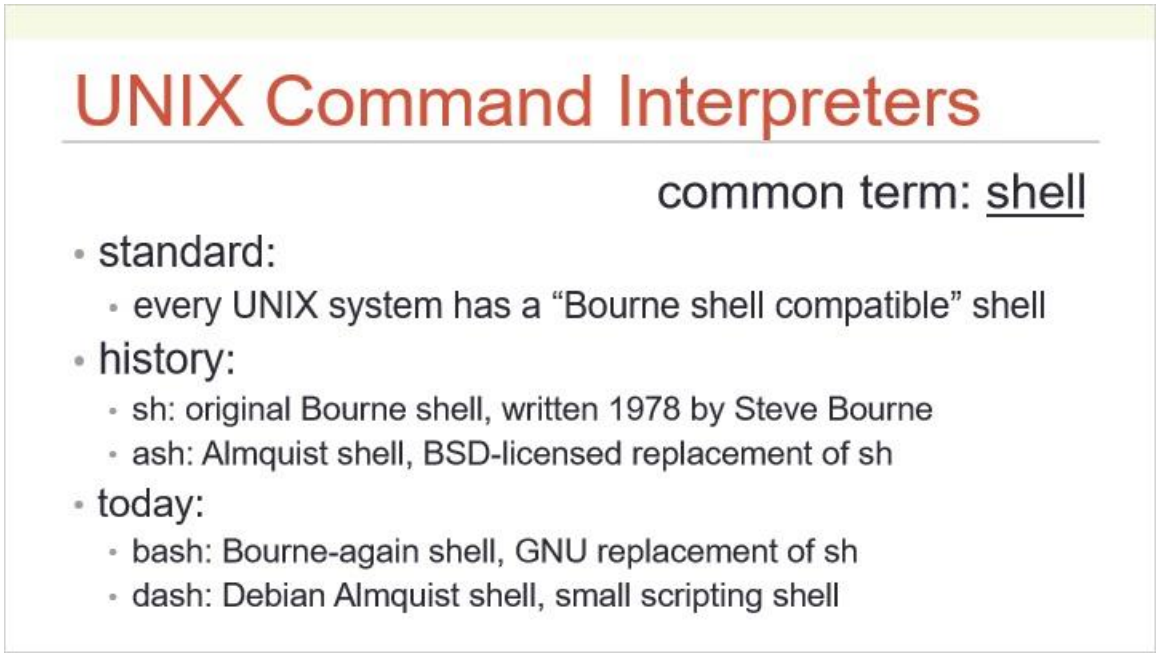
Shell I

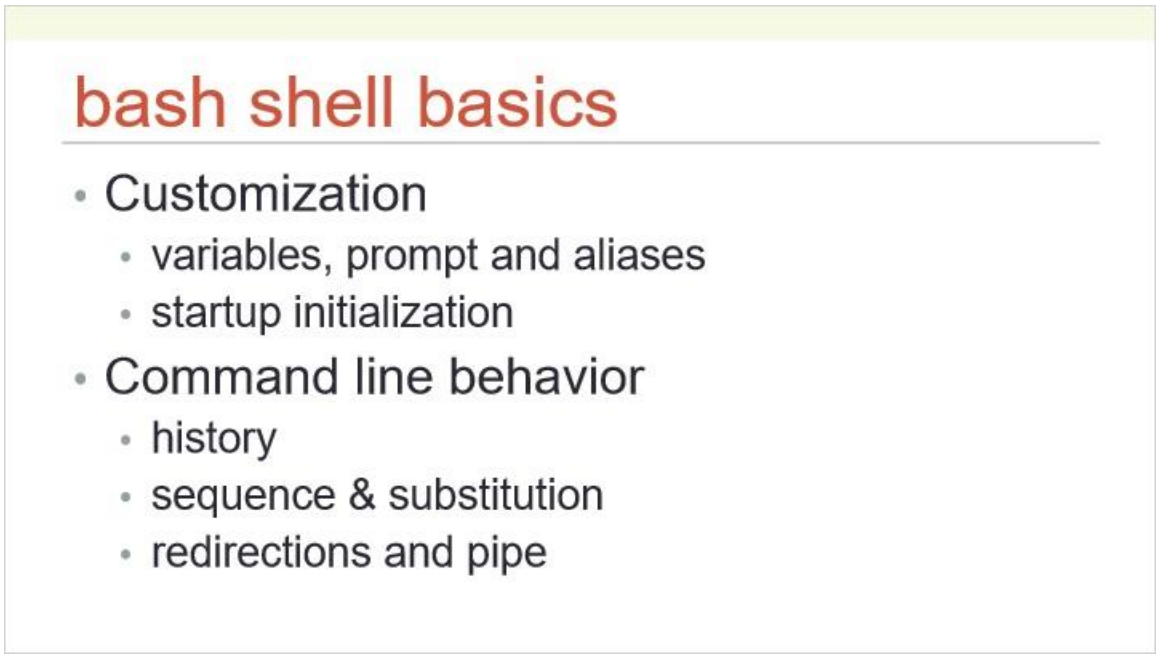
1. Shell I

1.1 Introduction

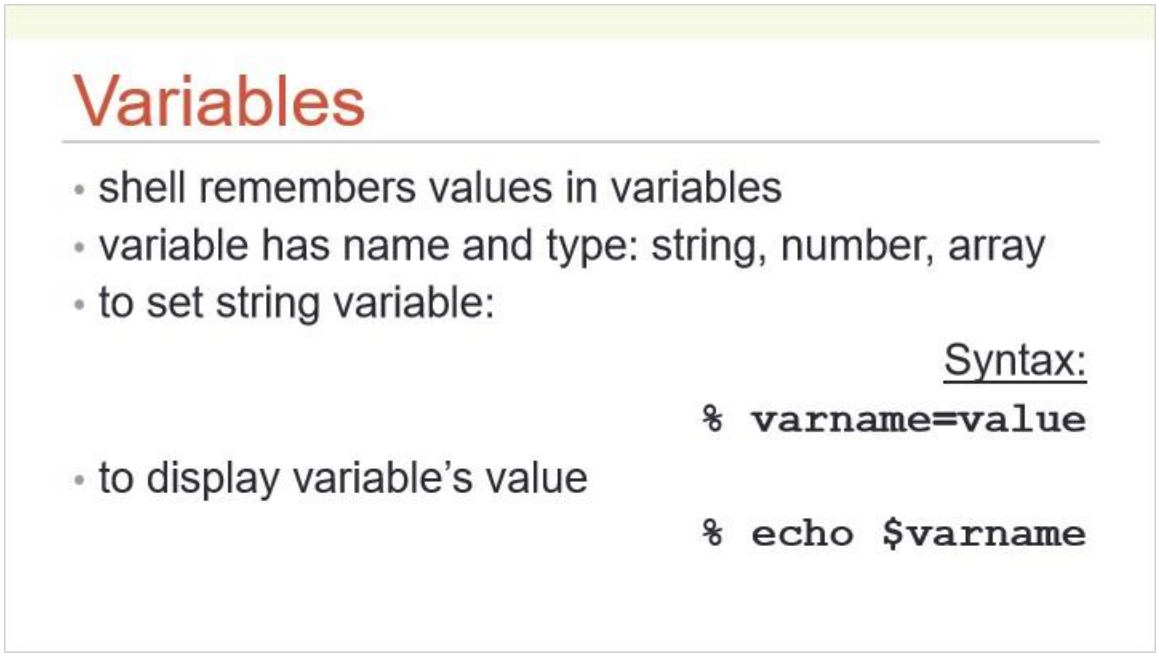
1.2 UNIX Command Interpreters



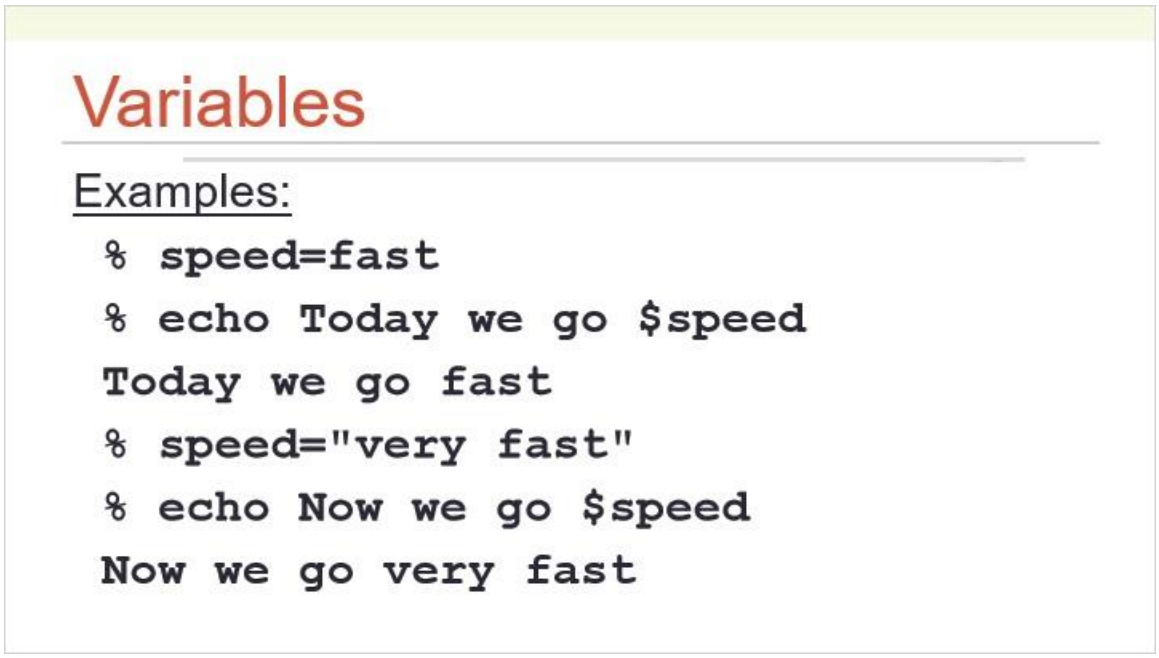
1.3 bash shell basics



1.4 Variables

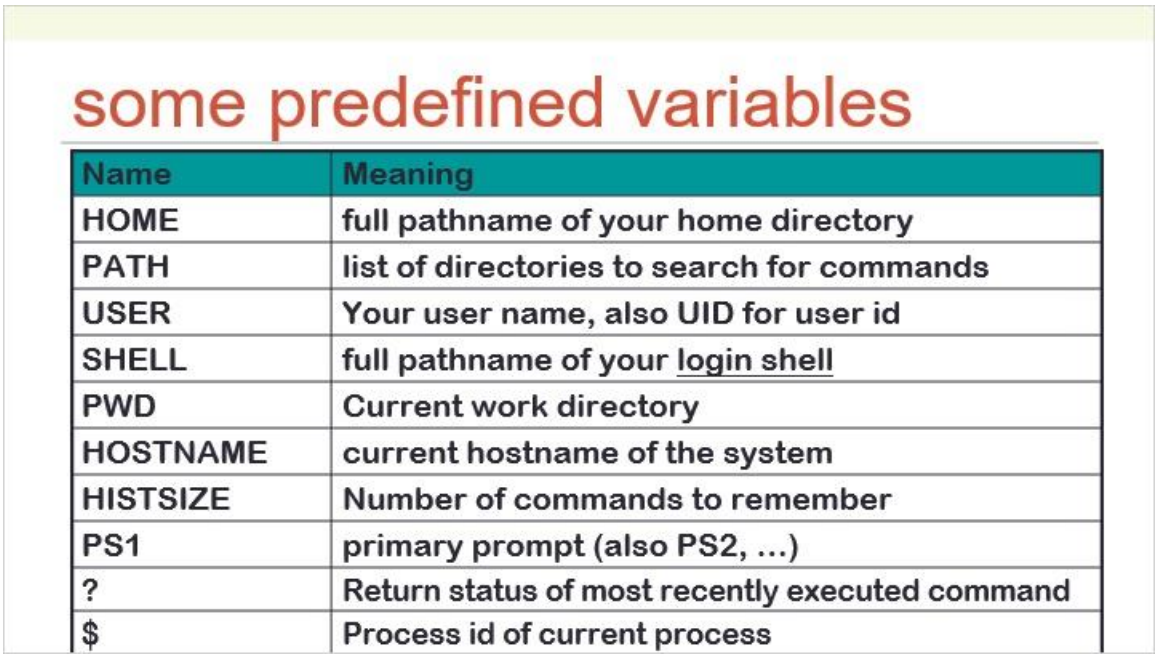


1.5 Variables



1.6 Variable Scope

1.7 some predefined variables



some predefined variables

Name	Meaning
HOME	full pathname of your home directory
PATH	list of directories to search for commands
USER	Your user name, also UID for user id
SHELL	full pathname of your login shell
PWD	Current work directory
HOSTNAME	current hostname of the system
HISTSIZE	Number of commands to remember
PS1	primary prompt (also PS2, …)
?	Return status of most recently executed command
$	Process id of current process

1.8 Example: PATH variable

Example: PATH variable

- PATH lists a set of directories
- shell finds commands in these directories

Example:

```
% echo $PATH
/usr/sbin:/usr/bin:/sbin:/bin:/usr/games
% PATH=$PATH:~/bin
% echo $PATH
/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/home/
  student/bin
```

1.9 bash shell prompt

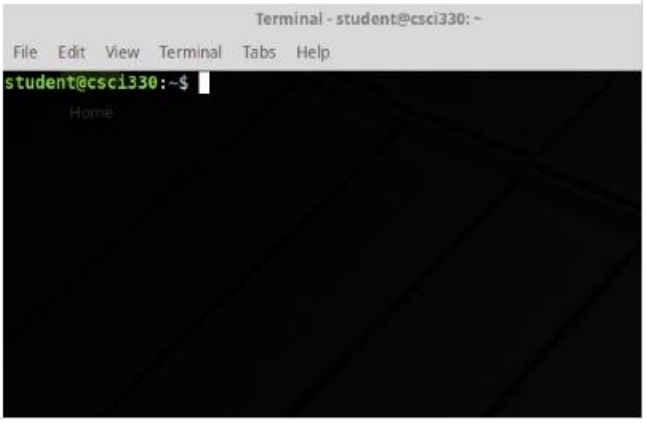
bash shell prompt

- can be set via “PS1” shell variable

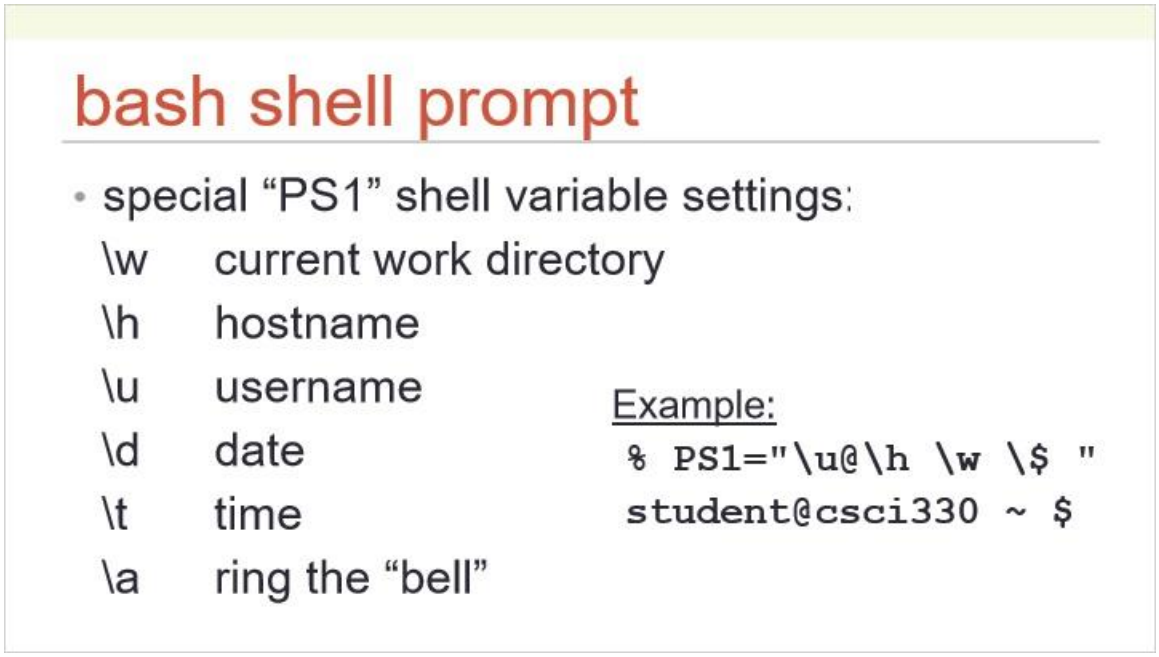
Example:

```
% PS1="$USER > "
student >
```

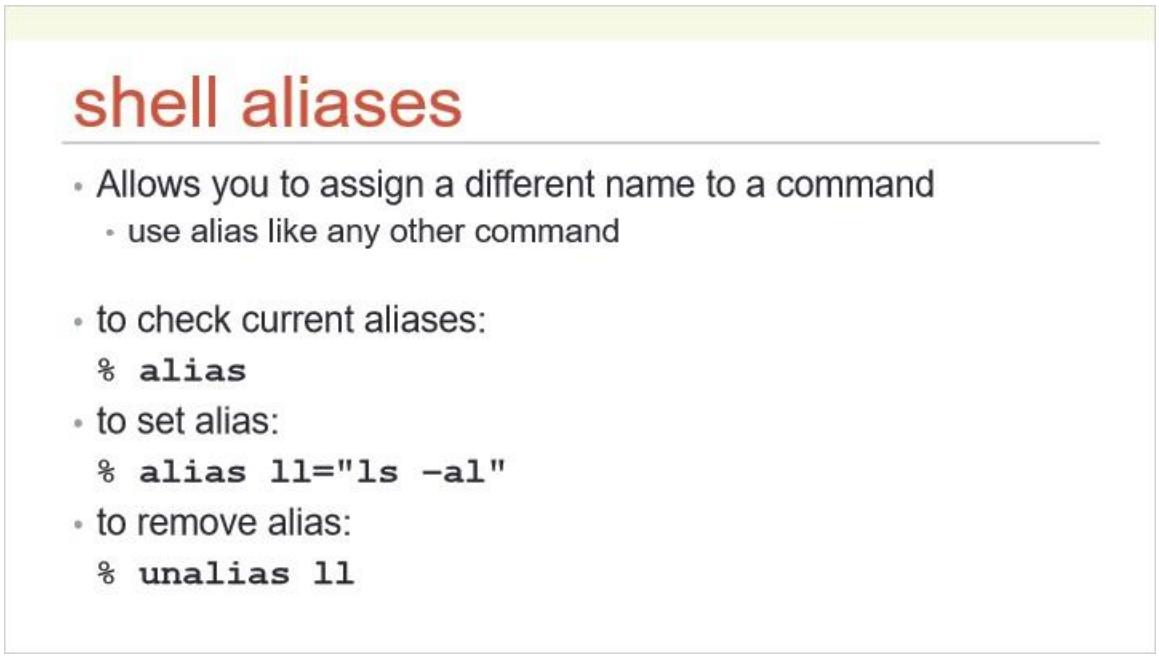
- Secondary prompts: PS2, PS3, PS4



1.10 bash shell prompt



1.11 shell aliases

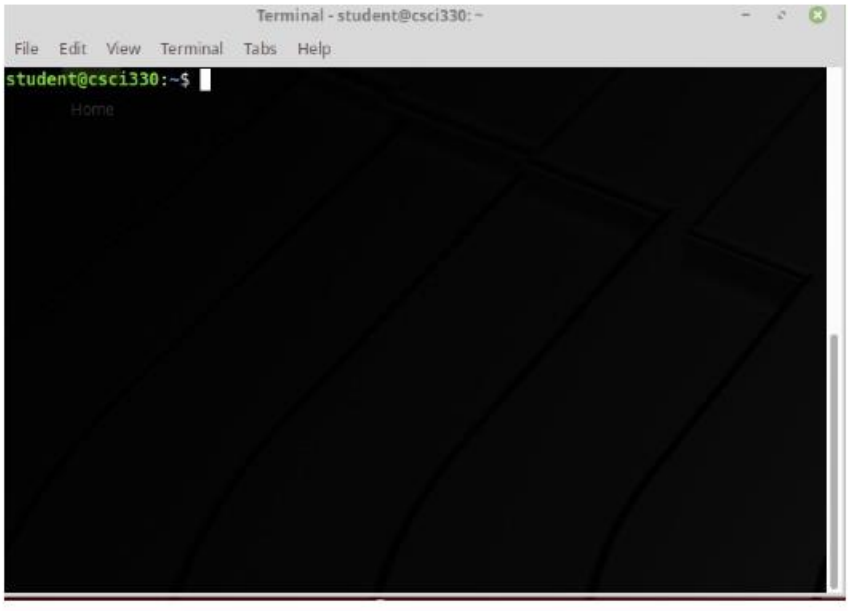


1.12 How to set and keep variables ?

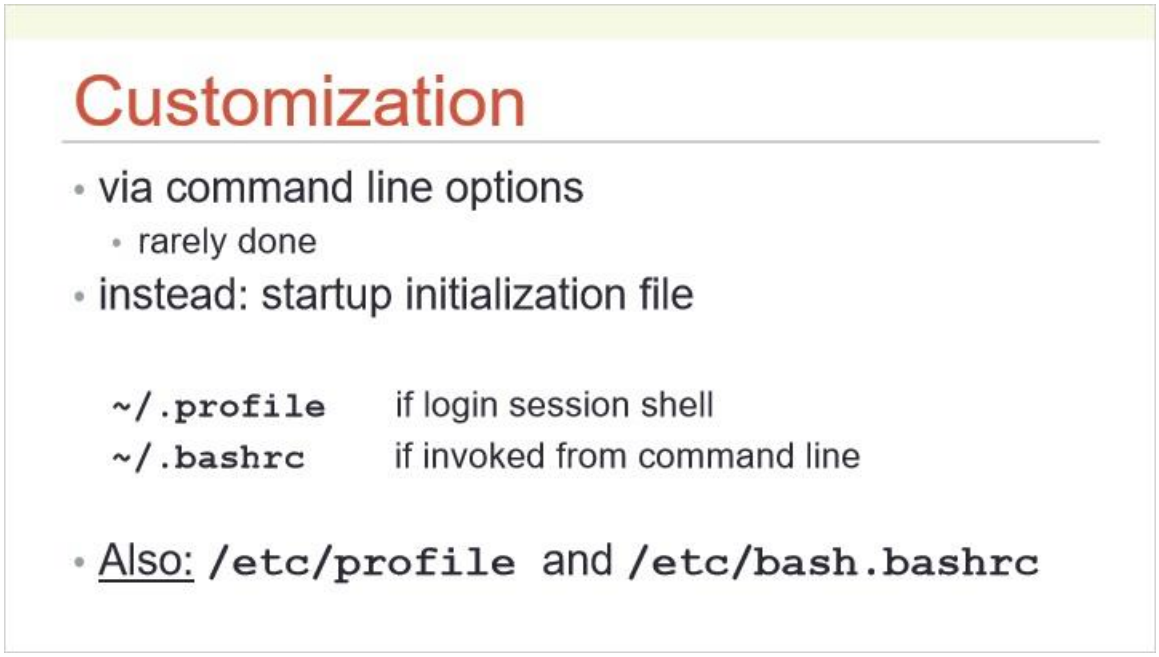
How to set and keep variables ?

- variables set on the command line end when shell ends
- set variables via a text file ?
  - enter alias definitions into text file
    - if text file is run as shell script, variables are local to that invocation
  - execute text file via “source” or “.” command
    - reads and executes content of file in current shell
- solution: set variables via default startup files

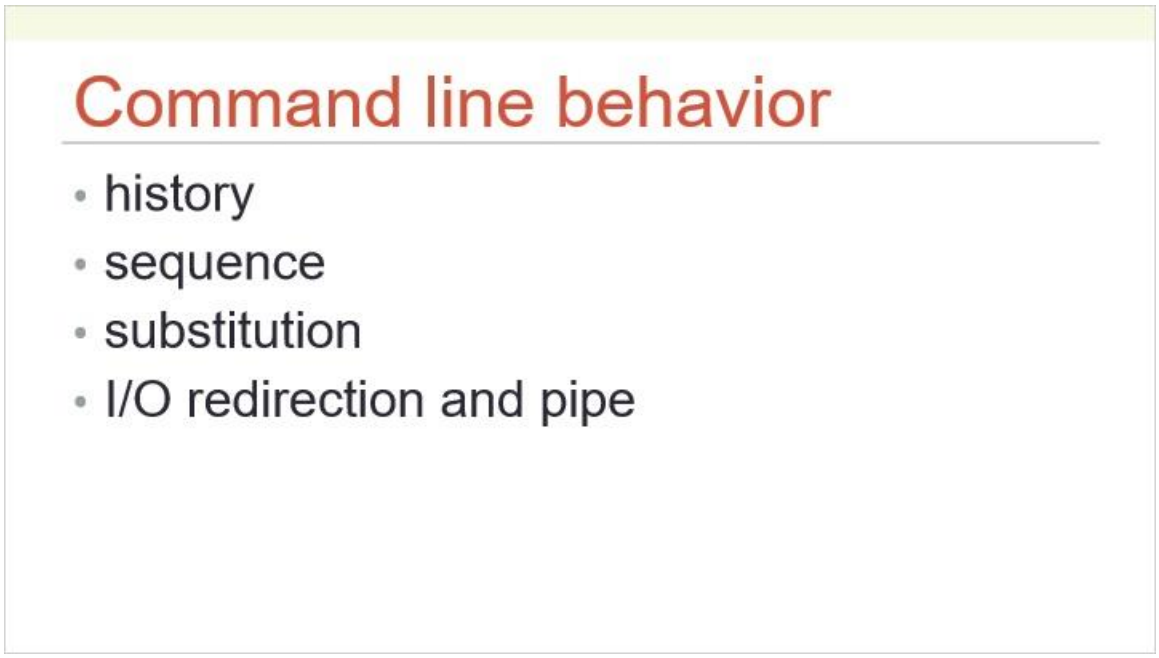
1.13 Setting aliases



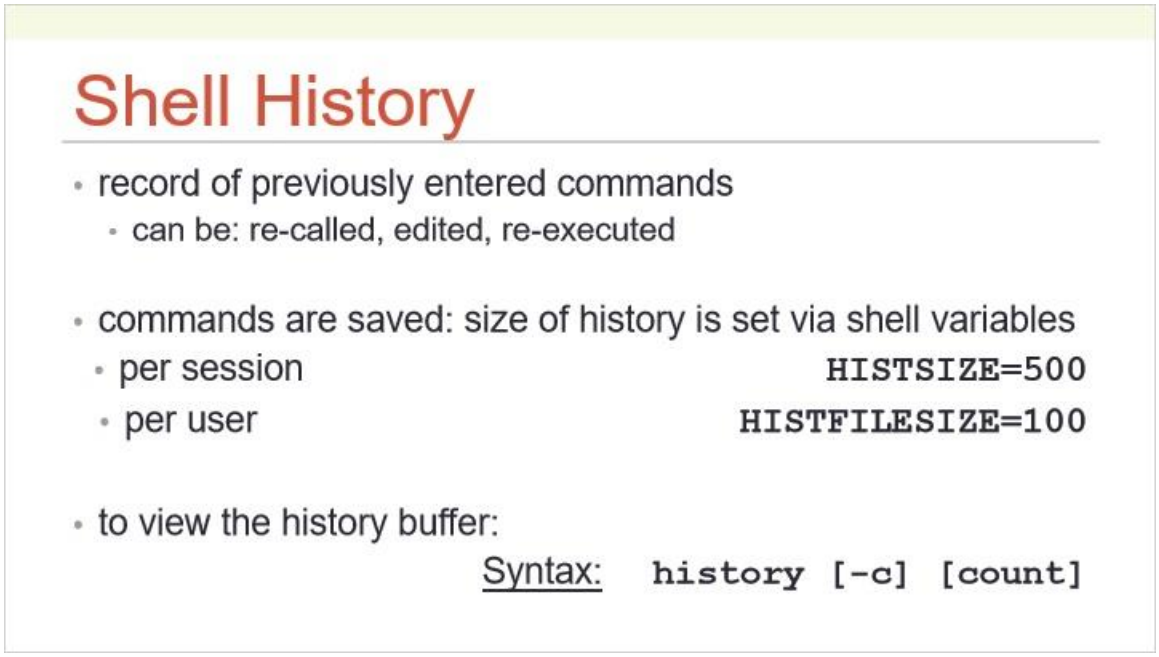
1.14 Customization



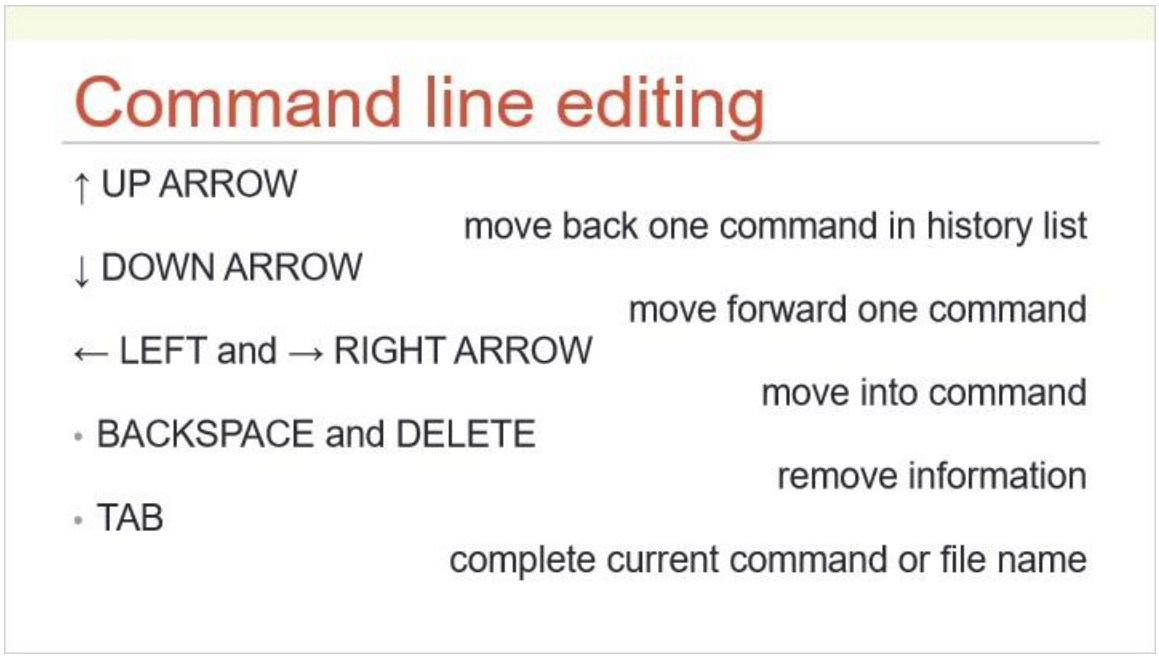
1.15 Command line behavior



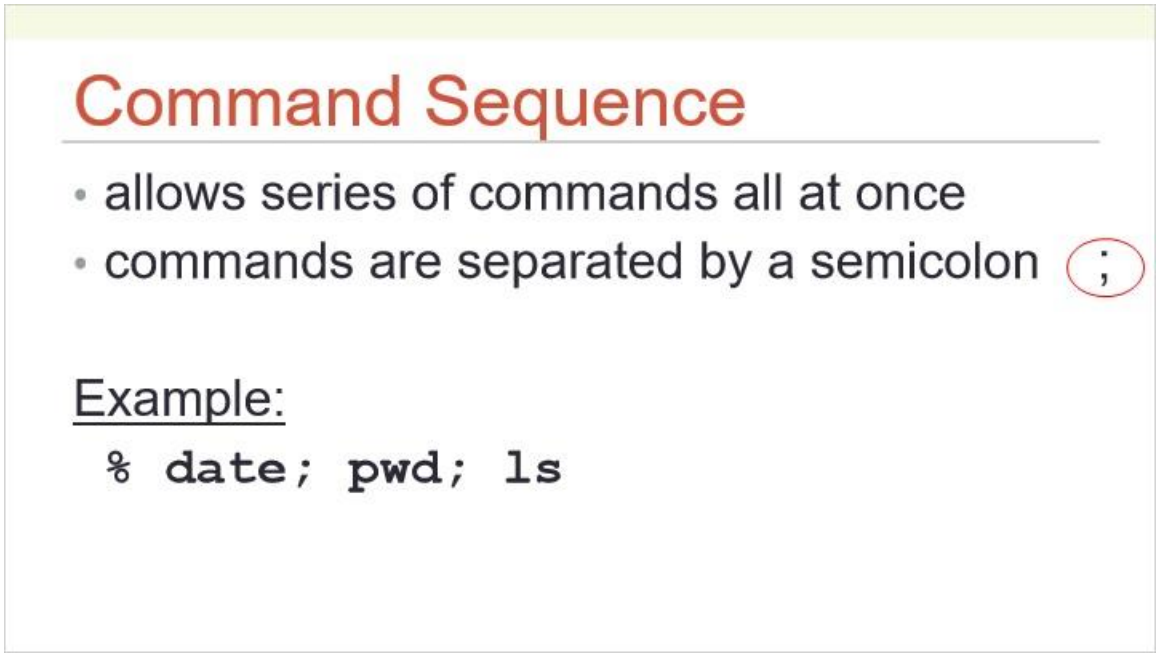
1.16 Shell History



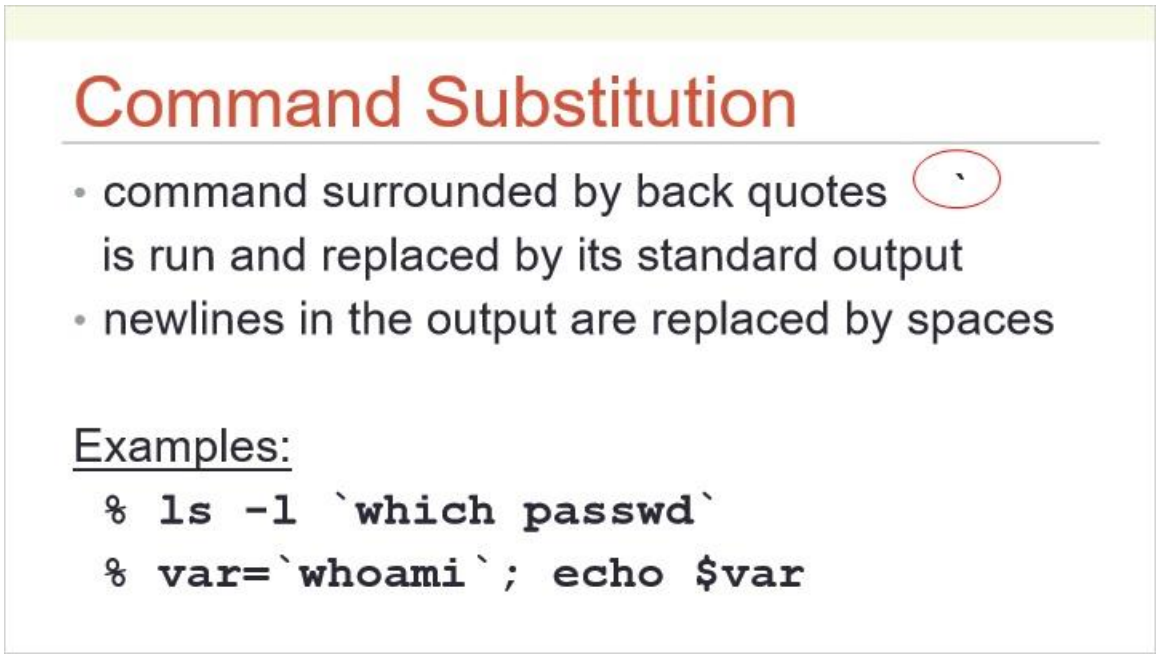
1.17 Command line editing



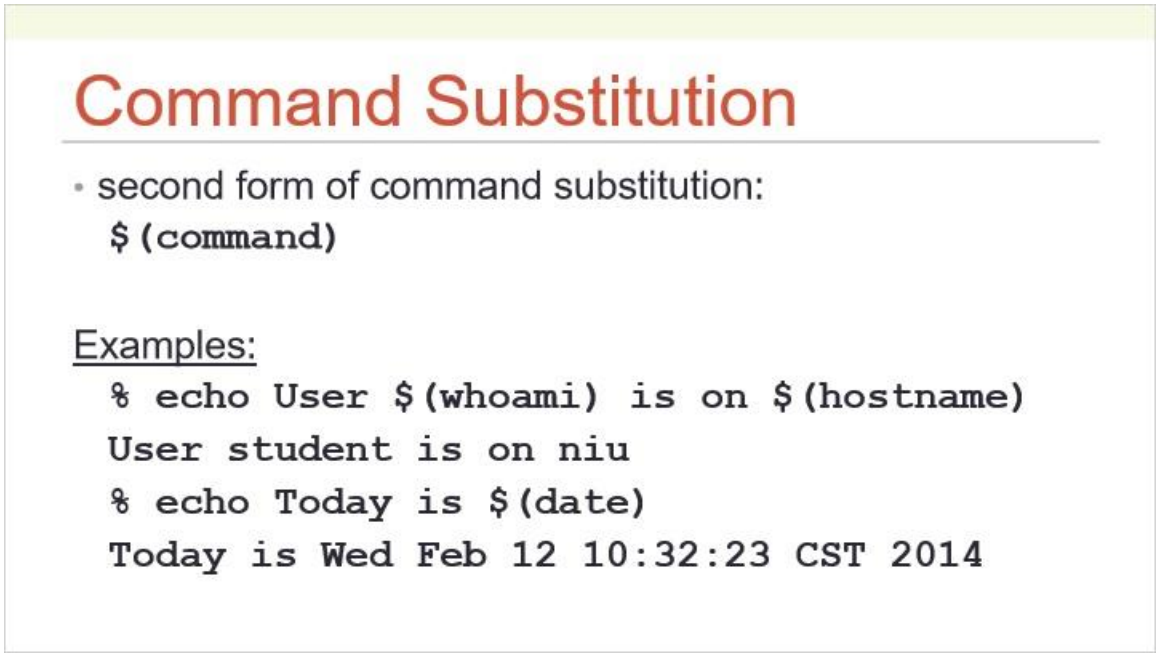
1.18 Command Sequence



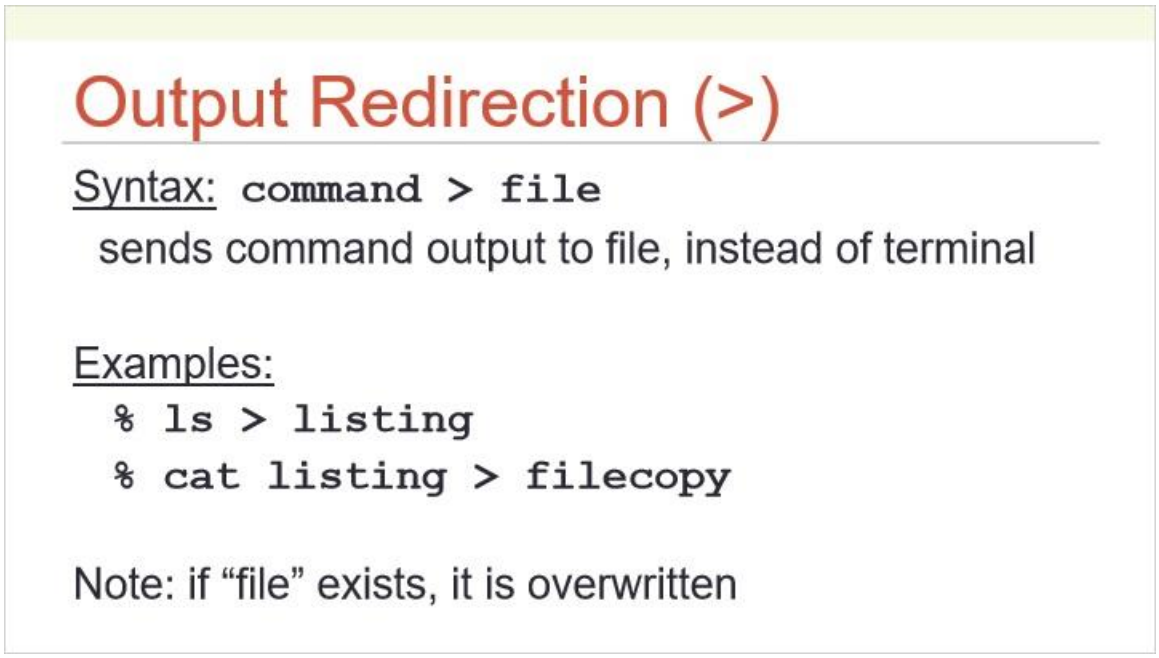
1.19 Command Substitution



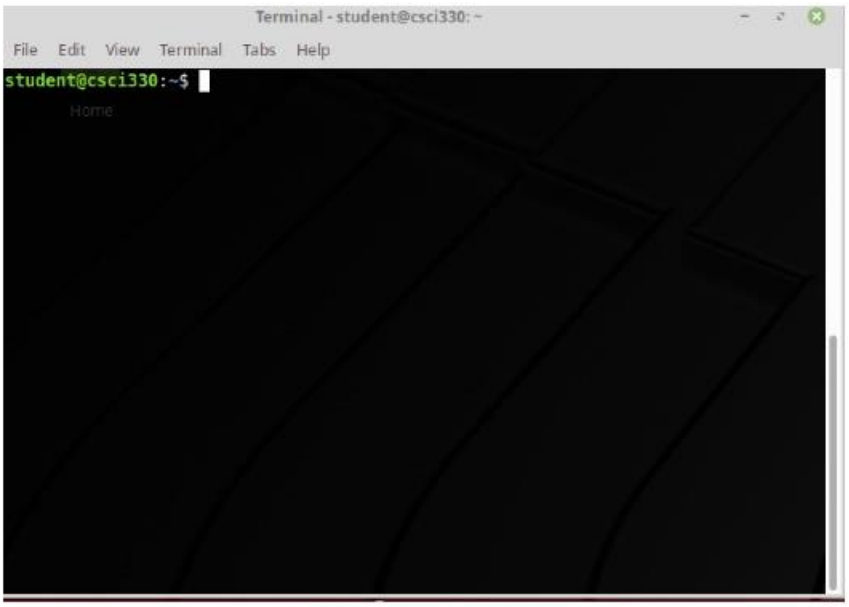
1.20 Command Substitution



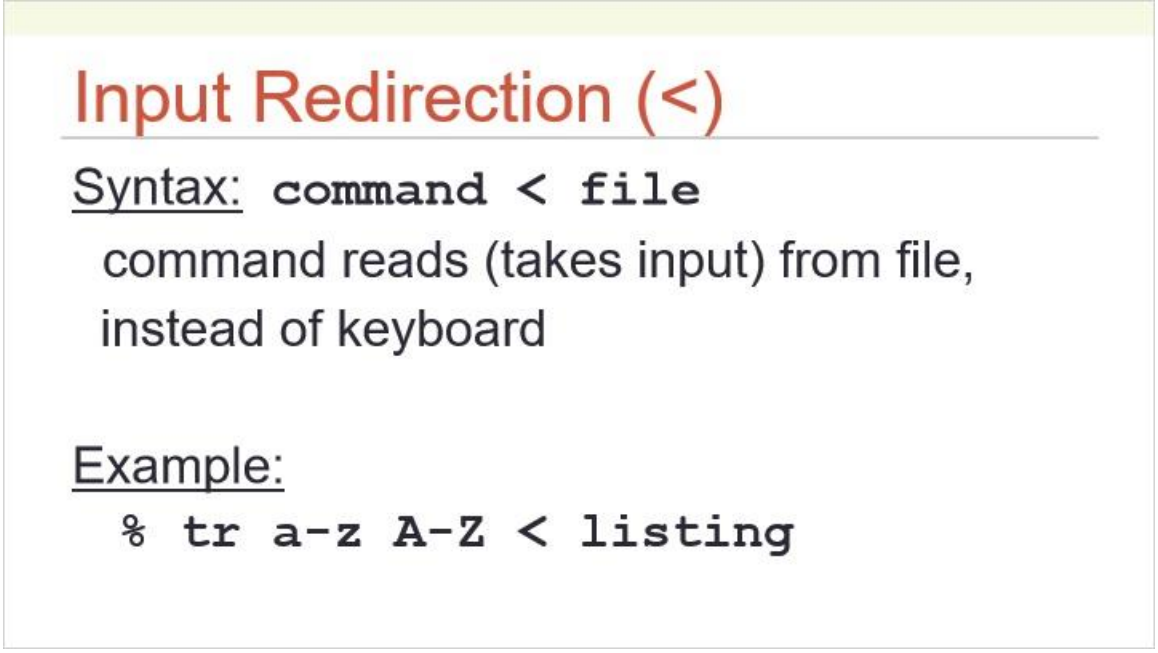
1.21 Output Redirection (>)



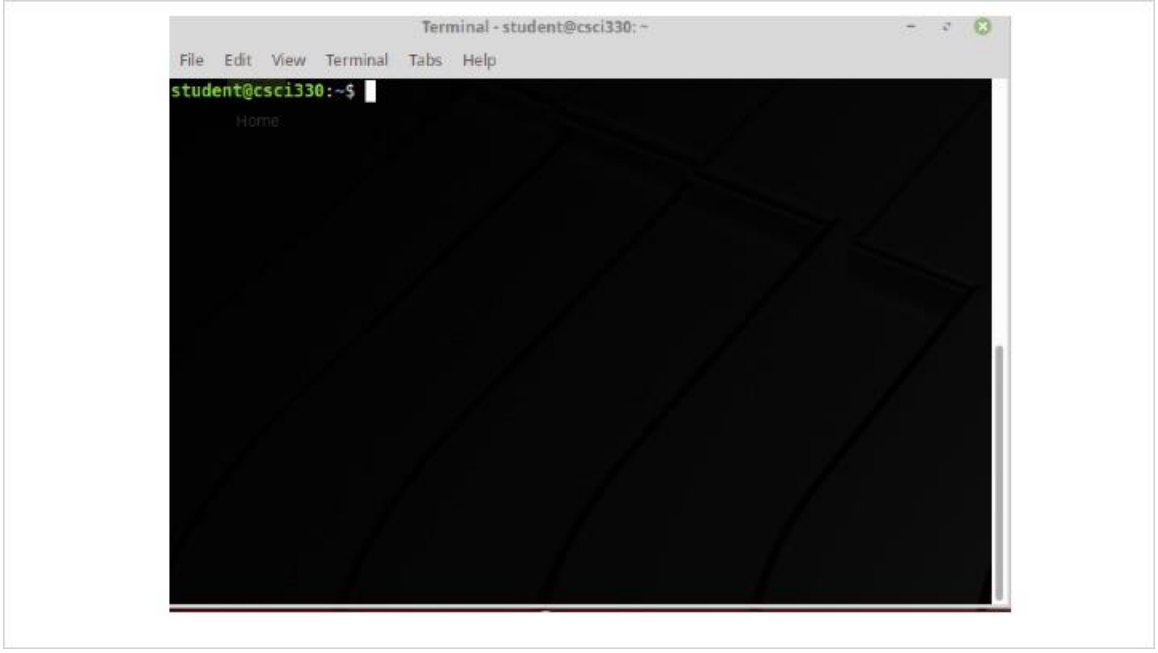
1.22 Redirect example



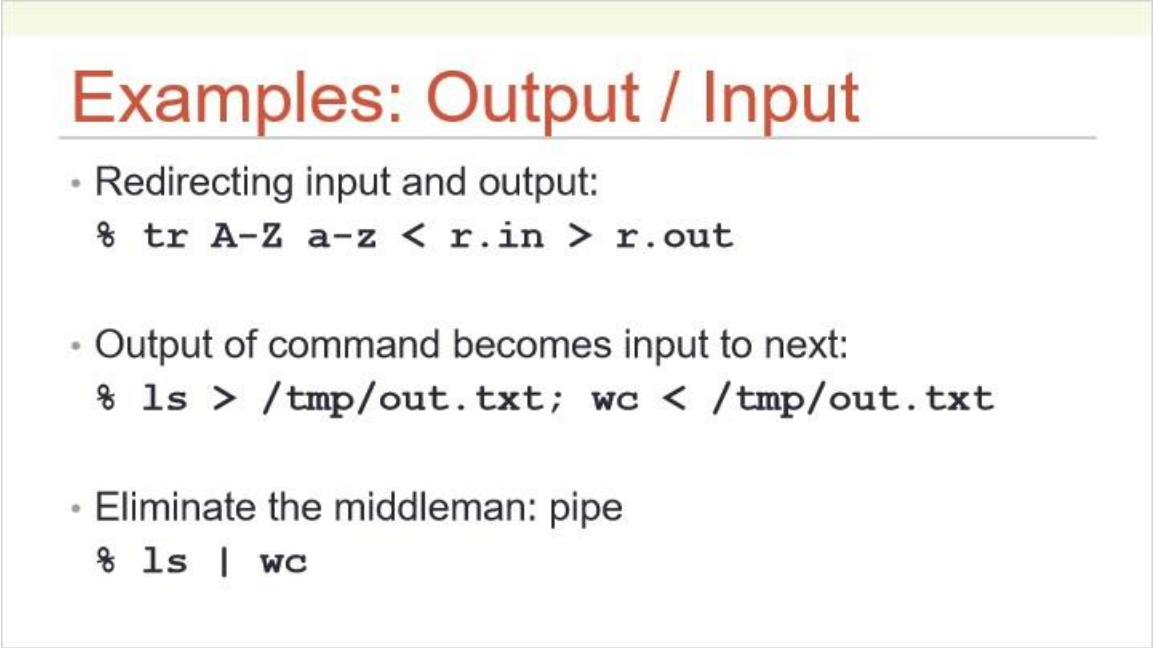
1.23 Input Redirection (<)



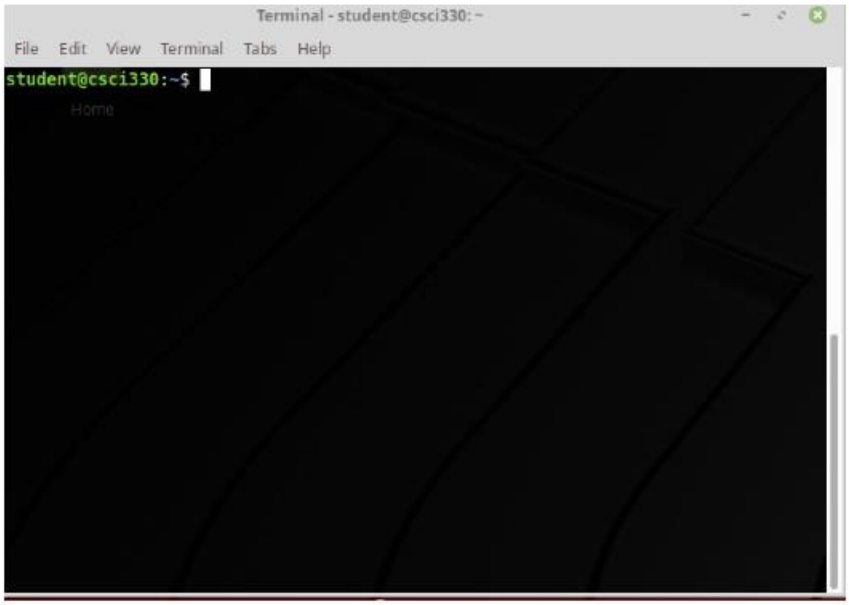
1.24 Rediirect example



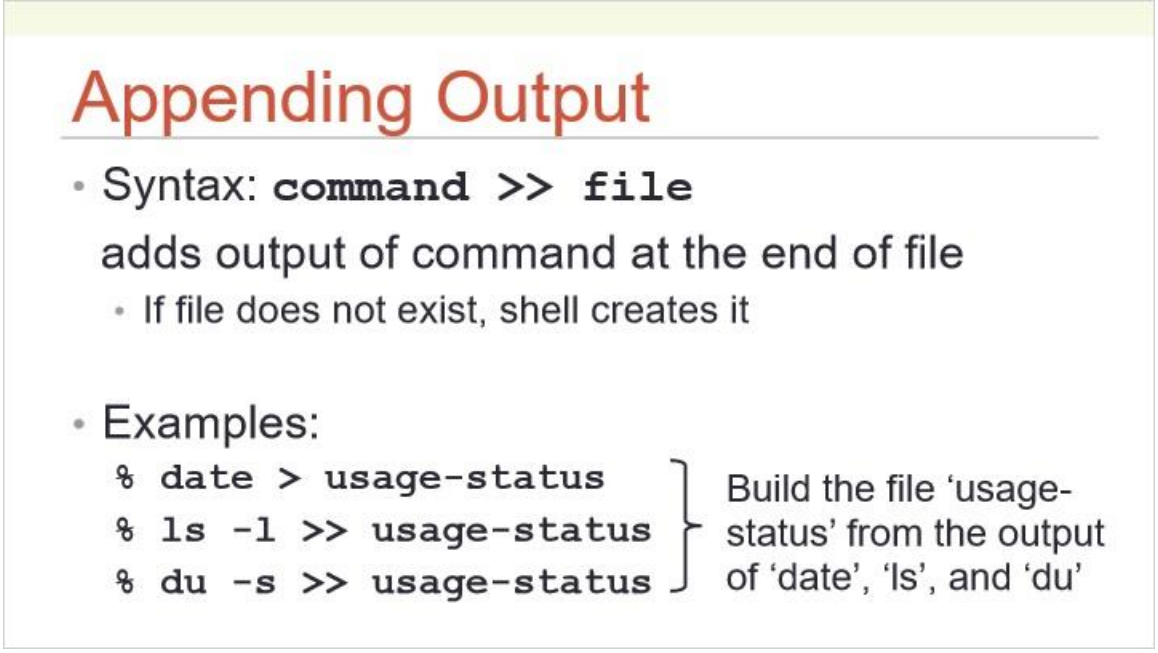
1.25 Examples: Output / Input



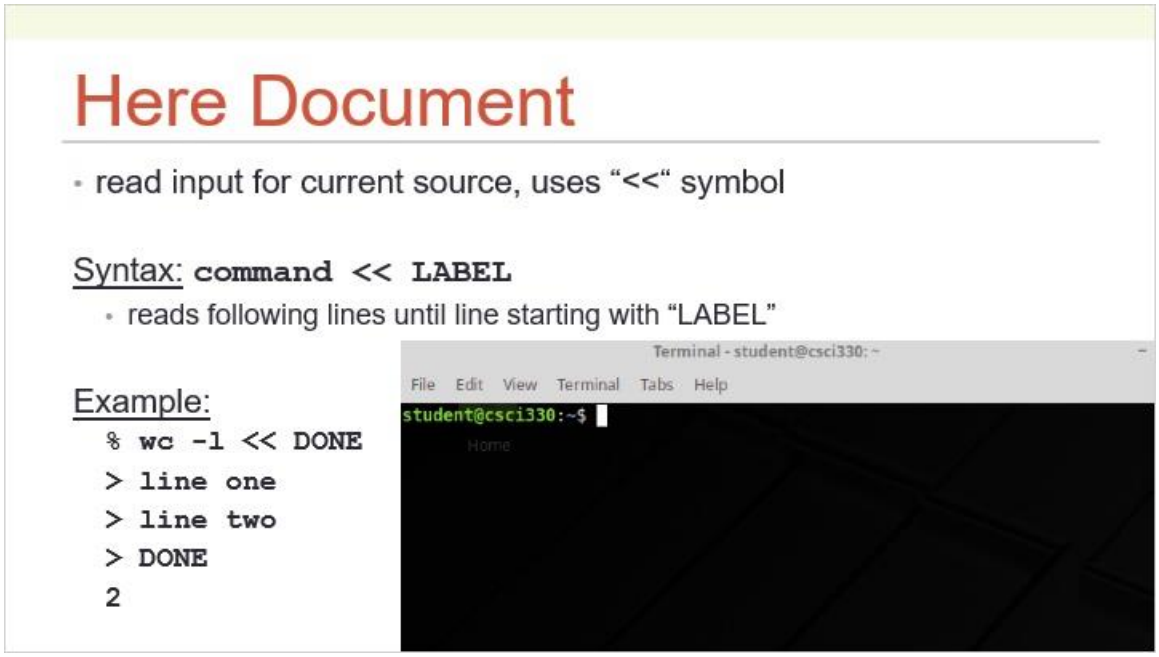
1.26 Pipe example



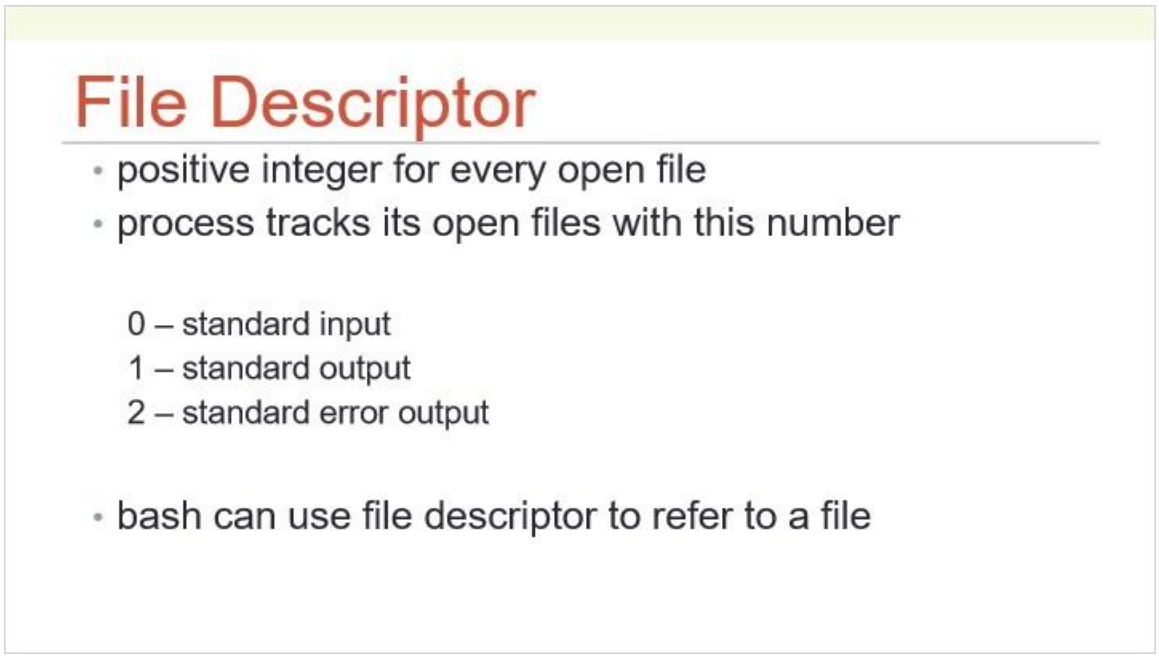
1.27 Appending Output



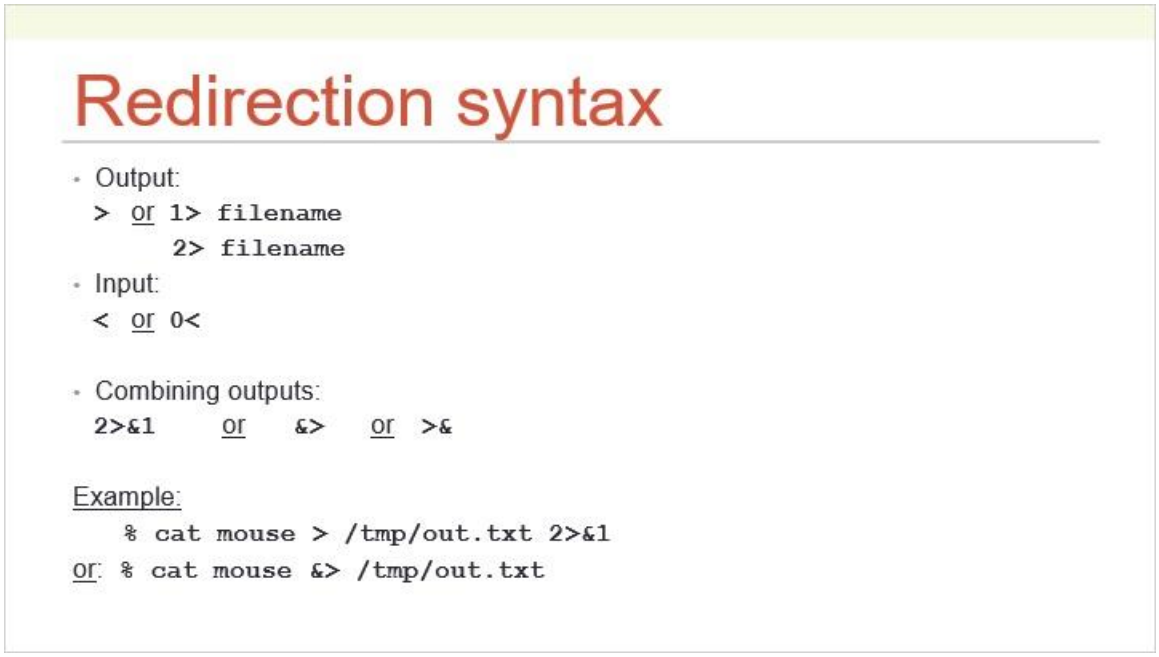
1.28 Here Document



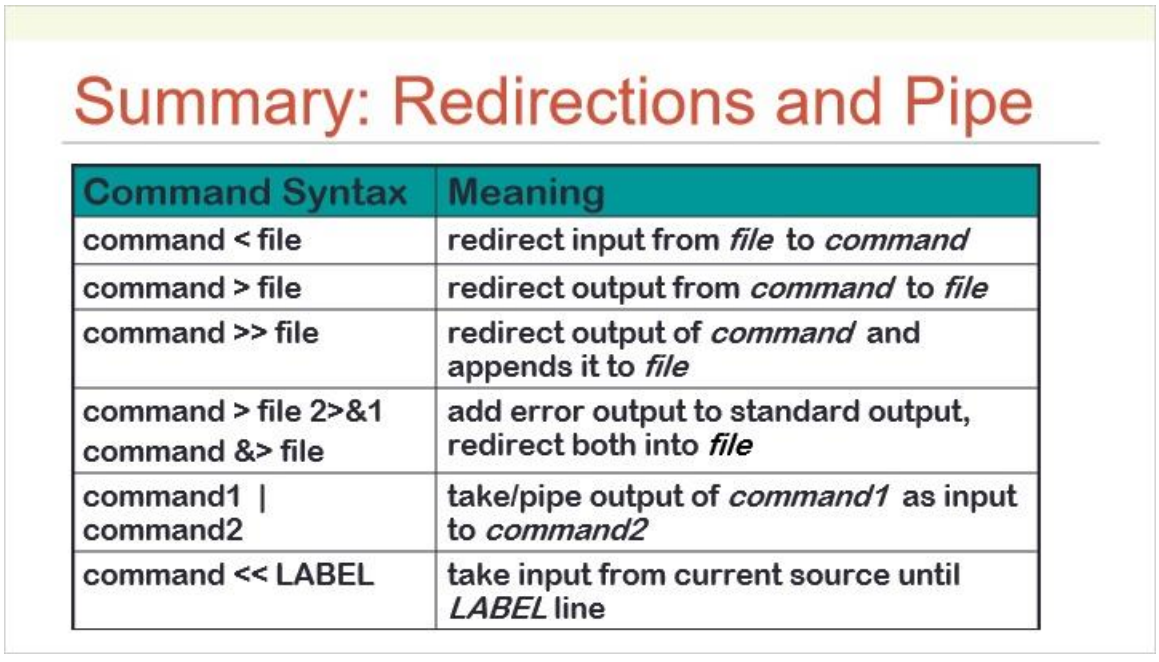
1.29 File Descriptor



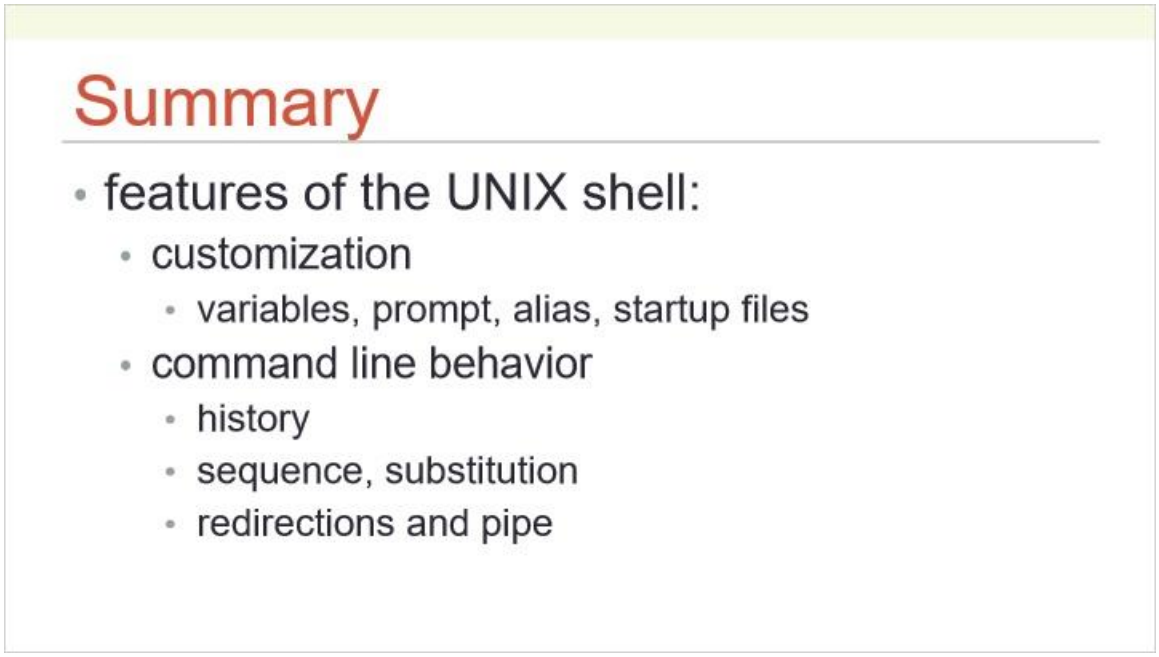
1.30 Redirection syntax



1.31 Summary: Redirections and Pipe



1.32 Summary


Summary
• features of the UNIX shell:
• customization
• variables, prompt, alias, startup files
• command line behavior
• history
• sequence, substitution
• redirections and pipe