



Introduction to UNIX

CS 2204

Class meeting 1



What is UNIX?

- A *modern* computer *operating system*
- Operating system:
 - “a program that acts as an intermediary between a user of the computer and the computer hardware”
 - Software that manages your computer’s resources (files, programs, disks, network, ...)
 - e.g. Windows, MacOS
- Modern: features for stability, flexibility, multiple users and programs, configurability, etc.



Why UNIX?

- Used in many scientific and industrial settings
- Huge number of free and well-written software programs
- Open-source OS
- Internet servers and services run on UNIX
- Largely hardware-independent
- Based on standards



Brief history of UNIX

- Originally developed at Bell Labs for internal use in 1970s
- Borrowed best ideas from other Oss
- Meant for programmers and computer experts
- Two main threads of development:
 - Berkeley software distribution (BSD)
 - Unix System Laboratories System V



UNIX variants

- Sun: SunOS, Solaris
- GNU: Linux (many flavors)
- SGI: Irix
- FreeBSD
- Hewlett-Packard: HP-UX
- Apple: OS X (Darwin)
- ...

Getting started



```
Telnet - homer.cs.vt.edu
Connect Edit Terminal Help

IRIX (homer.cs.vt.edu)

login: bowman
Password:
IRIX Release 6.5 IP22 homer
Copyright 1987-2001 Silicon Graphics, Inc. All Rights Reserved.
Last login: Wed Aug 22 08:31:57 EDT 2001 by ttyq0@hokiebook.cs.vt.edu
homer.cs.vt.edu 1% █
```



Logins and passwords

- You must have an “account” on the UNIX machine you’re trying to use
- “login” is your user name (usually some variant of your real name)
- Your password will not echo as you type
- Remember good password practices



The shell prompt

- After logging in, you get some information about the system, then a shell prompt
- *shell*: The program you use to send commands to the UNIX system
- Prompts take many forms:
 - `$`
 - `%`
 - `username@hostname>`
 - `hostname # %`
- “Tyranny of the blank screen”



Entering commands

- Anytime you see a prompt, you can enter a command for the shell
- Some commands are a single word
 - `who`
 - `date`
 - `ls`
- Others use additional information
 - `cat textfile`
 - `ls -l`



Command syntax

- Commands must be entered exactly. If you make a mistake before entering, delete/backspace to fix it. Be careful!
- **command** *options argument(s)*
- Options: modify command's execution
- Arguments: often filenames that tell a command what to operate on



Example commands: ls

- `ls -l`
- `ls -a -l`
- `ls -al`
- `ls -a; ls -l`
- `ls textfile`
- `ls folder`
- `ls textfile1 textfile2`
- `ls -al textfile`



If you don't get a normal shell prompt...

- A program is probably running
- If you see a special program prompt, try to quit the program (`quit`, `bye`, `exit`)
- If you see nothing, you can
 - Stop the program with CTRL-z (program will wait until started again)
 - Interrupt the program with CTRL-c (program will usually die)



Ending your session

- **Always** log out when you are done
- Use the command `exit` (also sometimes `logout` or `CTRL-d`)
- Note: if you are running a window system, logging out of the shell only ends that shell. You must also log out of the window system using a menu.