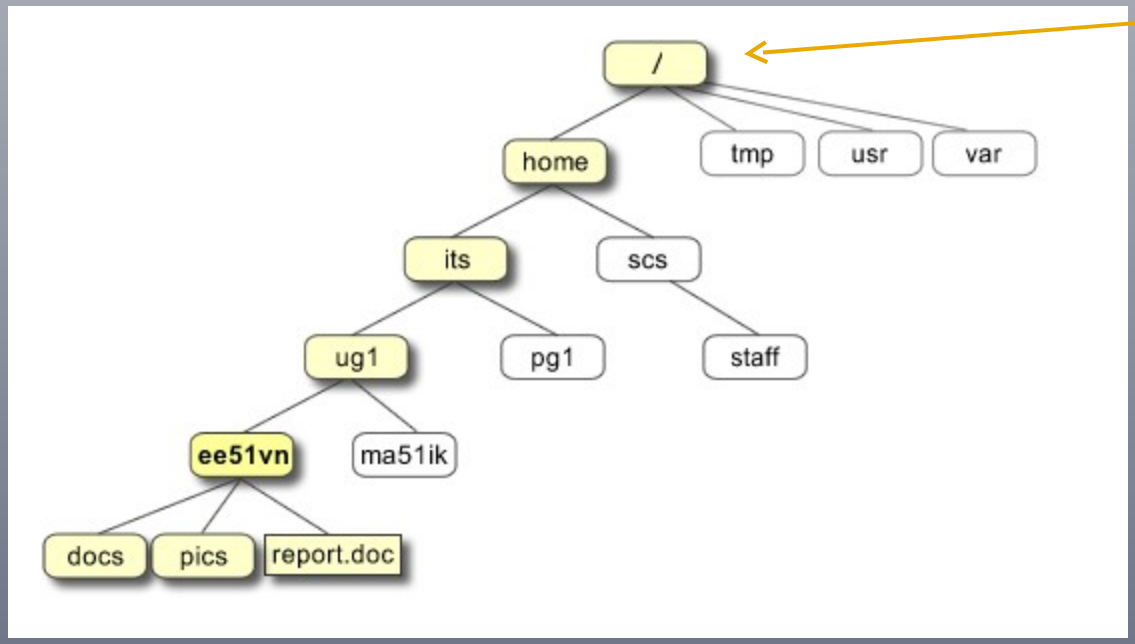
- Data in UNIX is stored in files.

Directories

- Files are organized hierarchically into directories.
- Top-level directory is called “root” represented as a slash (/).
- Every file (and directory) is listed and separated by a slash (/).

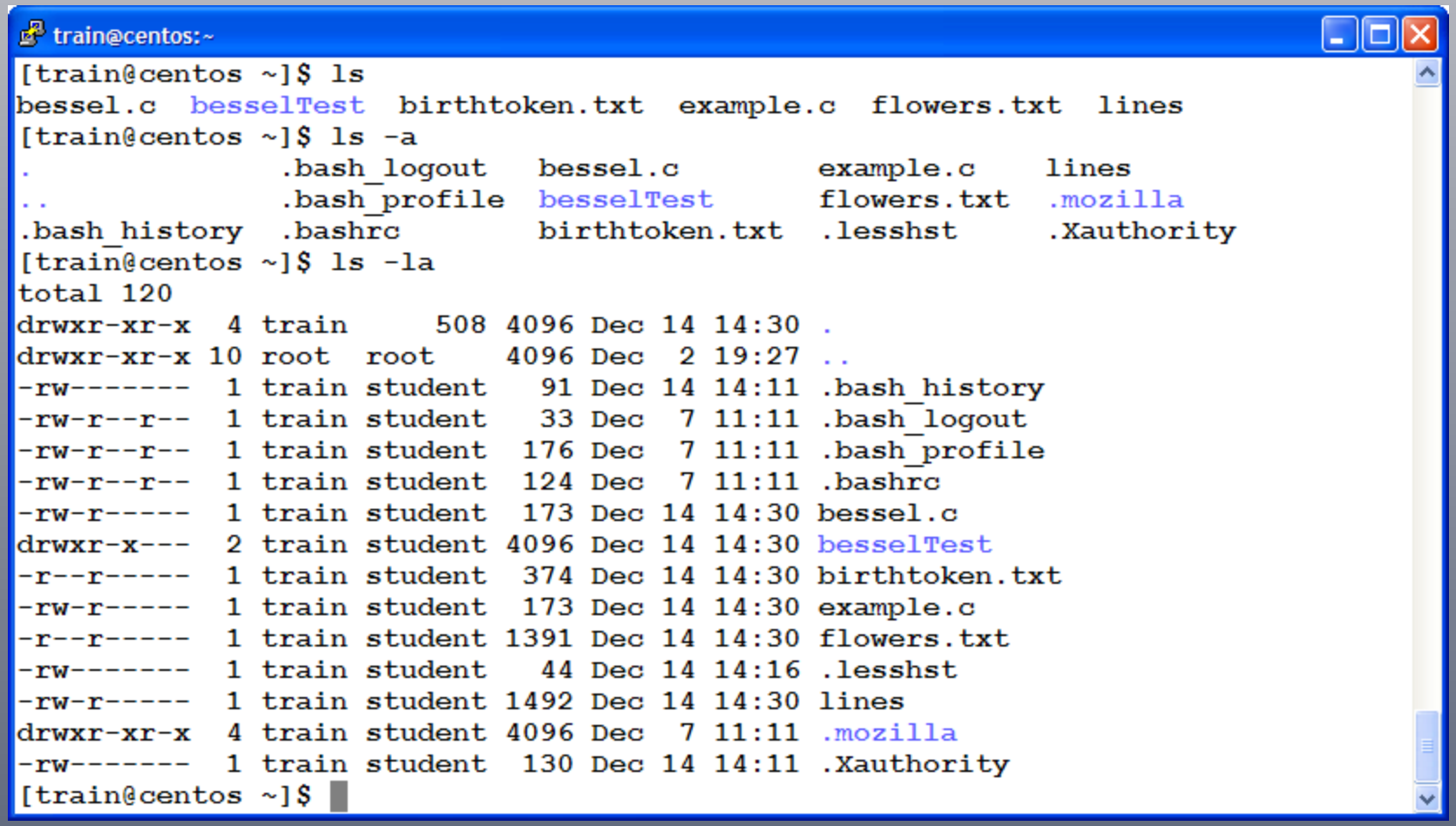
Files and Directories

The UNIX file system is like an inverted tree.

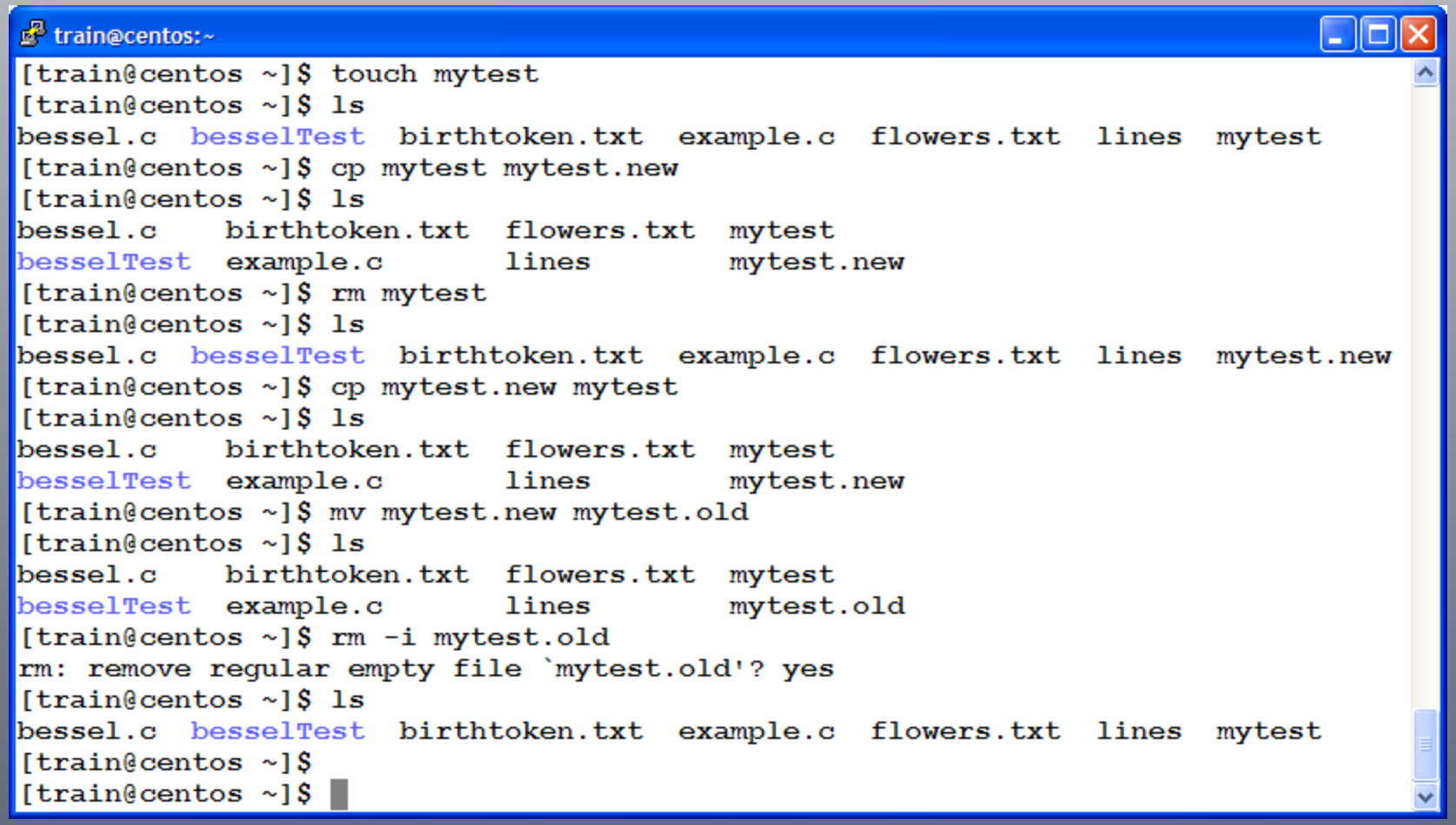


/
home/its/ug1/ee51vn/report.

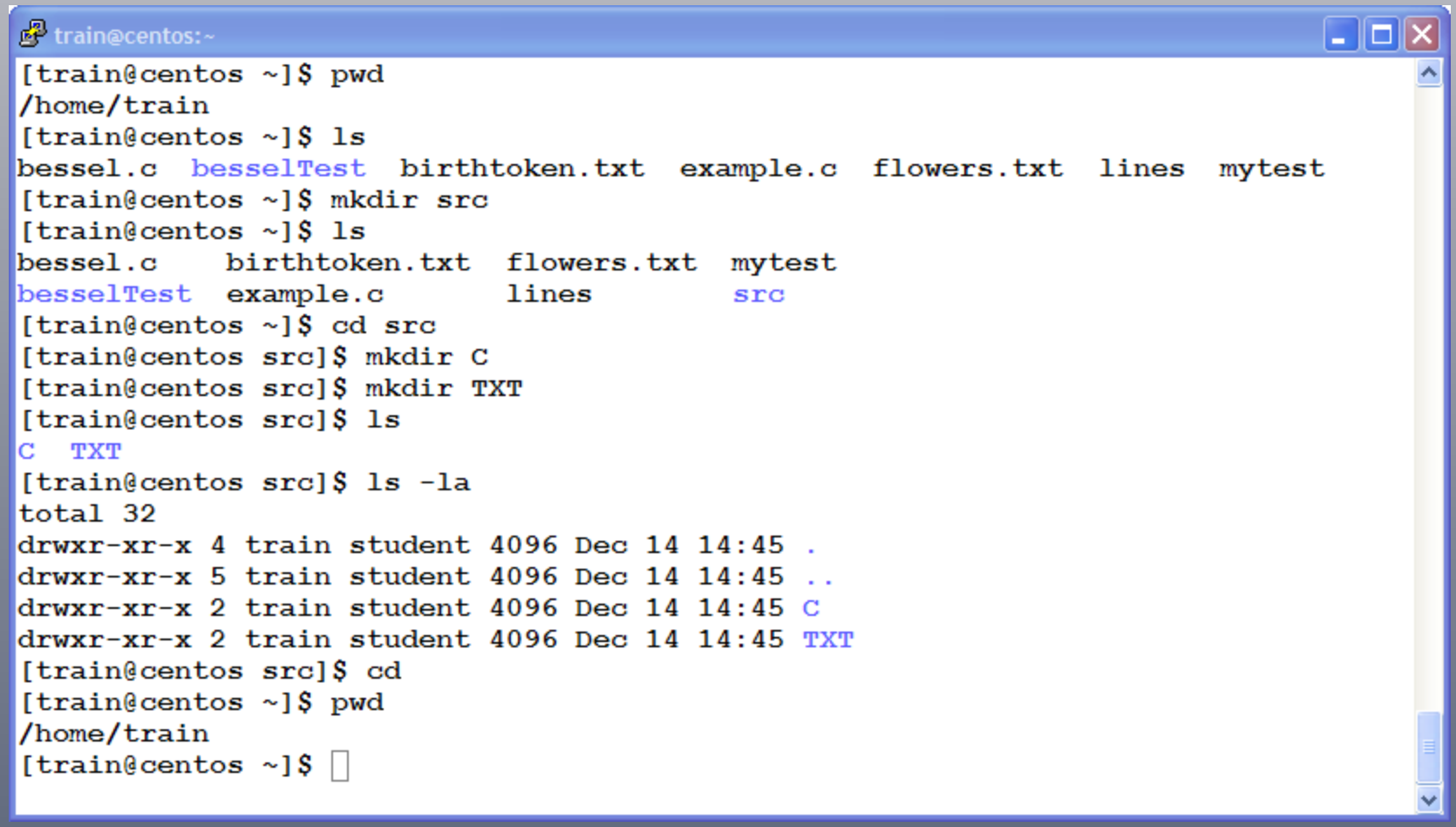
Working with Files



Working with Files

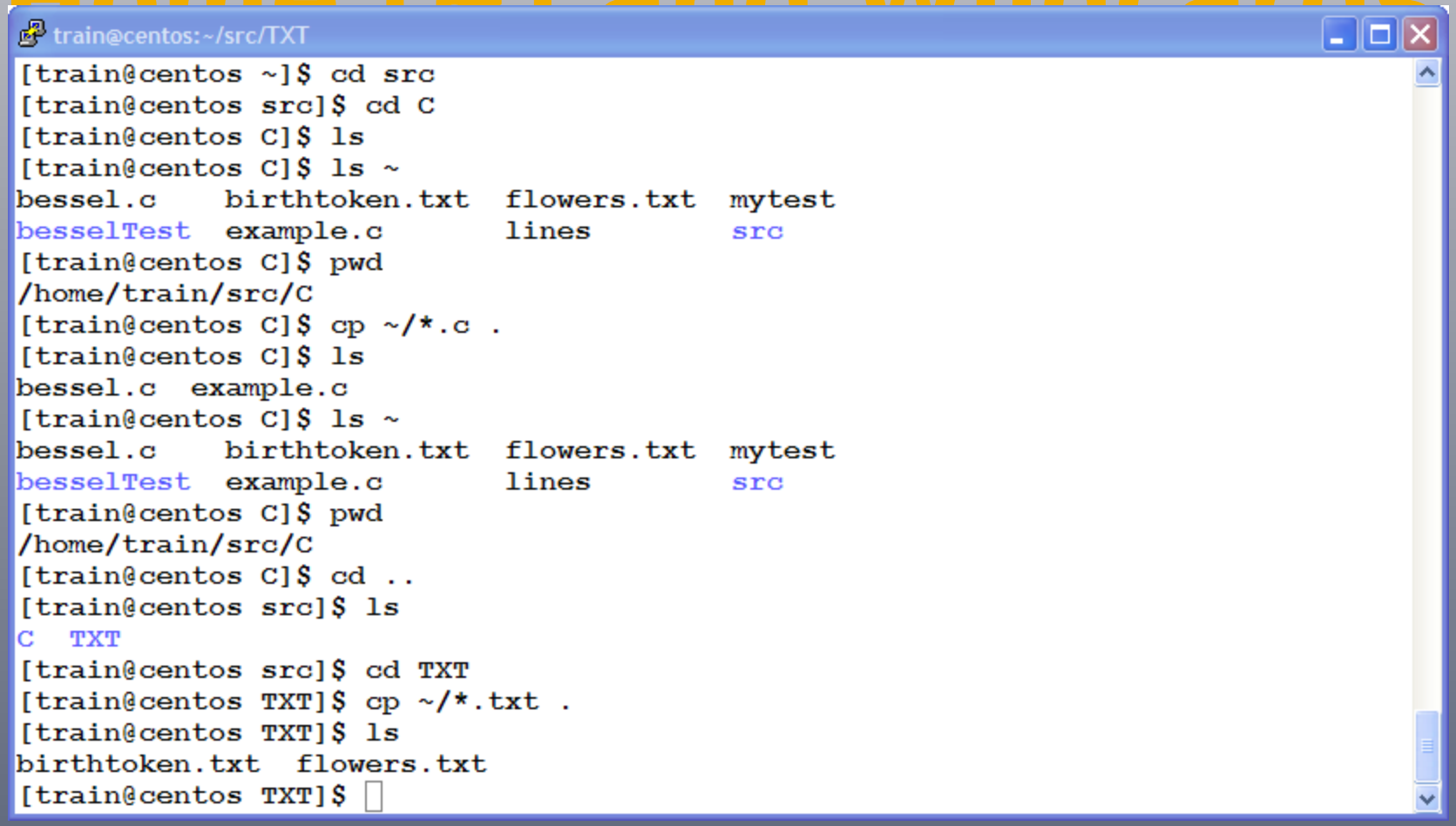


Working with Directories

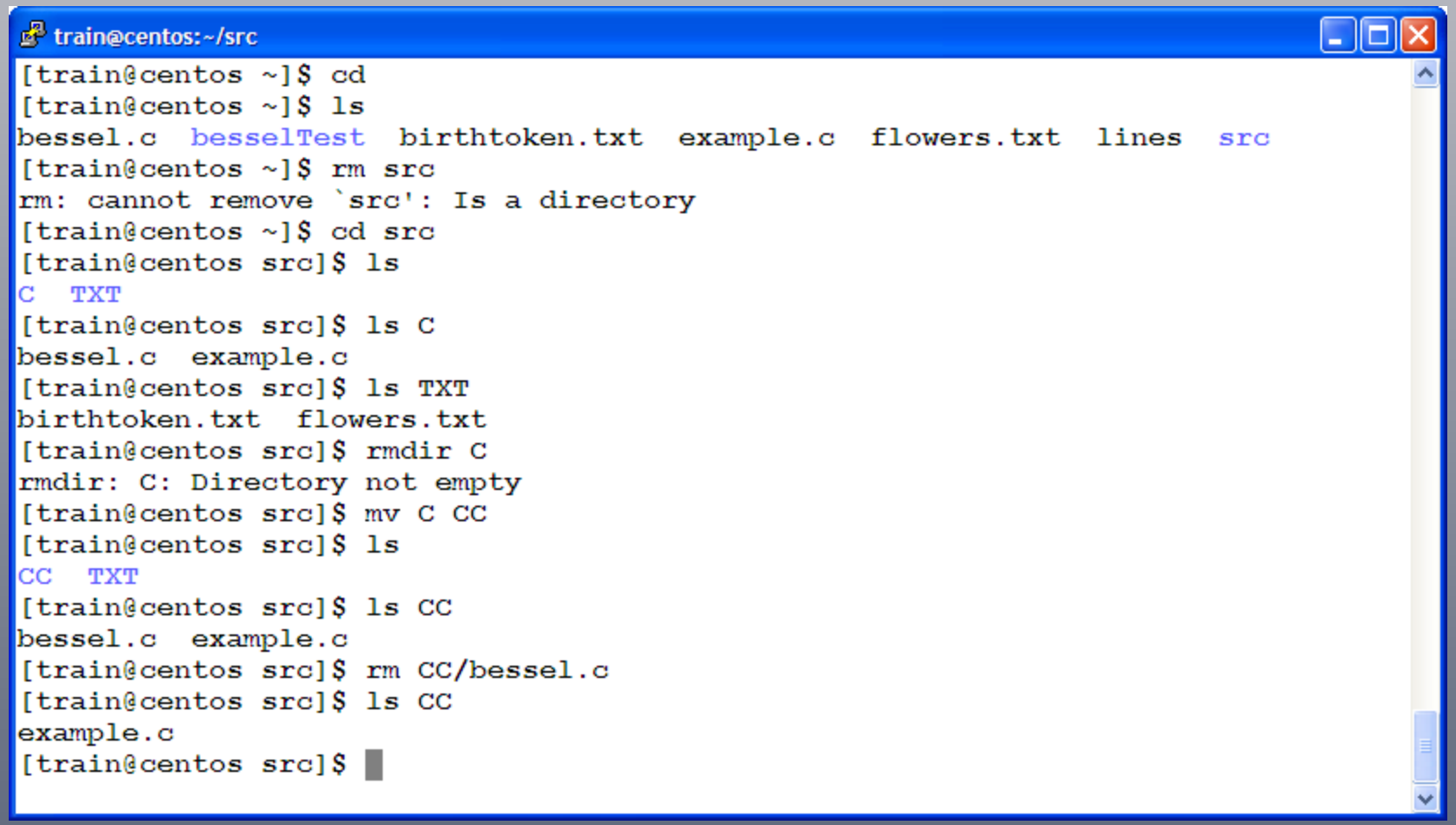


Working with Directories:

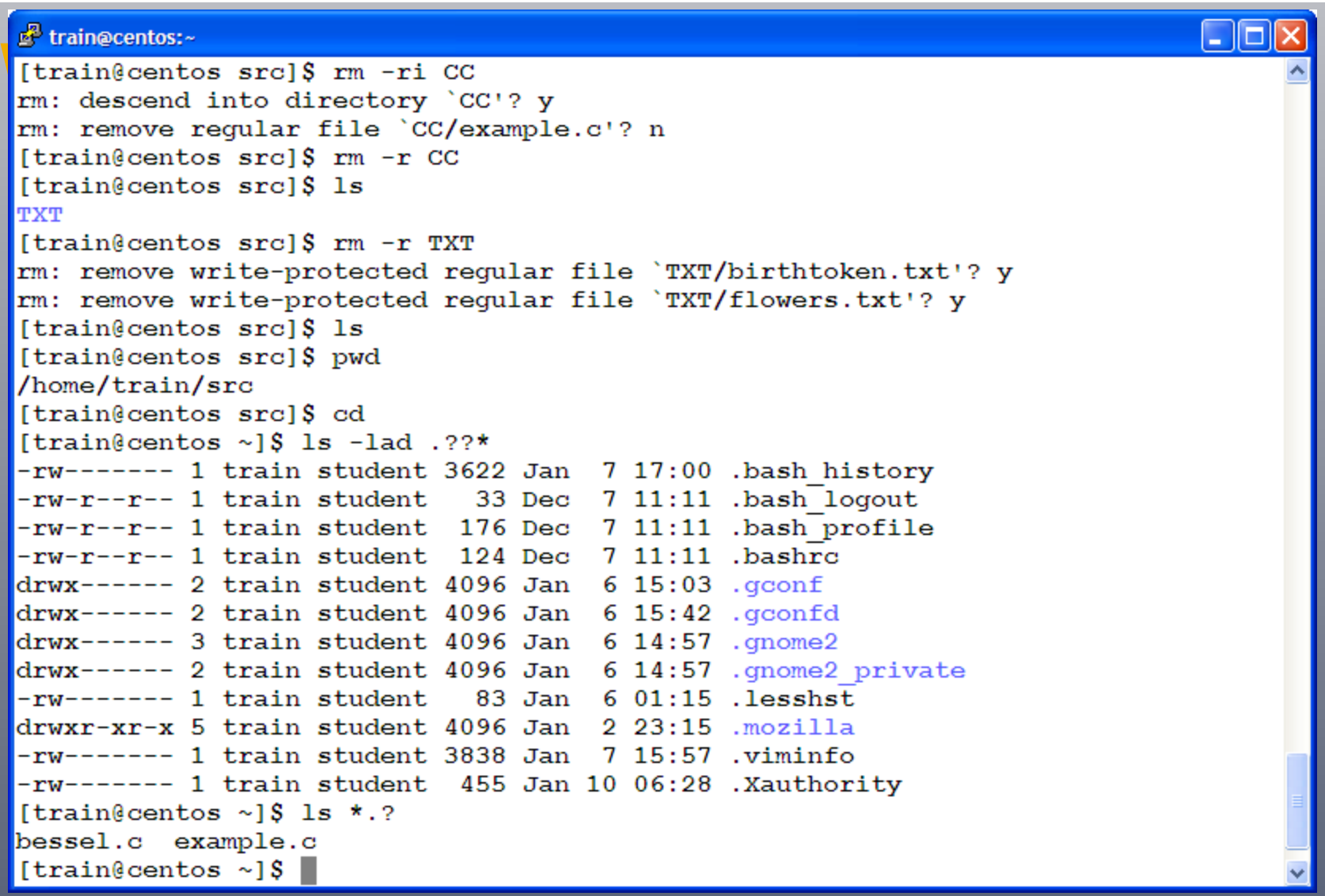
Home (~) and Wildcards



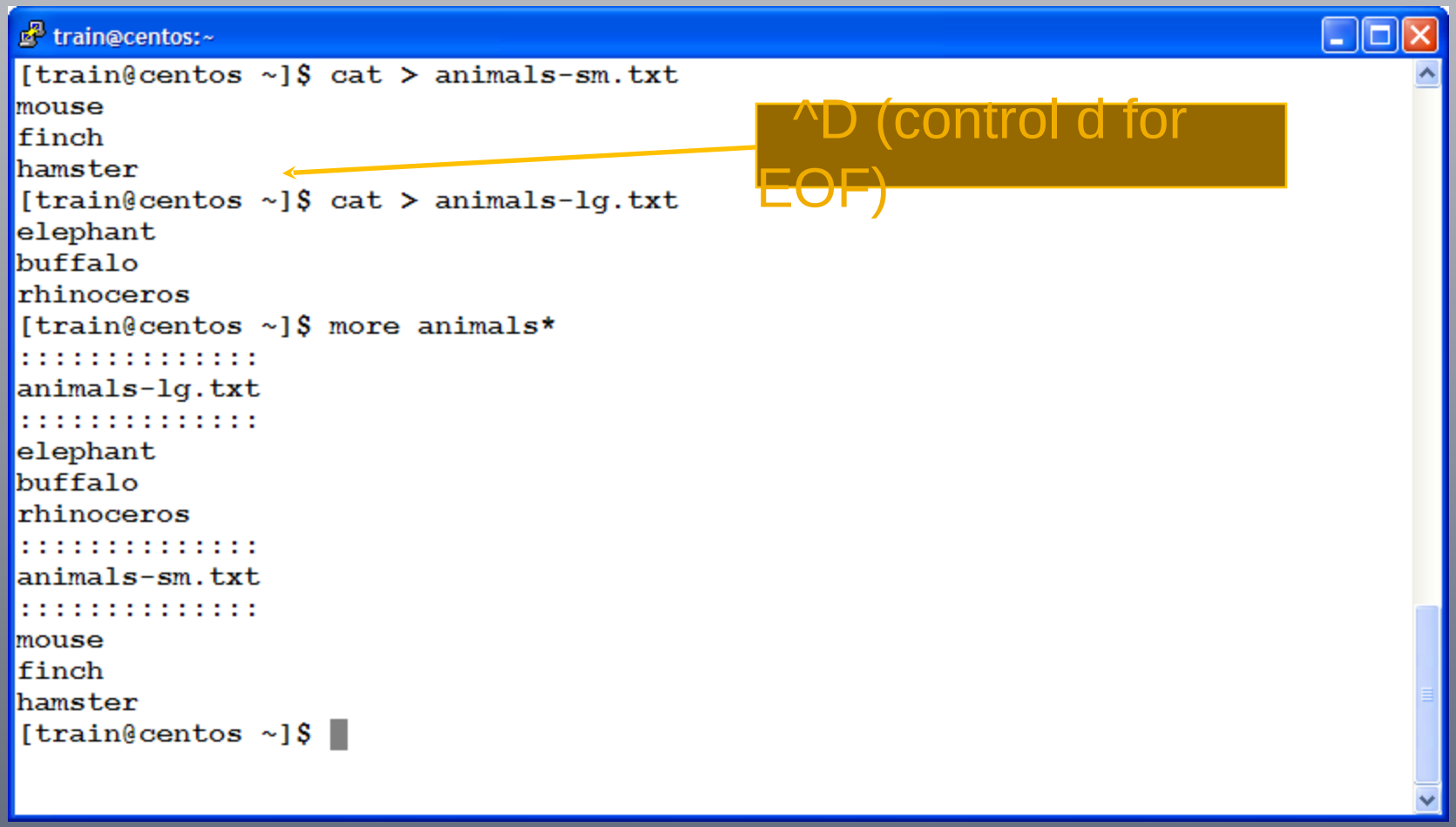
Working with Directories



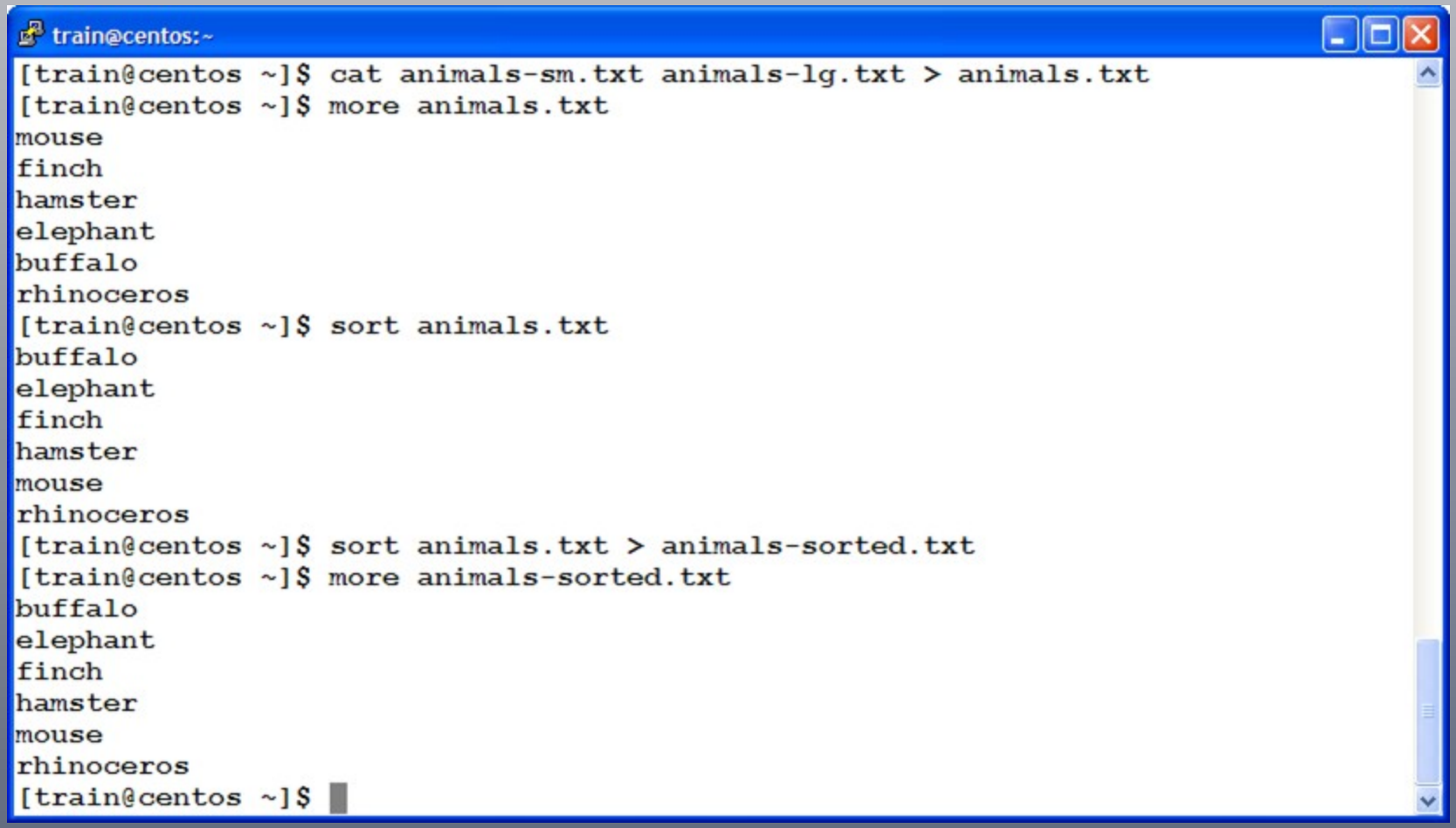
Working with Directories and Files:



Creating Files: Redirection (STDOUT)

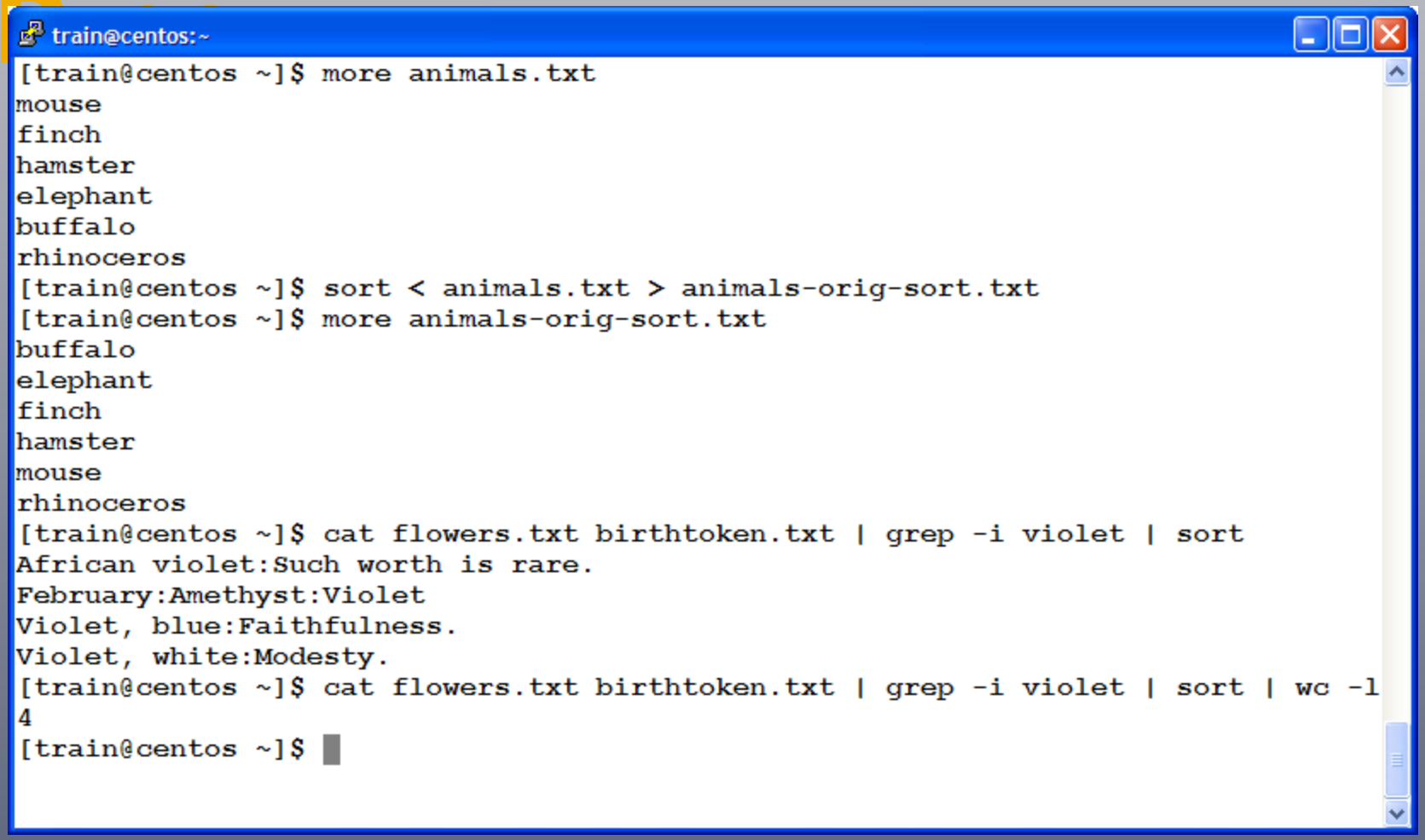


Creating Files: Redirection



Creating Files: Append and Pipe

Creating Files: Redirection (STDIN) and Pi



Editing Files

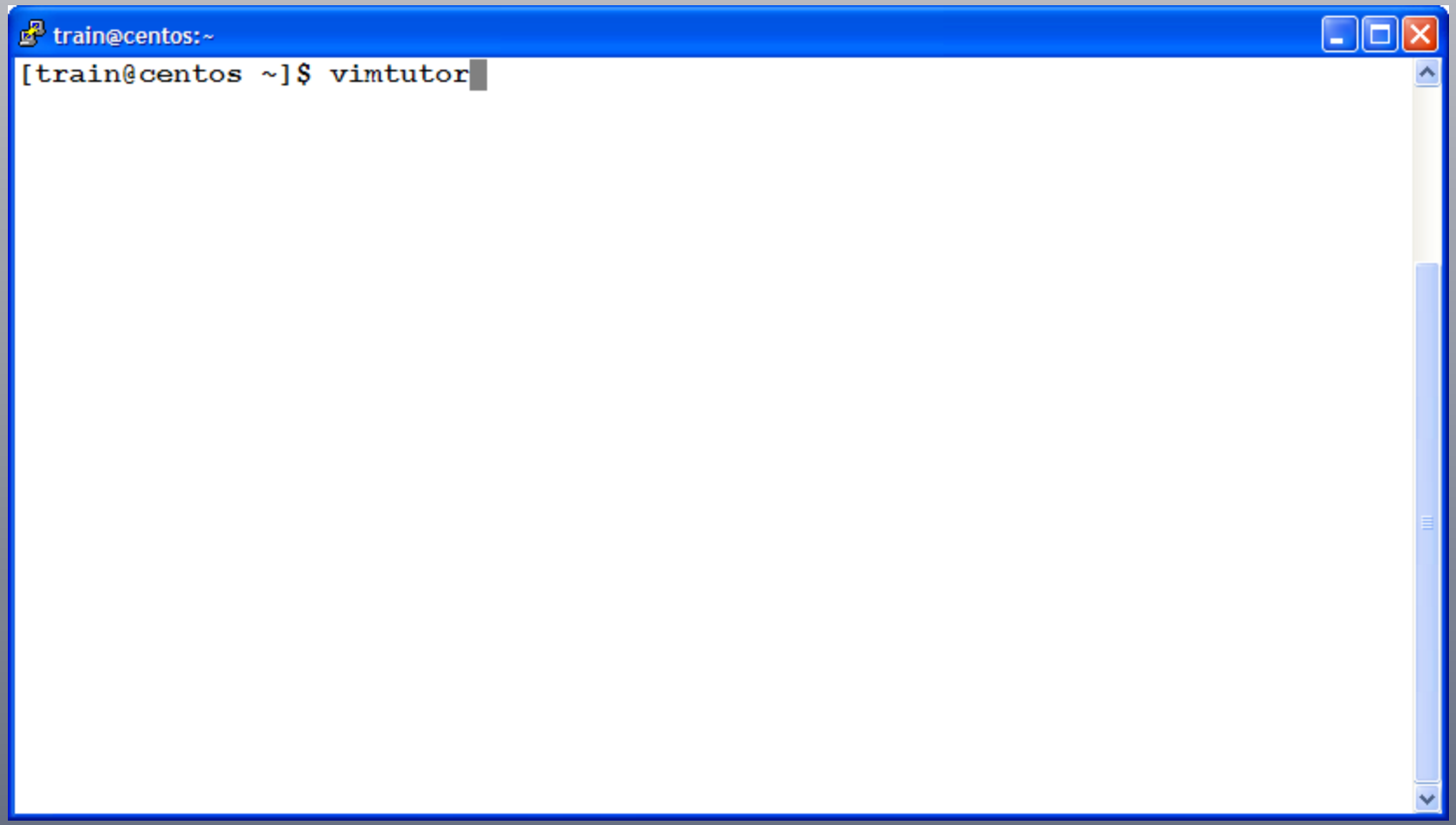
The VIM editor has two modes:

1. **Command**: interprets a letter or sequence of letters as a command.

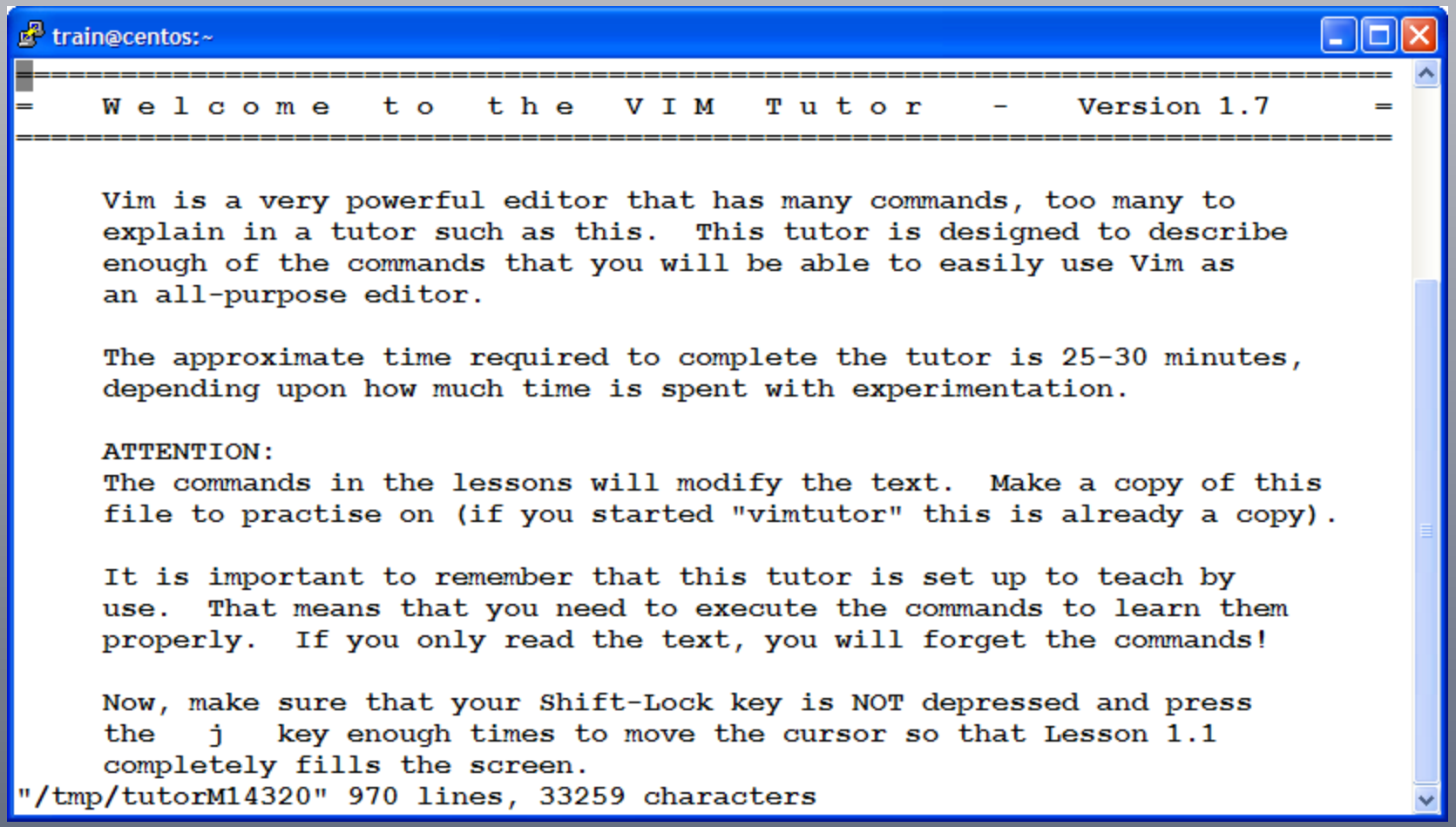
2. **Insert**: puts anything typed into the file. The ESC key ends insert mode and returns you to command mode.

Command line entry at the bottom of the screen appears when the command ":" is typed. VIM starts up in command mode.

VIM Tutor: Getting Started



VIM tutor: Getting Started



Resources

- Unix Tutorial for Beginners
  http://info.ee.surrey.ac.uk/Teaching/Unix/
- VTC (Unix Shell Fundamentals) – need to request an account
  http://www.udel.edu/it/learnit/course/vtccom.html
- VIM Tutor (vimtutor)
- Linux vi and vim editor: Tutorial and advanced features
  http://www.yolinux.com/TUTORIALS/LinuxTutorialAdvanced_vi.html
- Graphical vi-vim Cheat Sheet and Tutorial
  http://www.viemu.com/a_vi_vim_graphical_cheat_sheet_tutorial.html