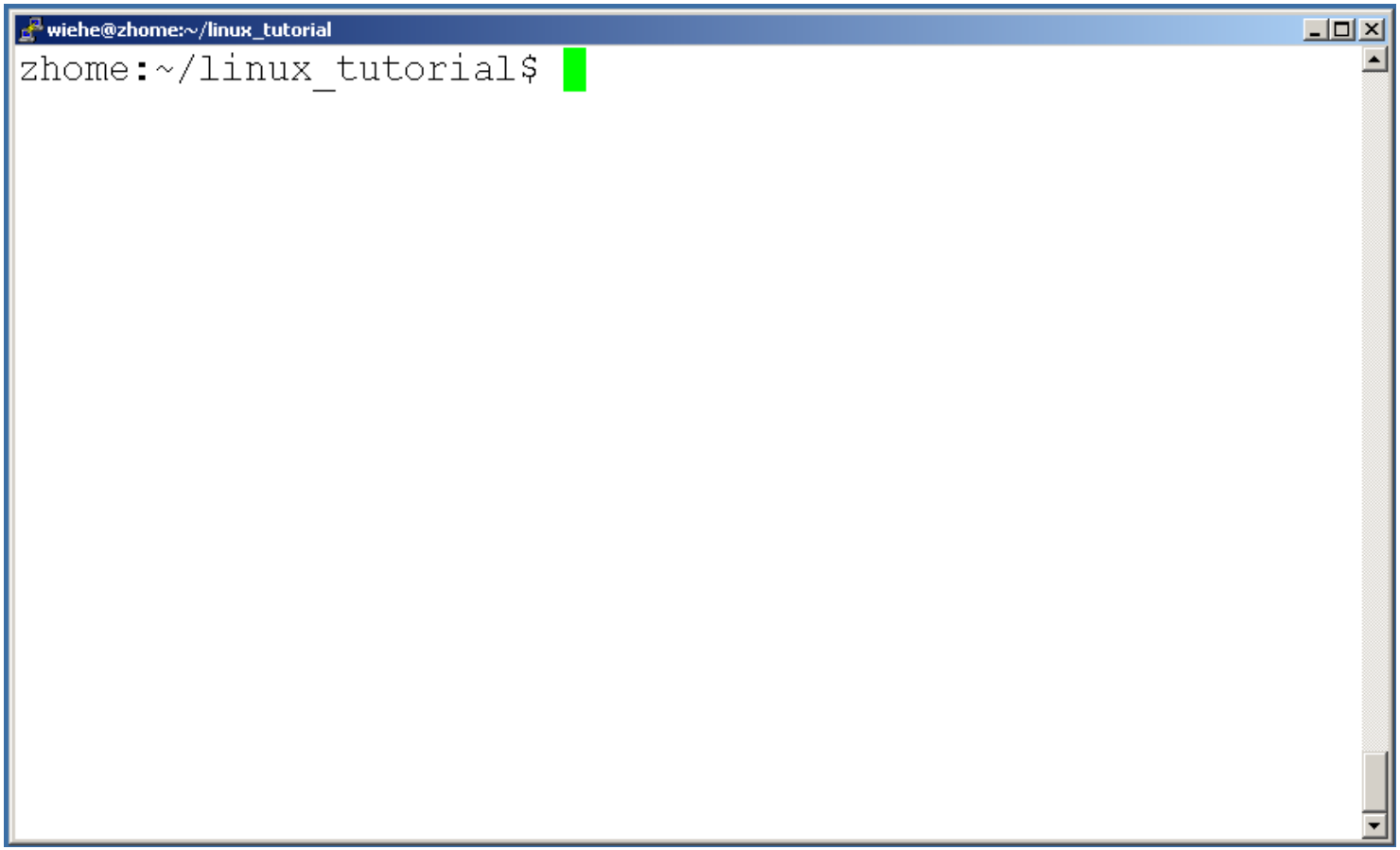
Intro to Linux Commands

Connecting to a Unix/Linux system

- Open up a terminal (CTRL + ALT +T) :



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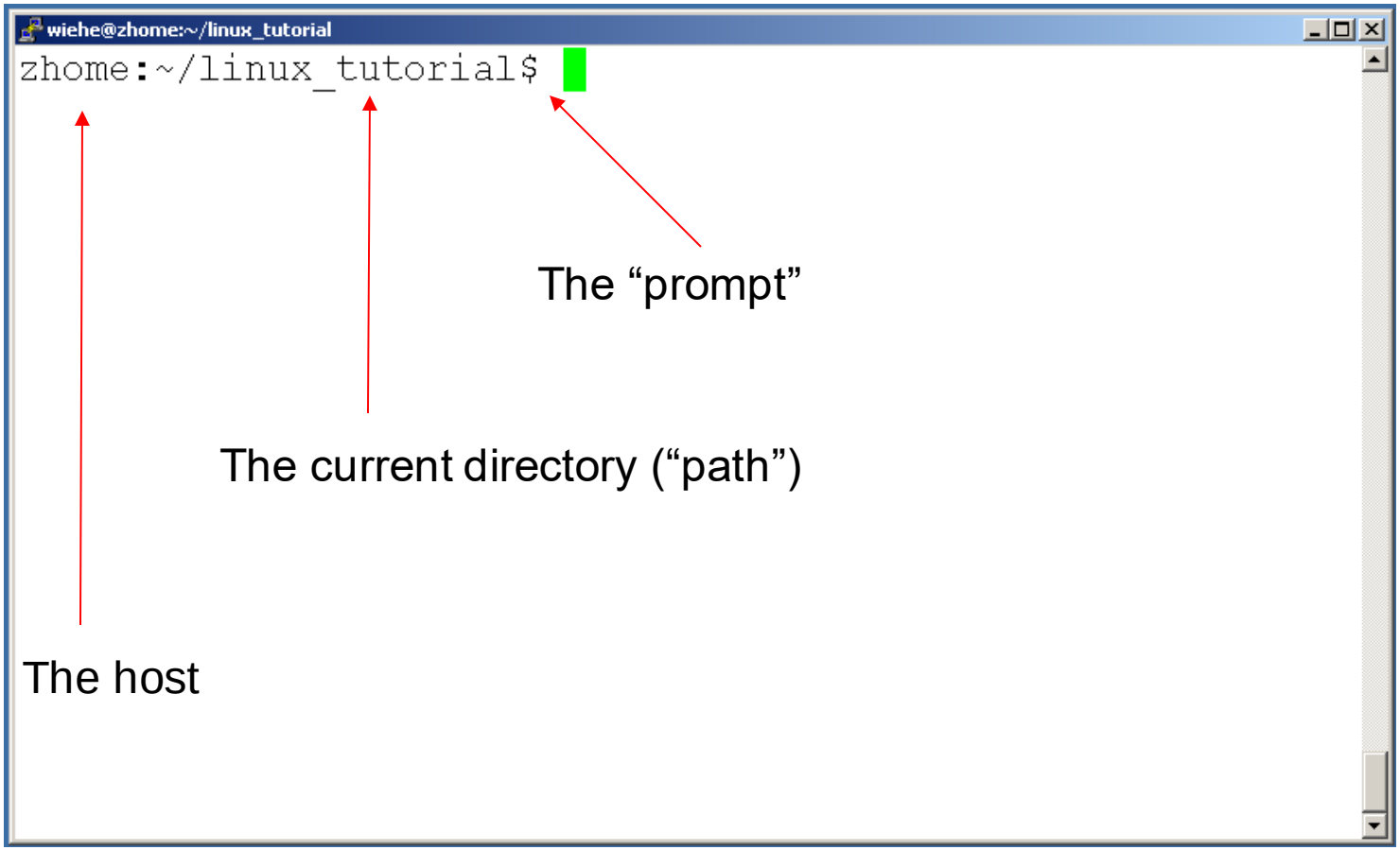


What exactly is a “shell”?

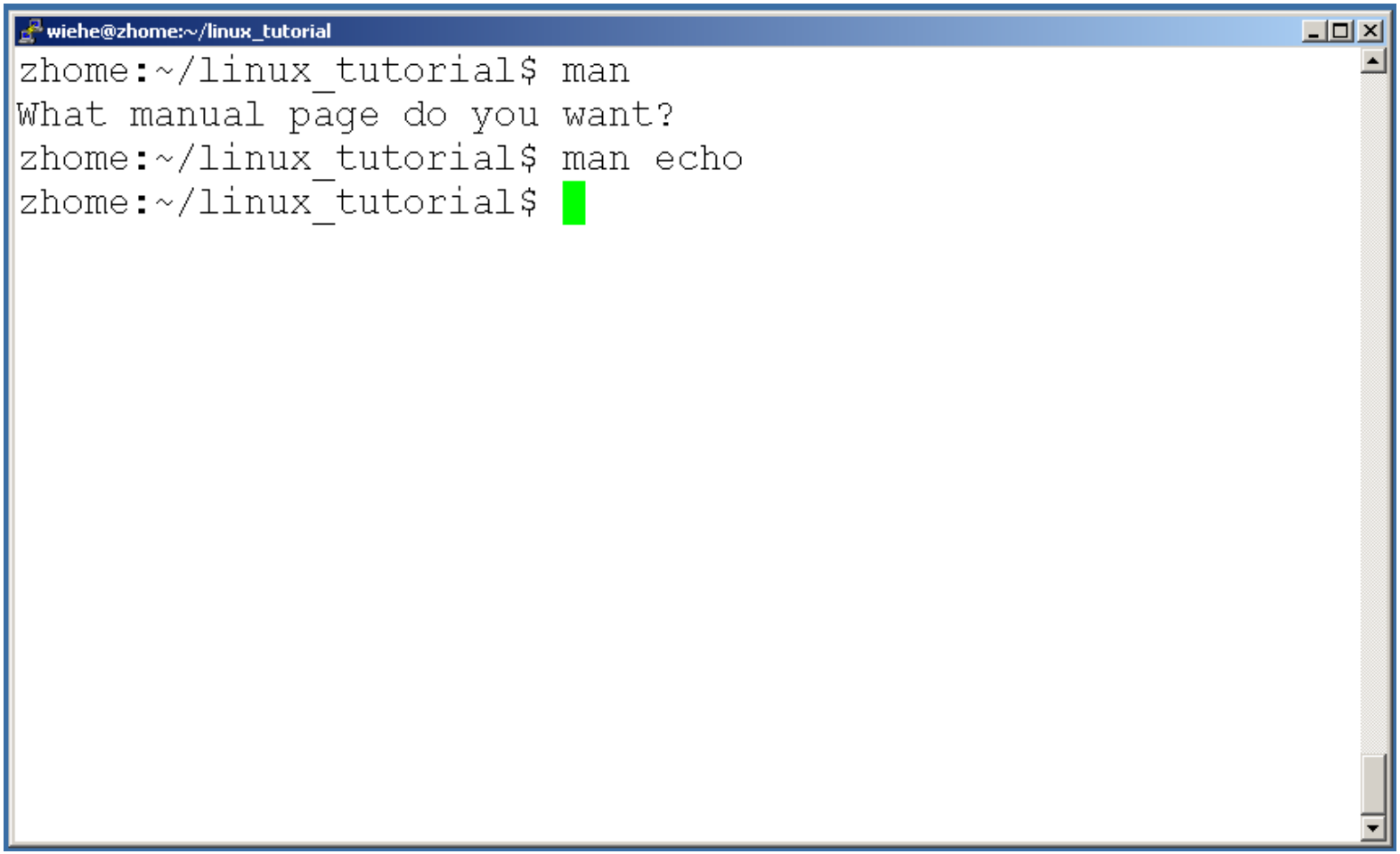
- After logging in, Linux/Unix starts another program called the **shell**
- The shell interprets commands the user types and manages their execution
  - The shell communicates with the internal part of the operating system called the **kernel**
  - The most popular shells are: tcsh, csh, korn, and bash
  - The differences are most times subtle
  - For this tutorial, we are using bash

- Shell commands are **CASE SENSITIVE!**

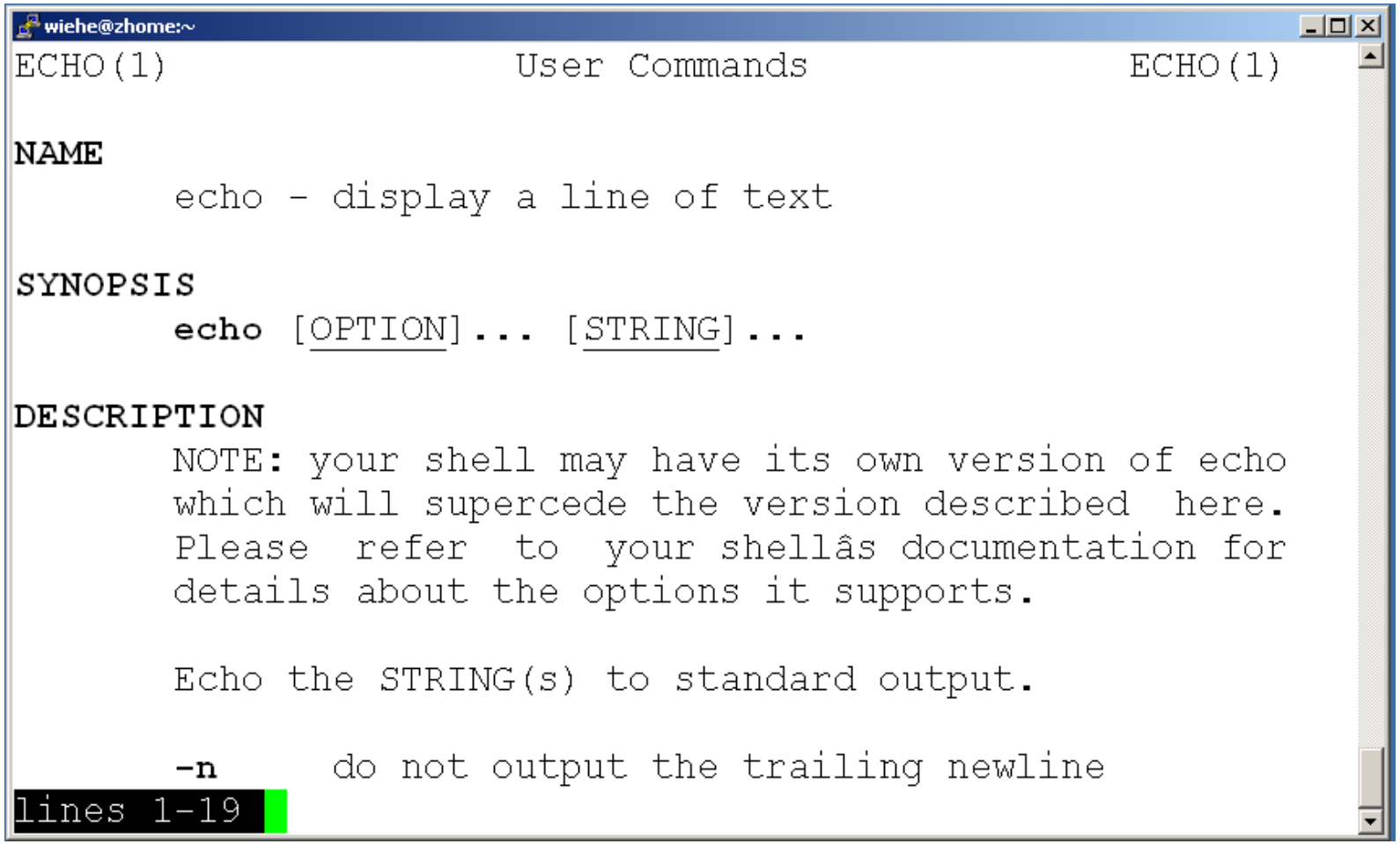
Help!

- Whenever you need help with a command type “man” and the command name

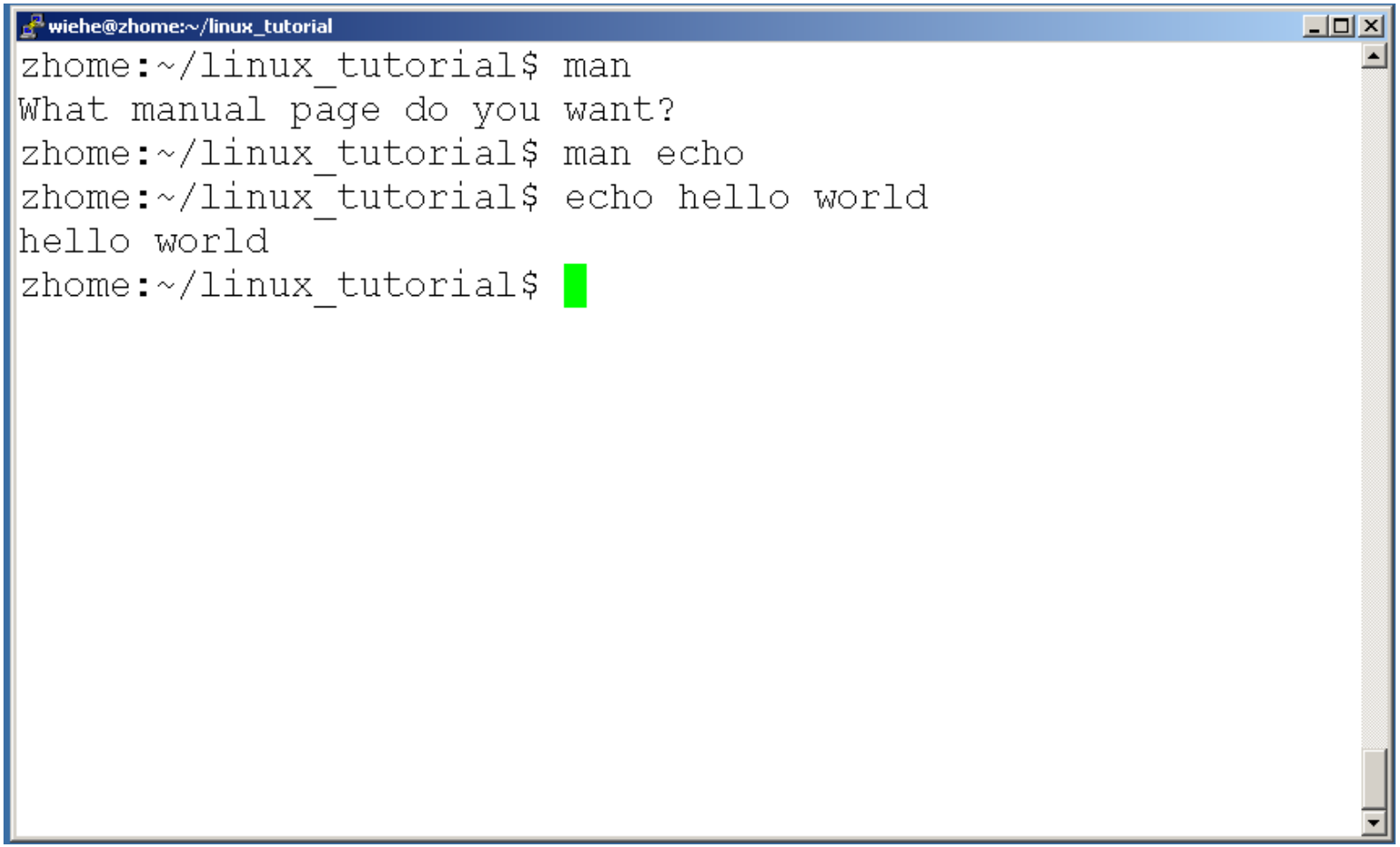
Help!


wiehe@zhome:~/linux_tutorial
zhome:~/linux_tutorial$ man
What manual page do you want?
zhome:~/linux_tutorial$ man echo
zhome:~/linux_tutorial$

Help!

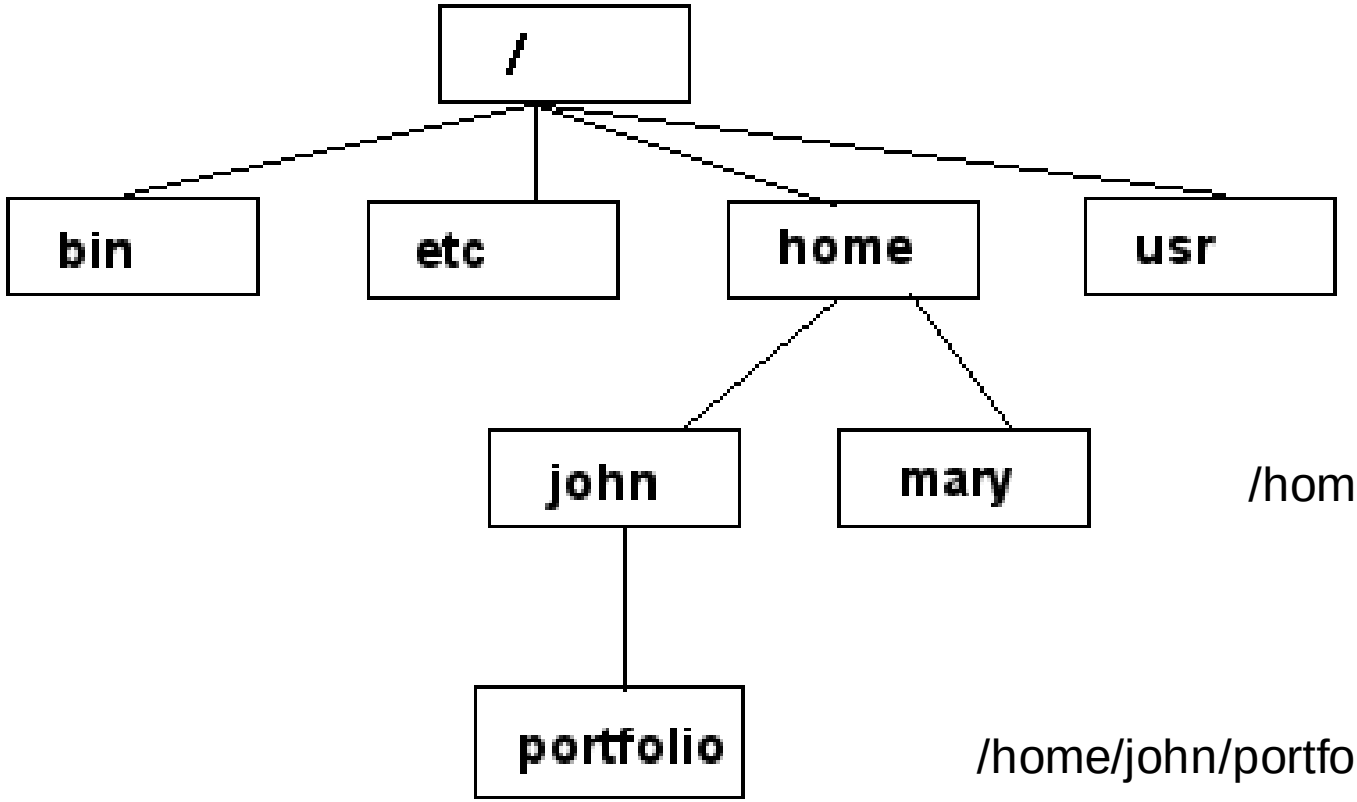

wiehe@zhome:~
ECHO(1) User Commands ECHO(1)
NAME
echo - display a line of text
SYNOPSIS
echo [OPTION]... [STRING]...
DESCRIPTION
NOTE: your shell may have its own version of echo which will supercede the version described here. Please refer to your shellâs documentation for details about the options it supports.
Echo the STRING(s) to standard output.
-n do not output the trailing newline
lines 1-19

Help!


wiehe@zhome:~/linux_tutorial
zhome:~/linux_tutorial$ man
What manual page do you want?
zhome:~/linux_tutorial$ man echo
zhome:~/linux_tutorial$ echo hello world
hello world
zhome:~/linux_tutorial$

Unix/Linux File System

NOTE: Unix file names are **CASE SENSITIVE!**



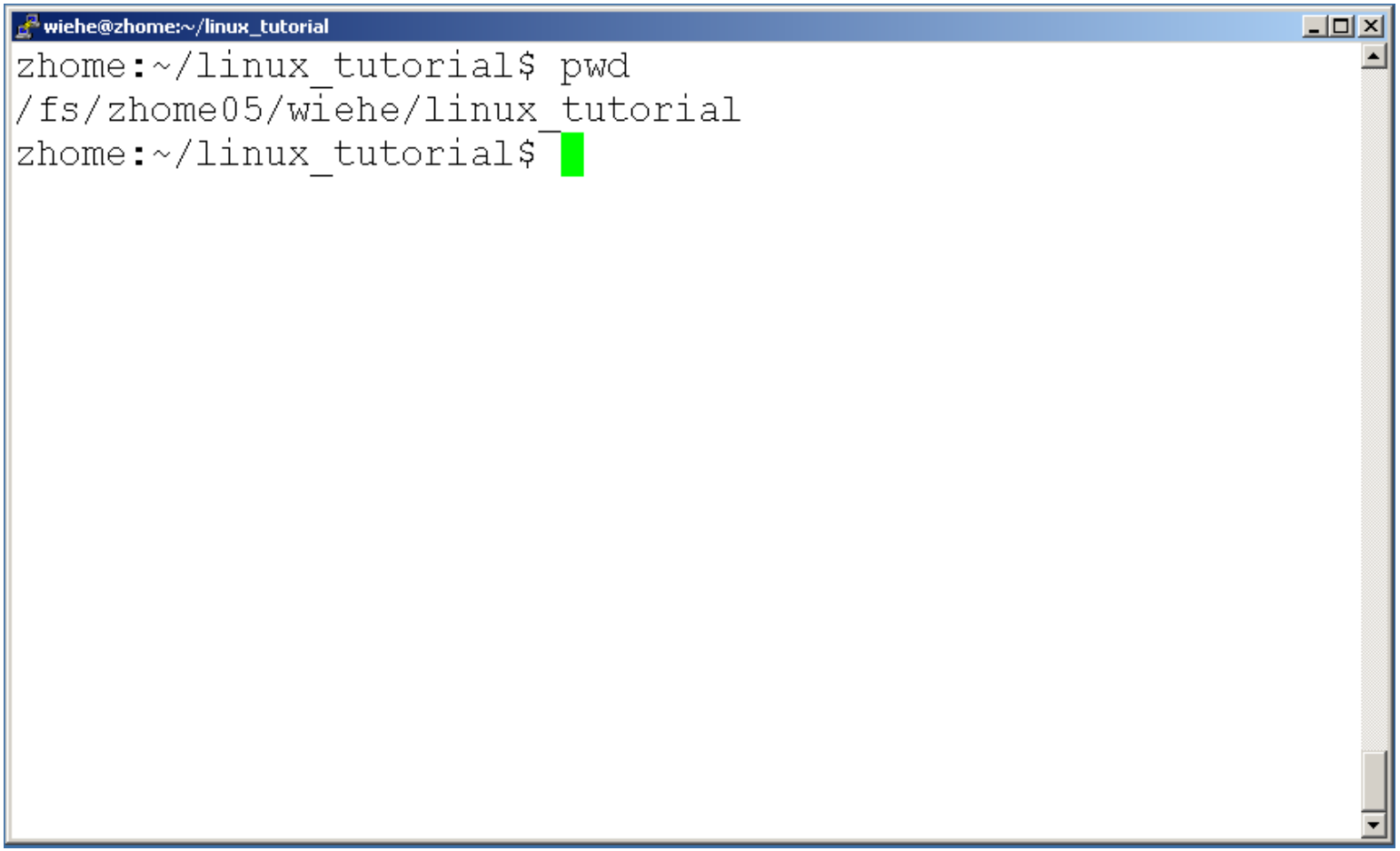
/home/mary/

/home/john/portfolio/

The Path

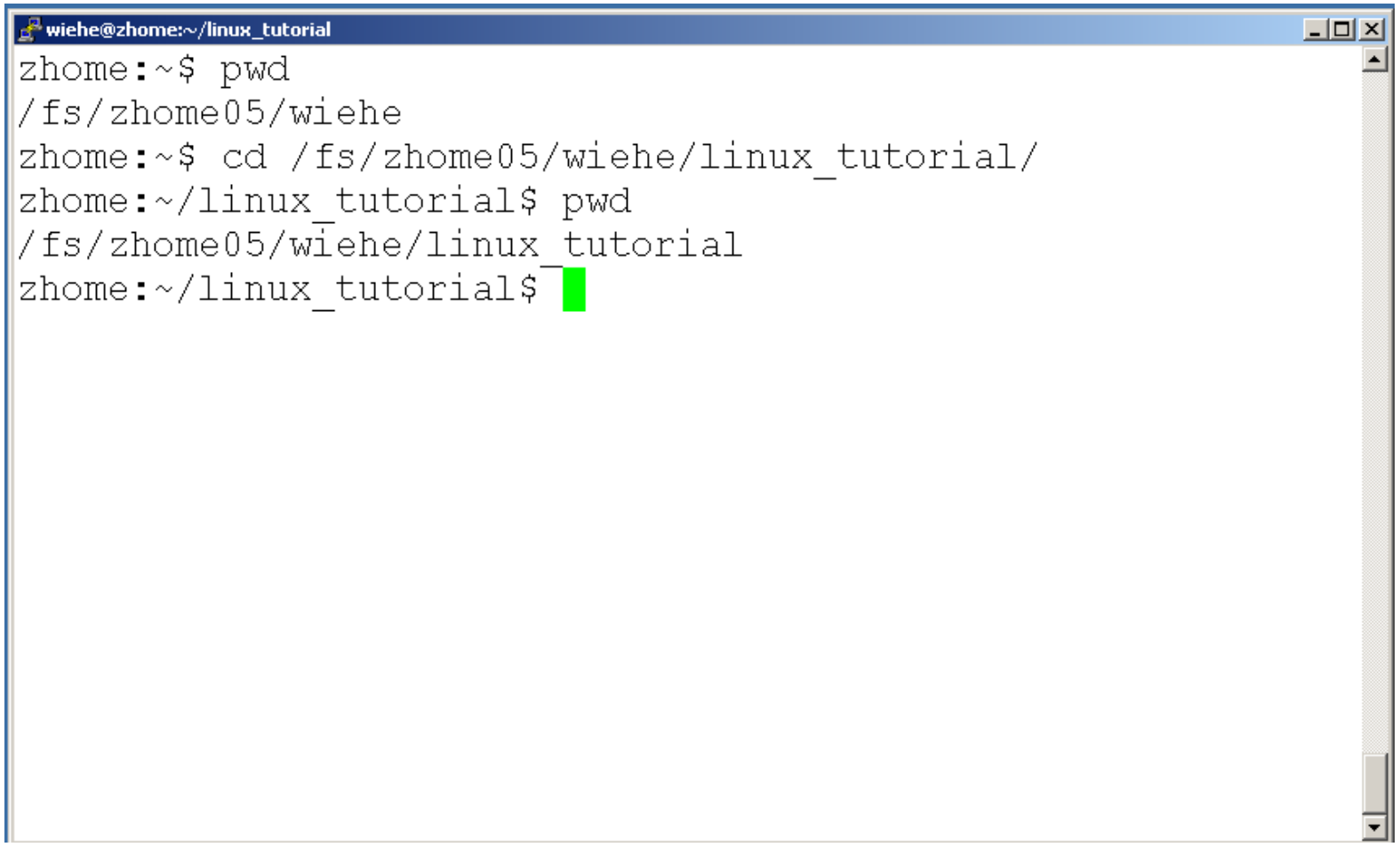
Command: pwd

- To find your current path use “pwd”



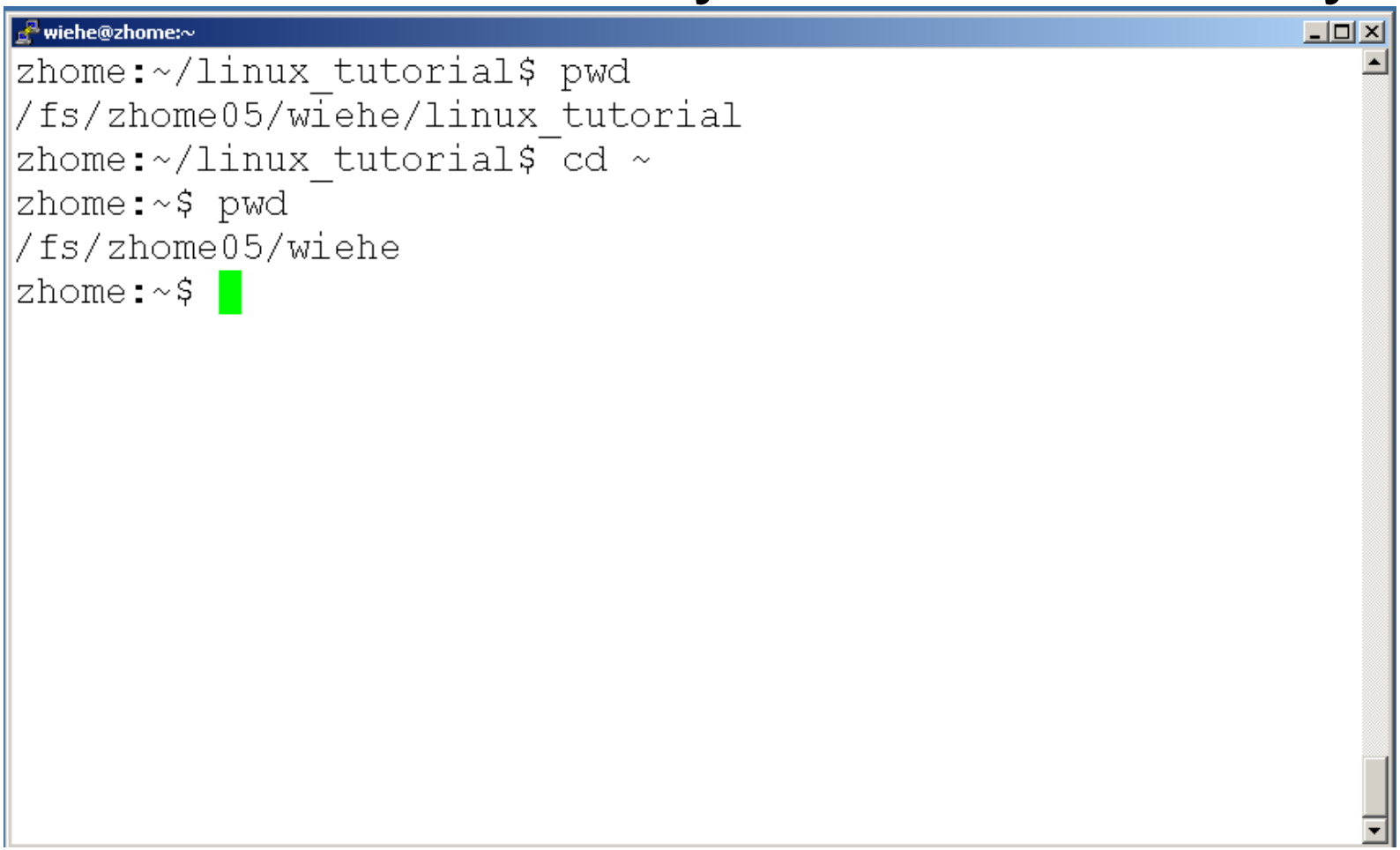
Command: cd

To change to a specific directory use “cd”



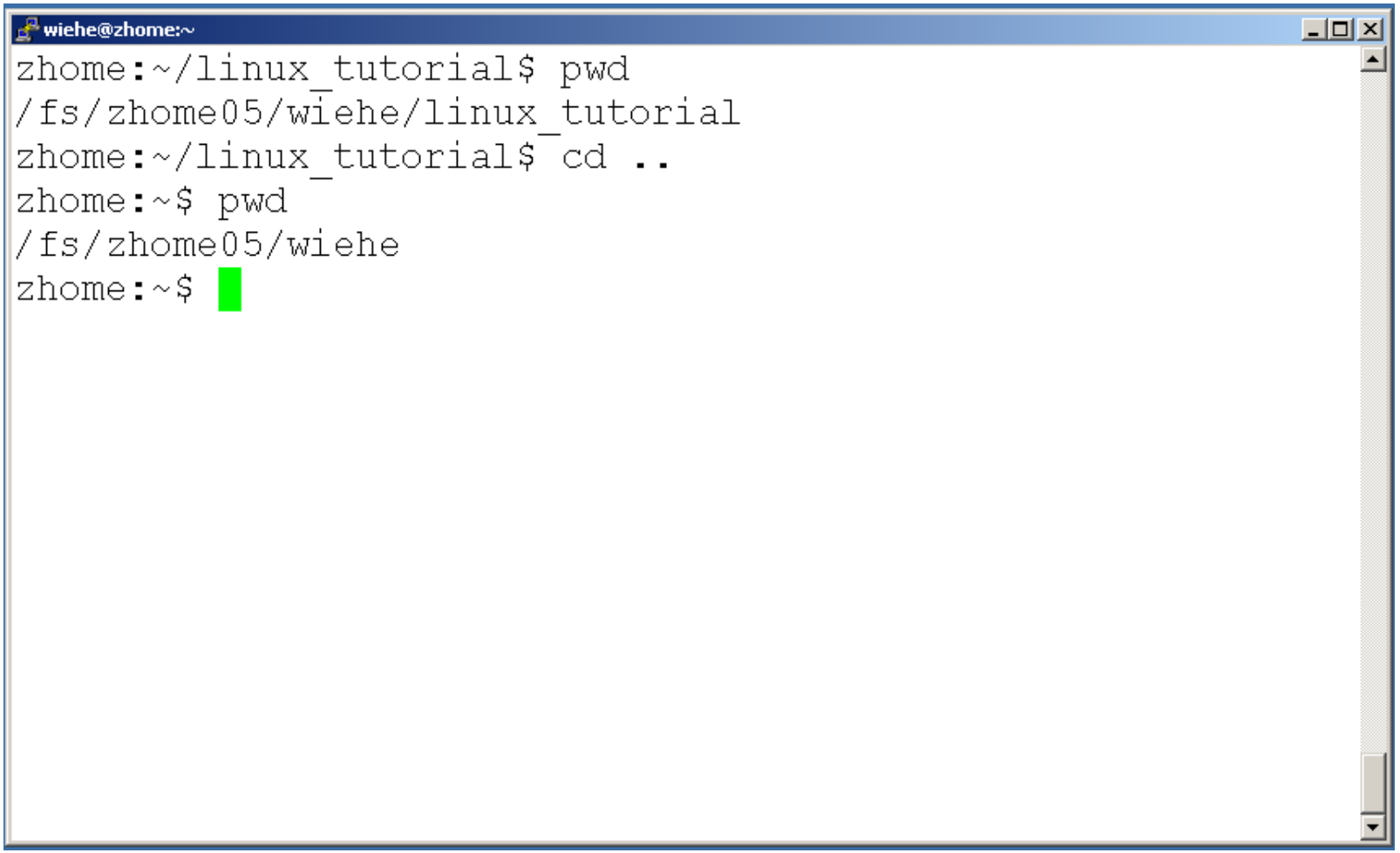
Command: cd

- “~” is the location of your home directory



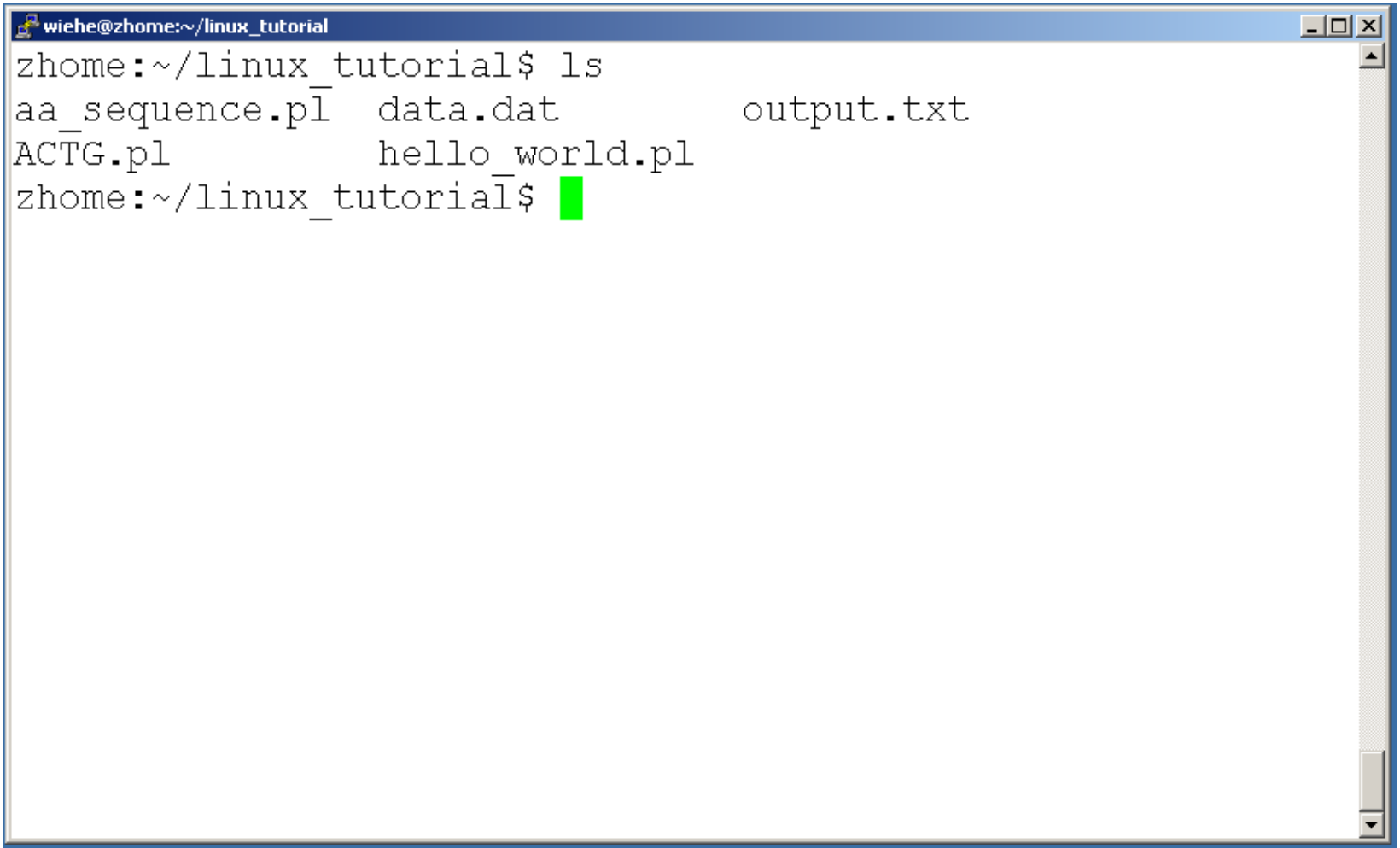
Command: cd

- ".." is the location of the directory below current one



Command: ls

To list the files in the current directory use “ls”



Command: ls

ls has many options

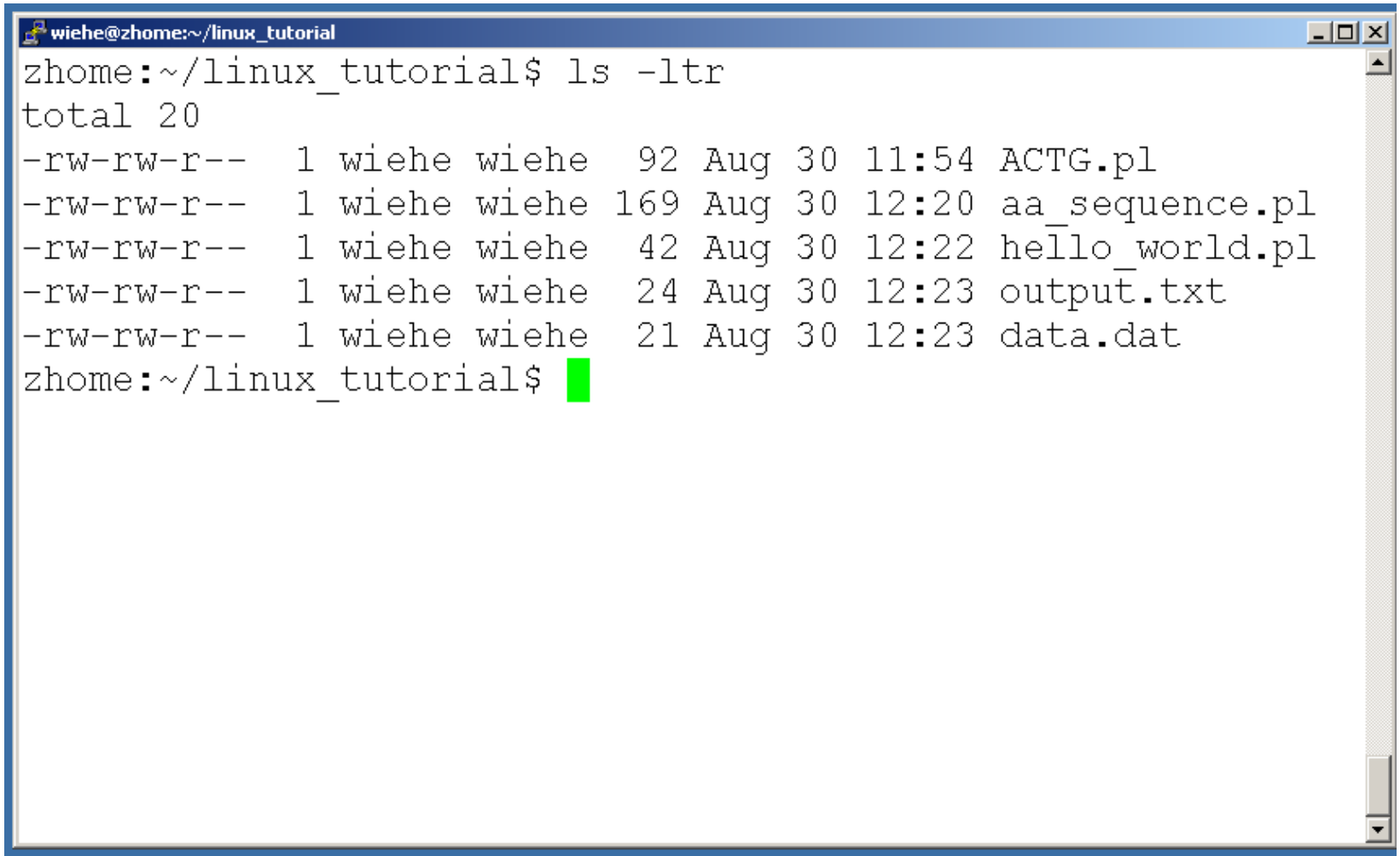
- -l long list (displays lots of info)
  - -t sort by modification time
  - -S sort by size
  - -h list file sizes in human readable format
  - -r reverse the order

"man ls" for more options

Options can be combined: "ls -ltr"

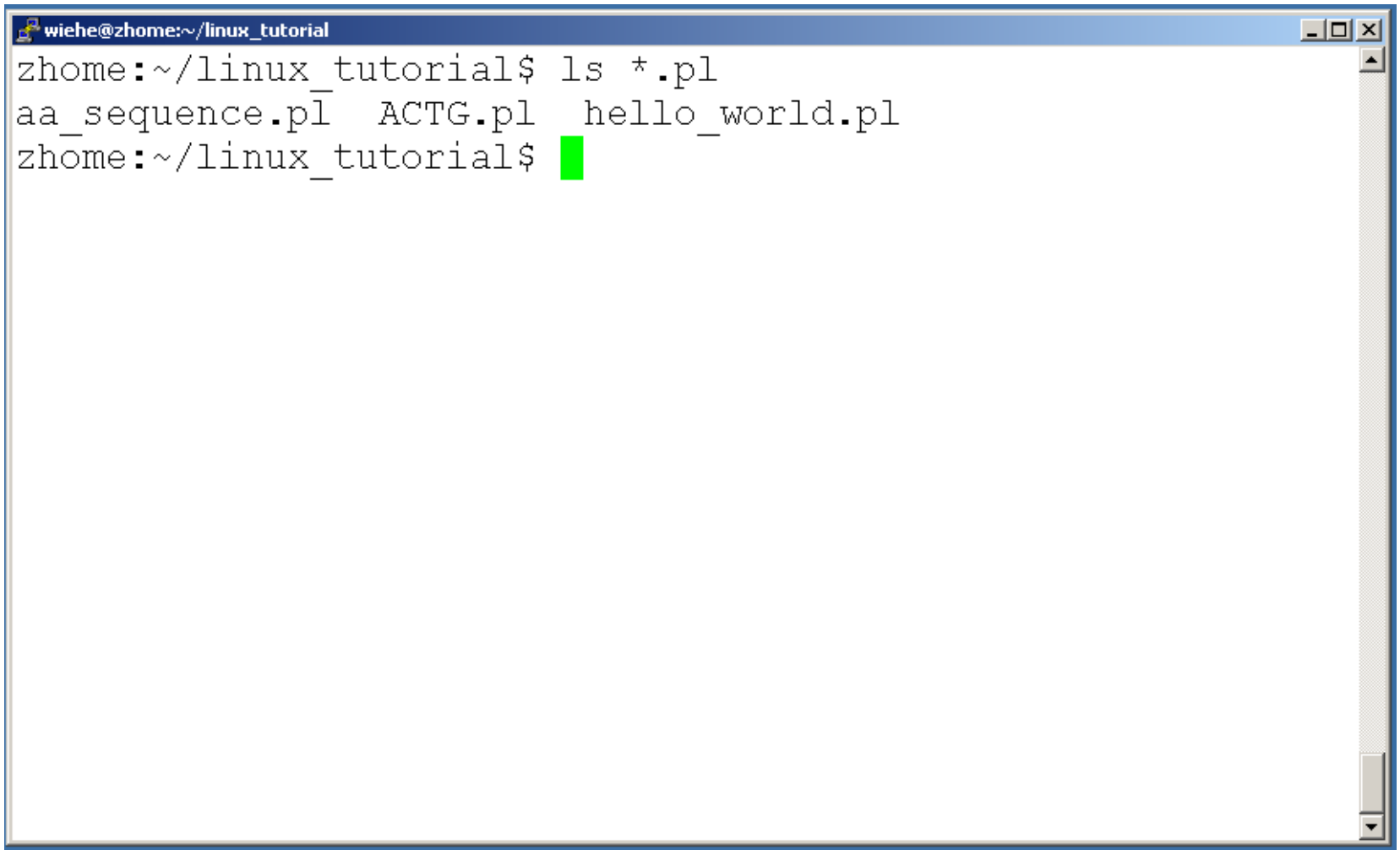
Command: ls -ltr

List files by time in reverse order with long listing



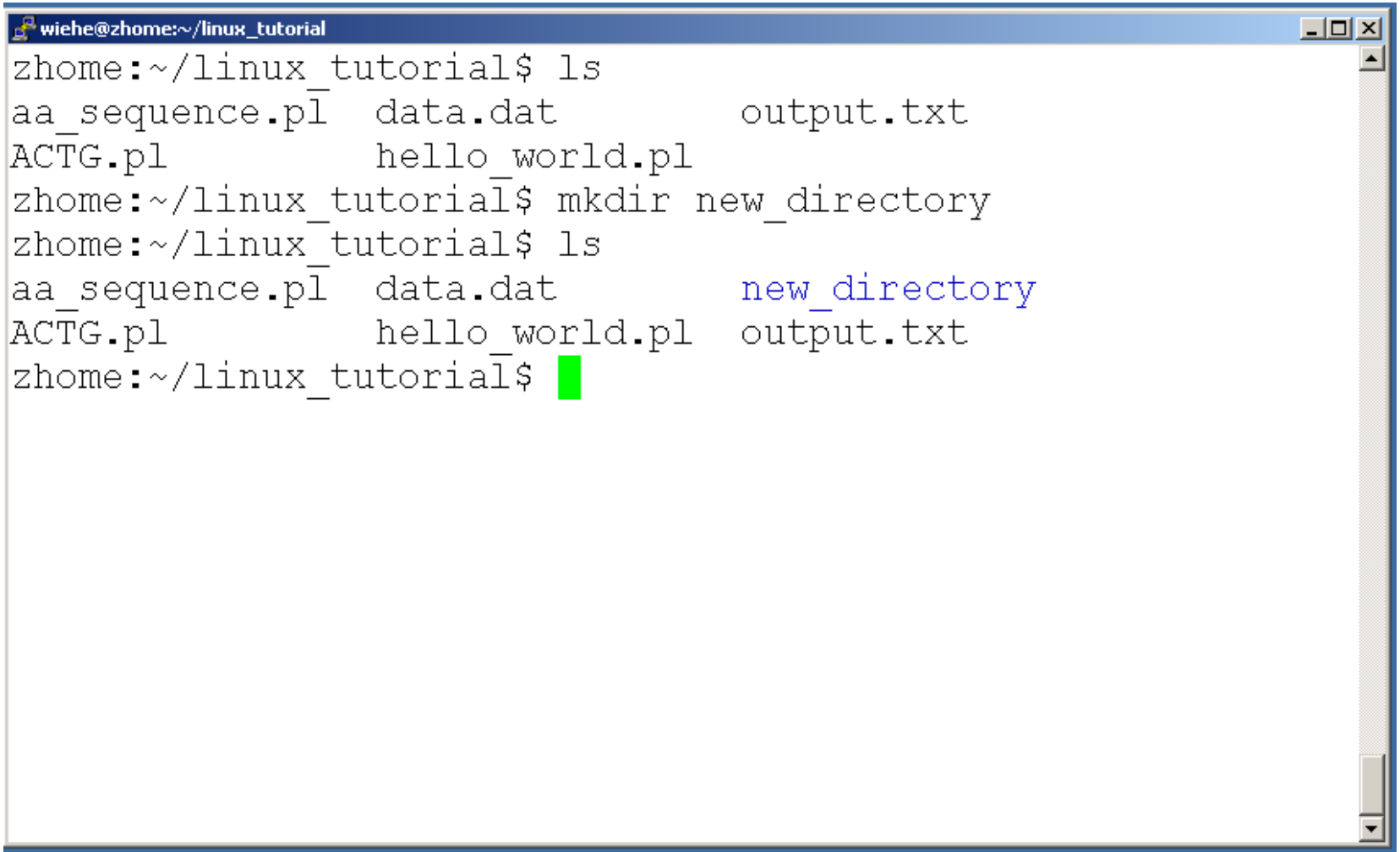
General Syntax: *

"*" can be used as a wildcard in unix/linux



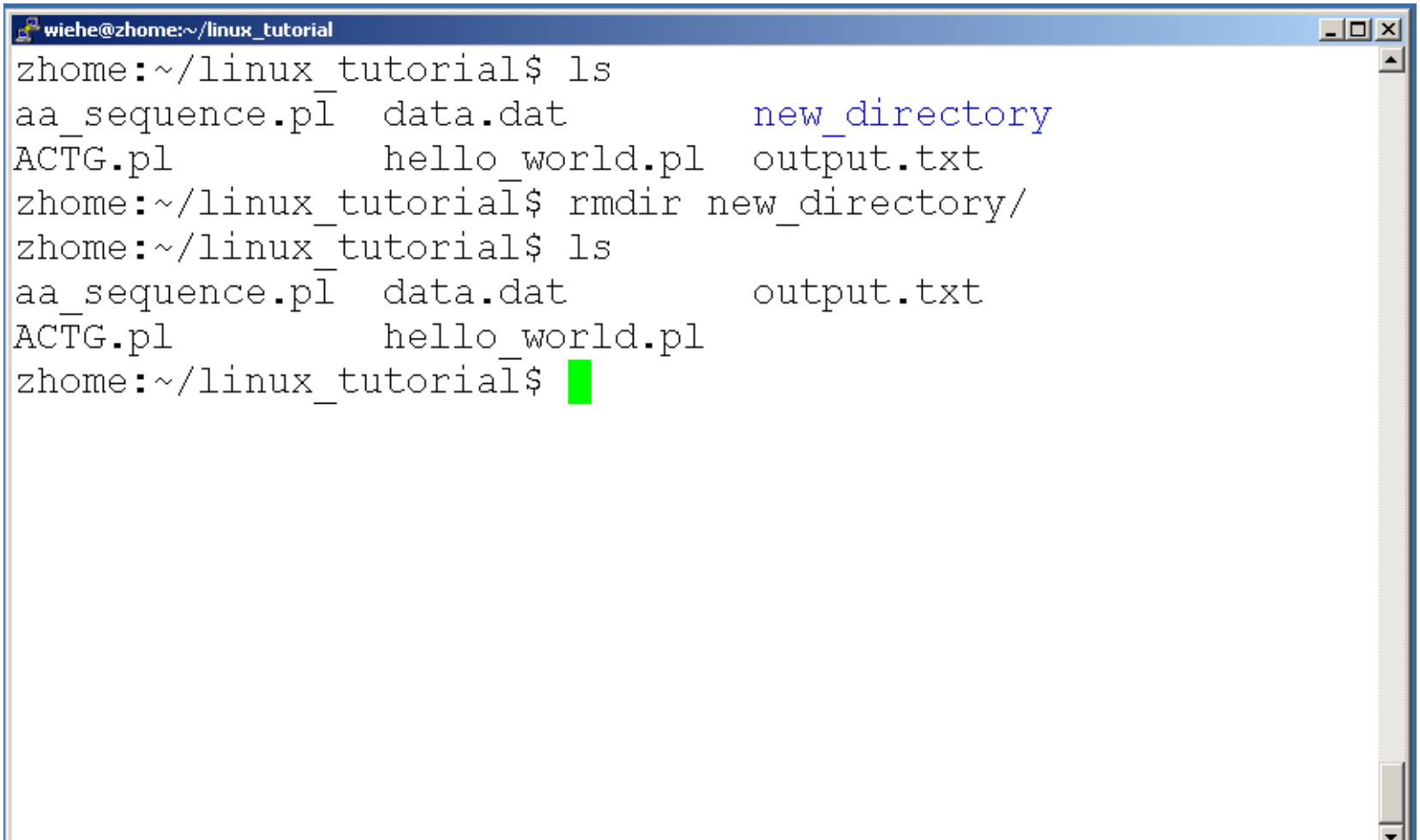
Command: mkdir

To create a new directory use “mkdir”



Command: rmdir

To remove and empty directory use “rmdir”



Displaying a file

- Various ways to display a file in Unix
  - cat
  - less
  - head
  - tail

Linux

DUMPS AN ENTIRE FILE
TO STANDARD OUTPUT

GOOD FOR DISPLAYING
SHORT, SIMPLE FILES

Command: cat

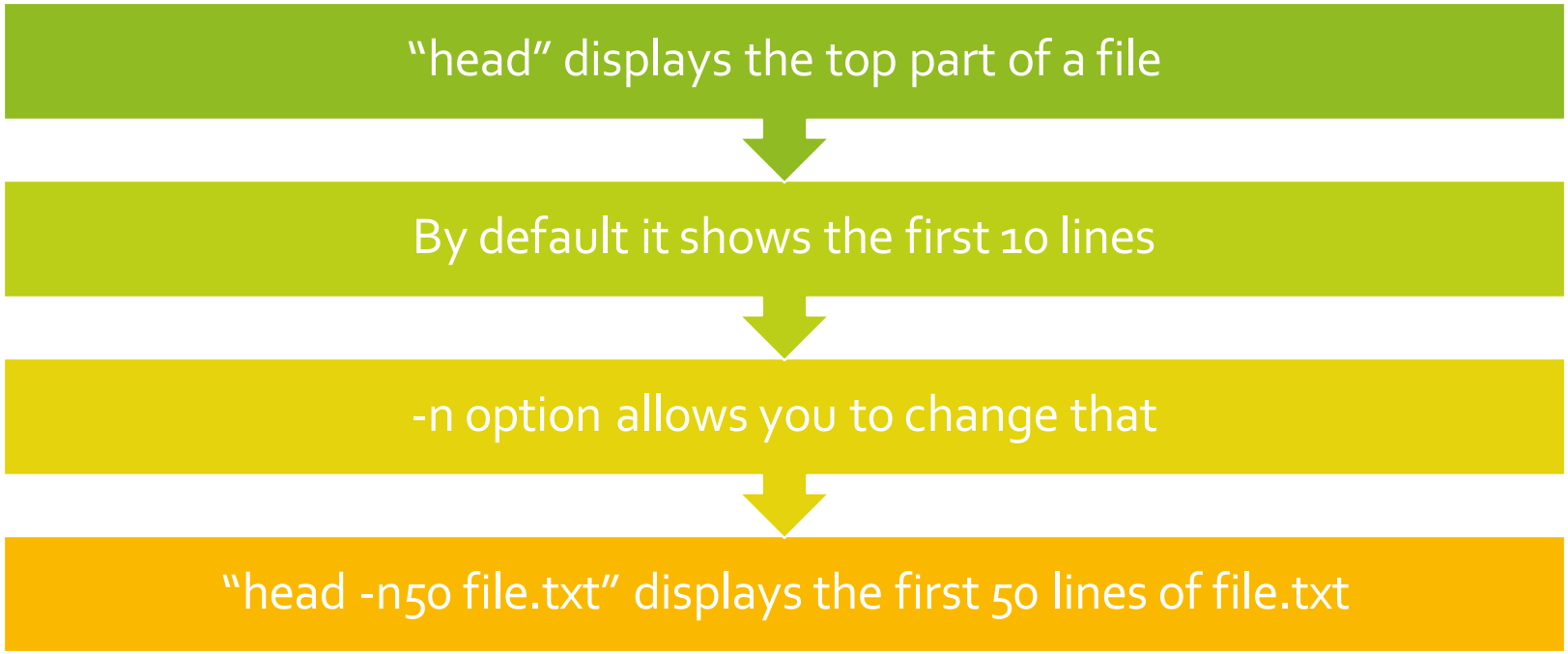
Command : less

"less" displays a file, allowing forward/backward movement within it

- return scrolls forward one line, space one page
- y scrolls back one line, b one page

use "/" to search for a string

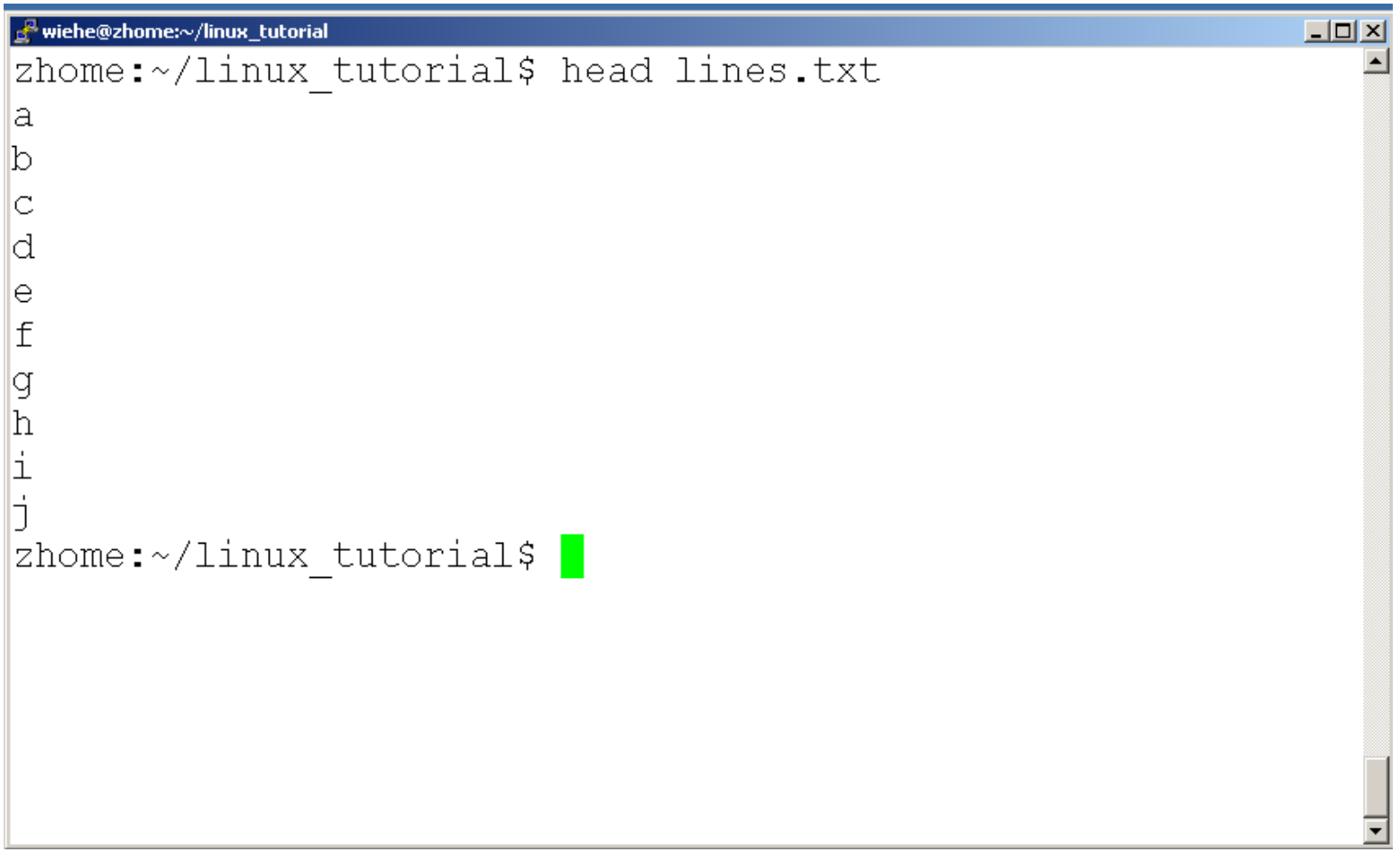
Press q to quit



Command: head

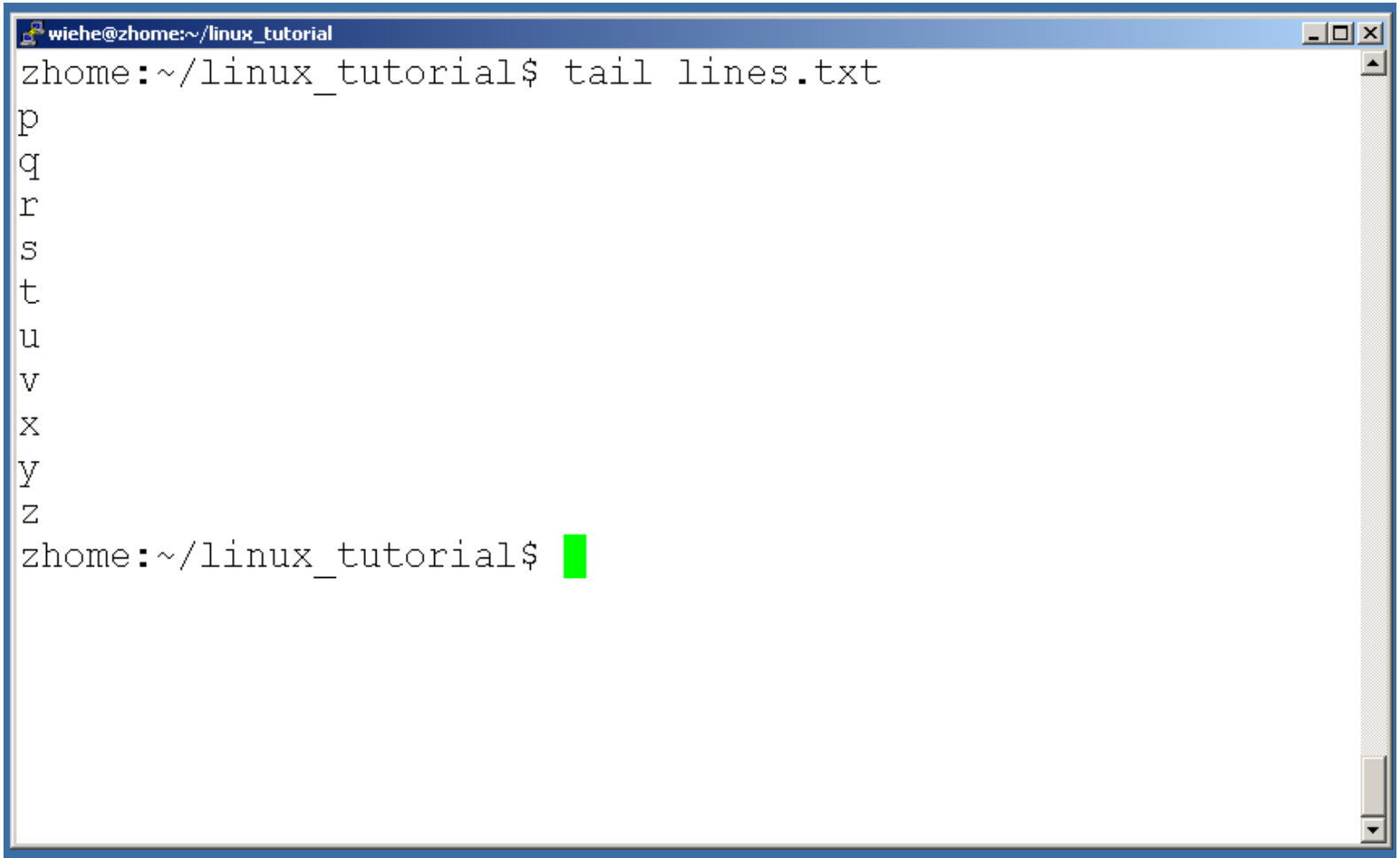
Command: head

Here's an example of using "head":



Command: tail

- Same as head, but shows the last lines



COPYING A FILE: CP

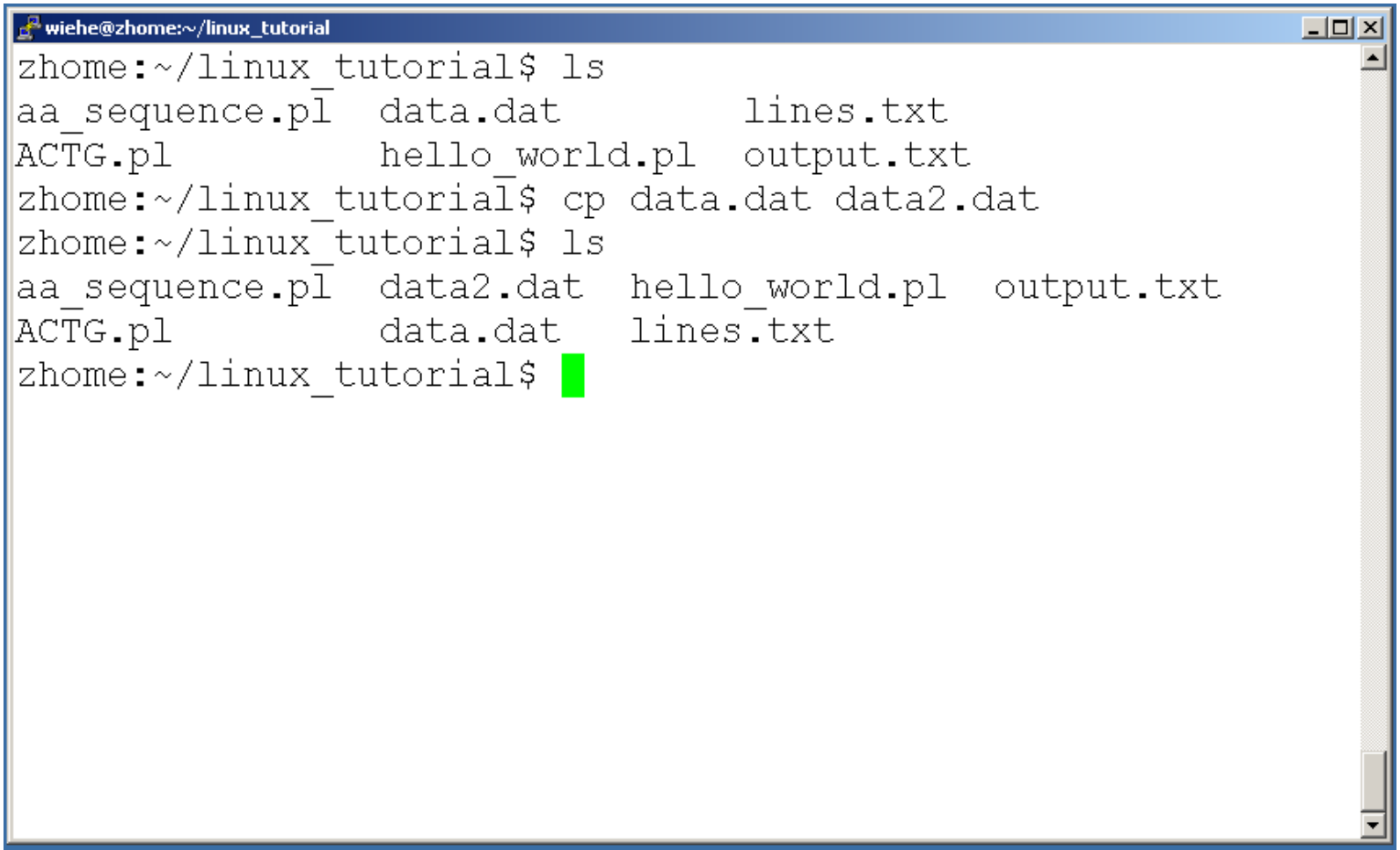
MOVE OR RENAME A FILE: MV

REMOVE A FILE: RM

File Commands

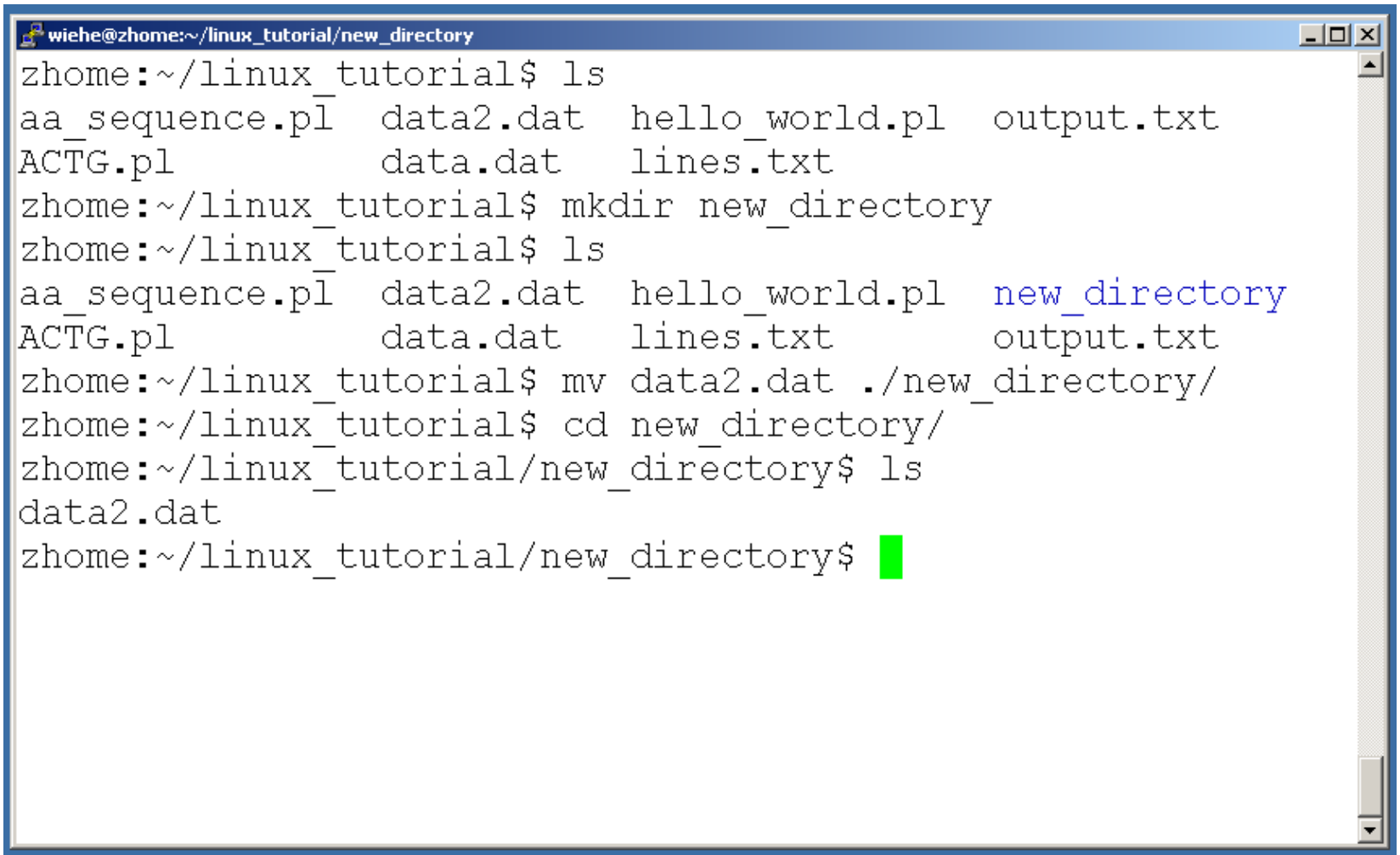
Command: cp

To copy a file use “cp”



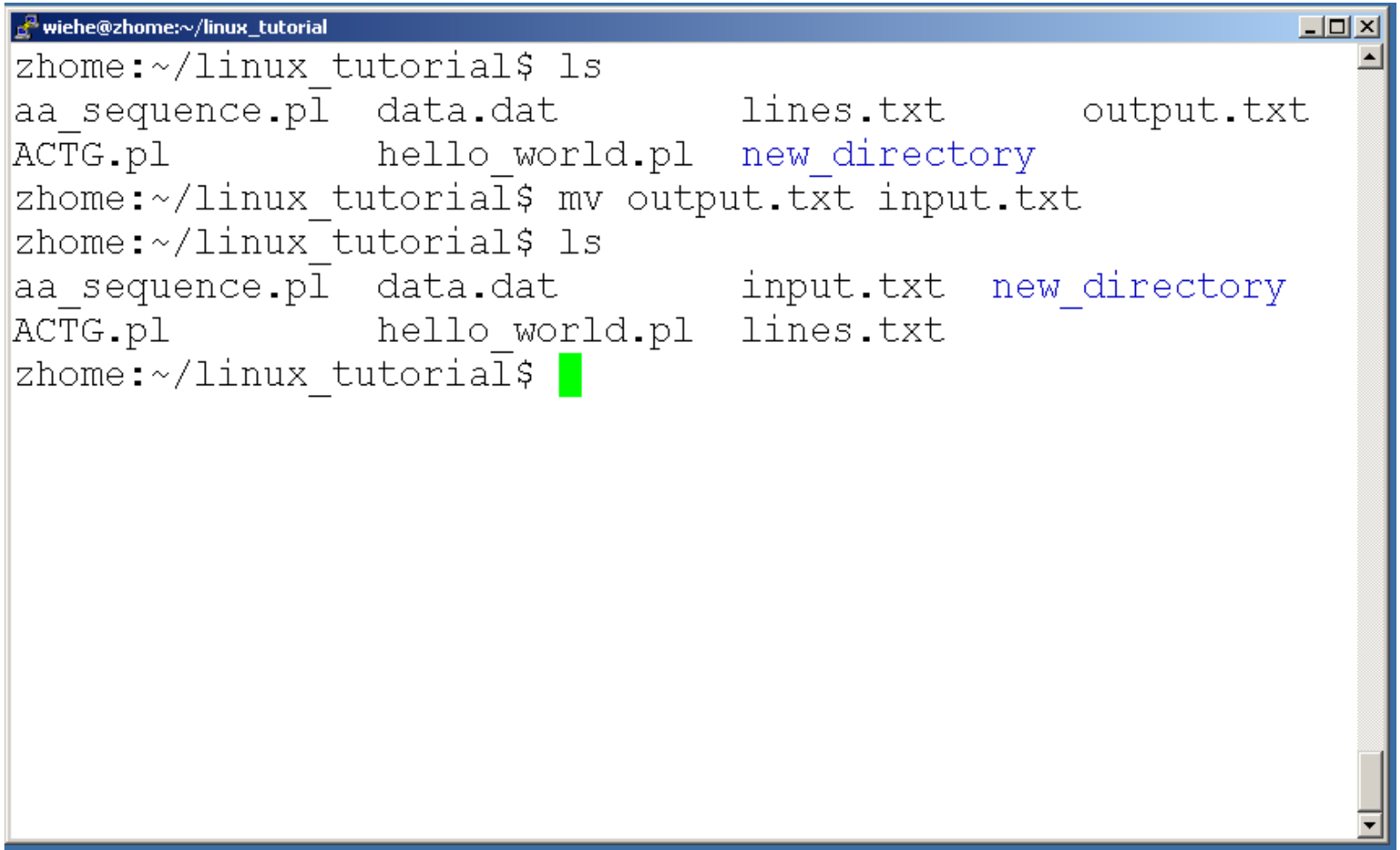
Command: mv

- To move a file to a different location use “mv”



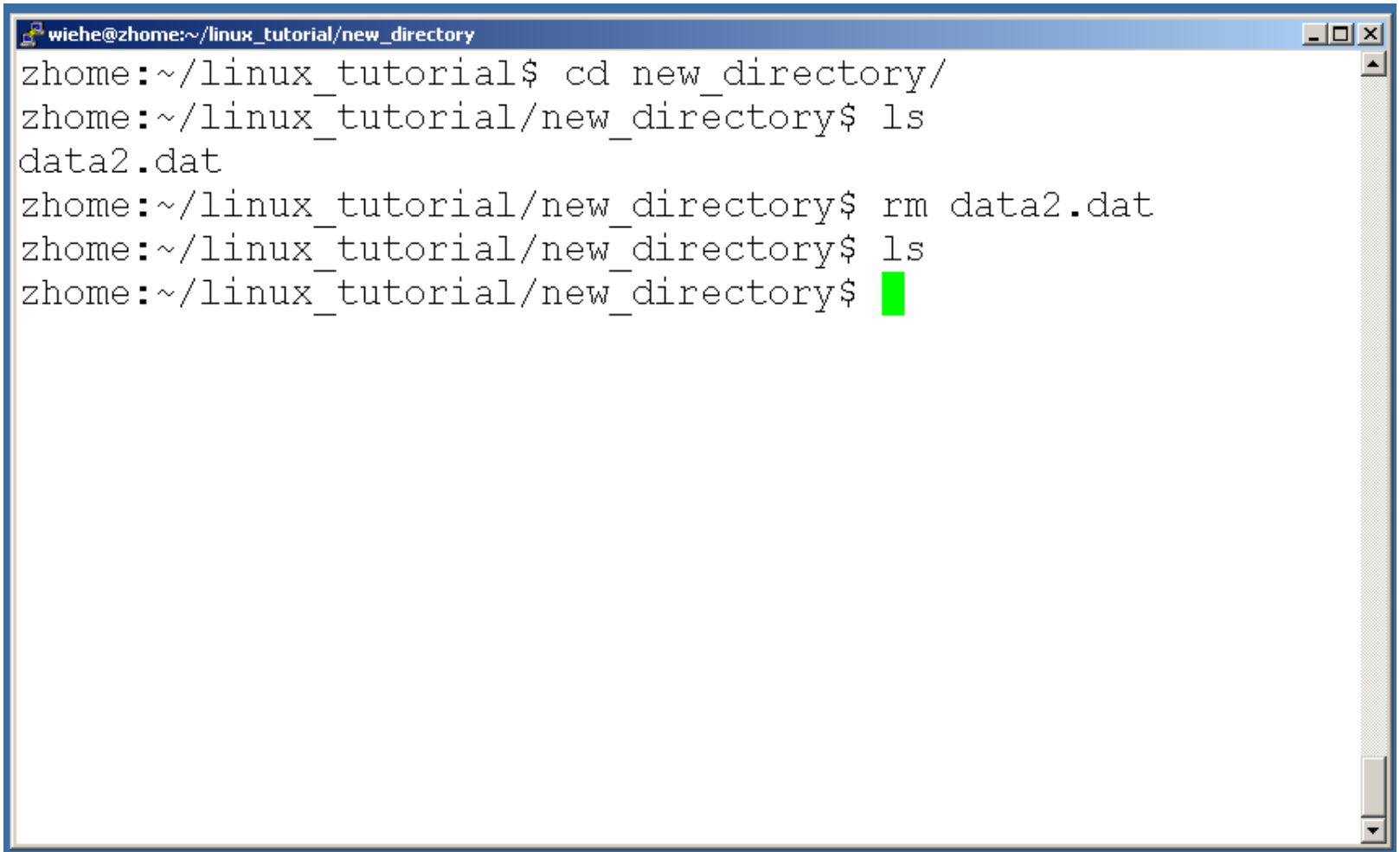
Command: mv

mv can also be used to rename a file



Command: rm

To remove a file use “rm”



To remove a file "recursively": rm –r

Used to remove all files and directories

Be very careful, deletions are permanent in Unix/Linux

Command: rm

Each file in Unix/Linux has an associated permission level

This allows the user to prevent others from reading/writing/executing their files or directories

Use "ls -l *filename*" to find the permission level of that file

File permissions

"r" means "read only" permission

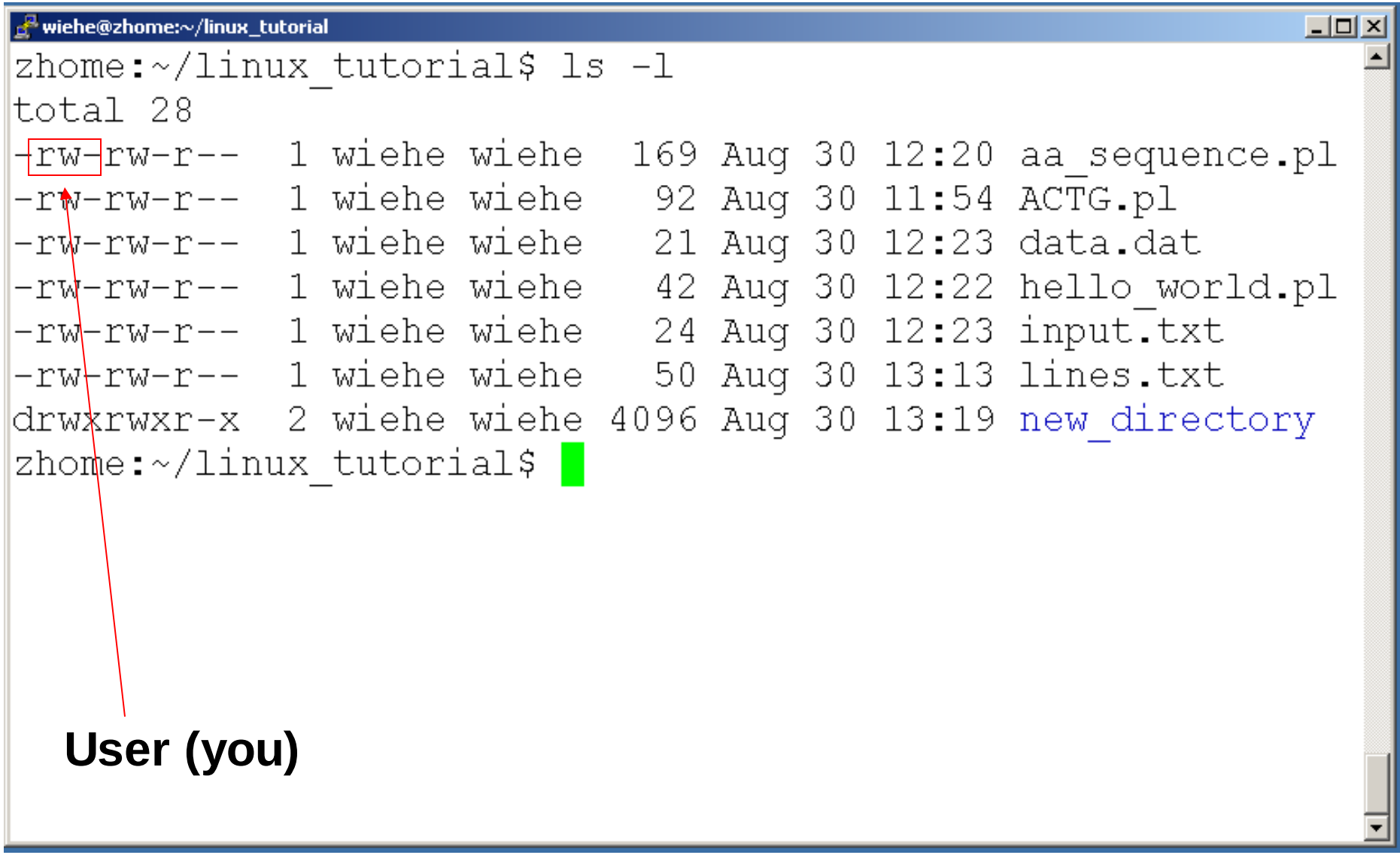
"w" means "write" permission

"x" means "execute" permission

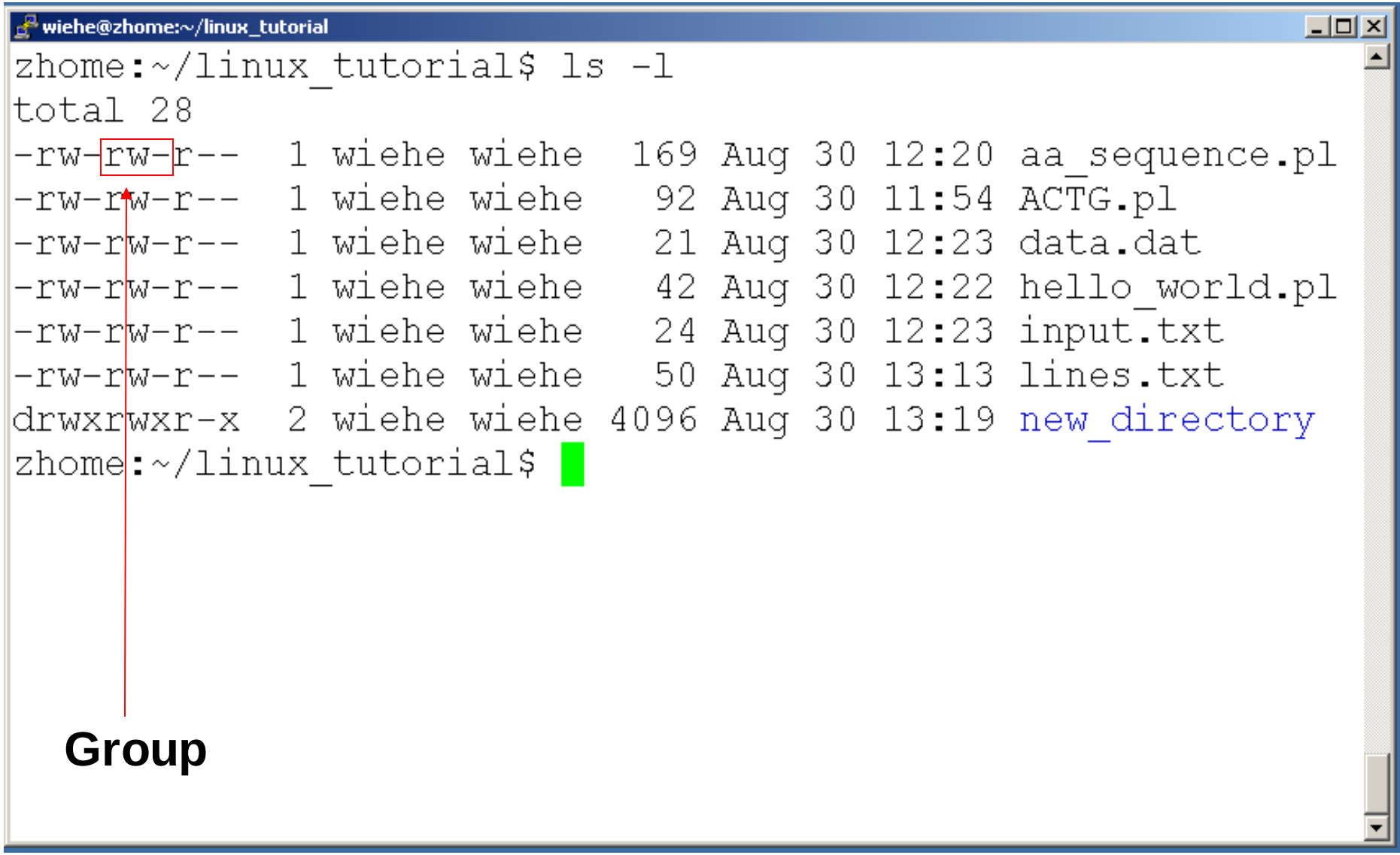
- In case of directory, **"x"** grants permission to list directory contents

Permission levels

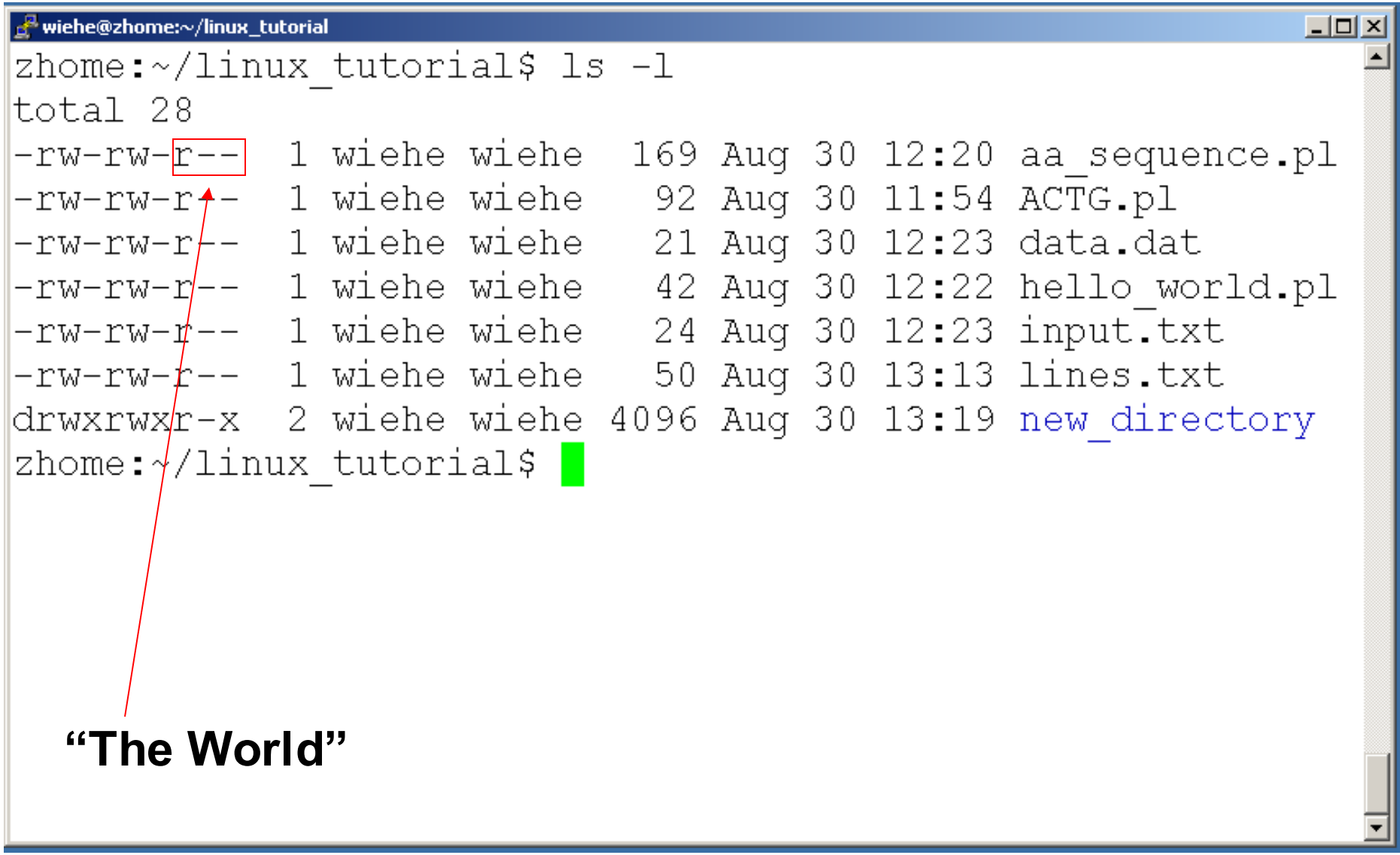
File Permissions



File Permissions



File Permissions

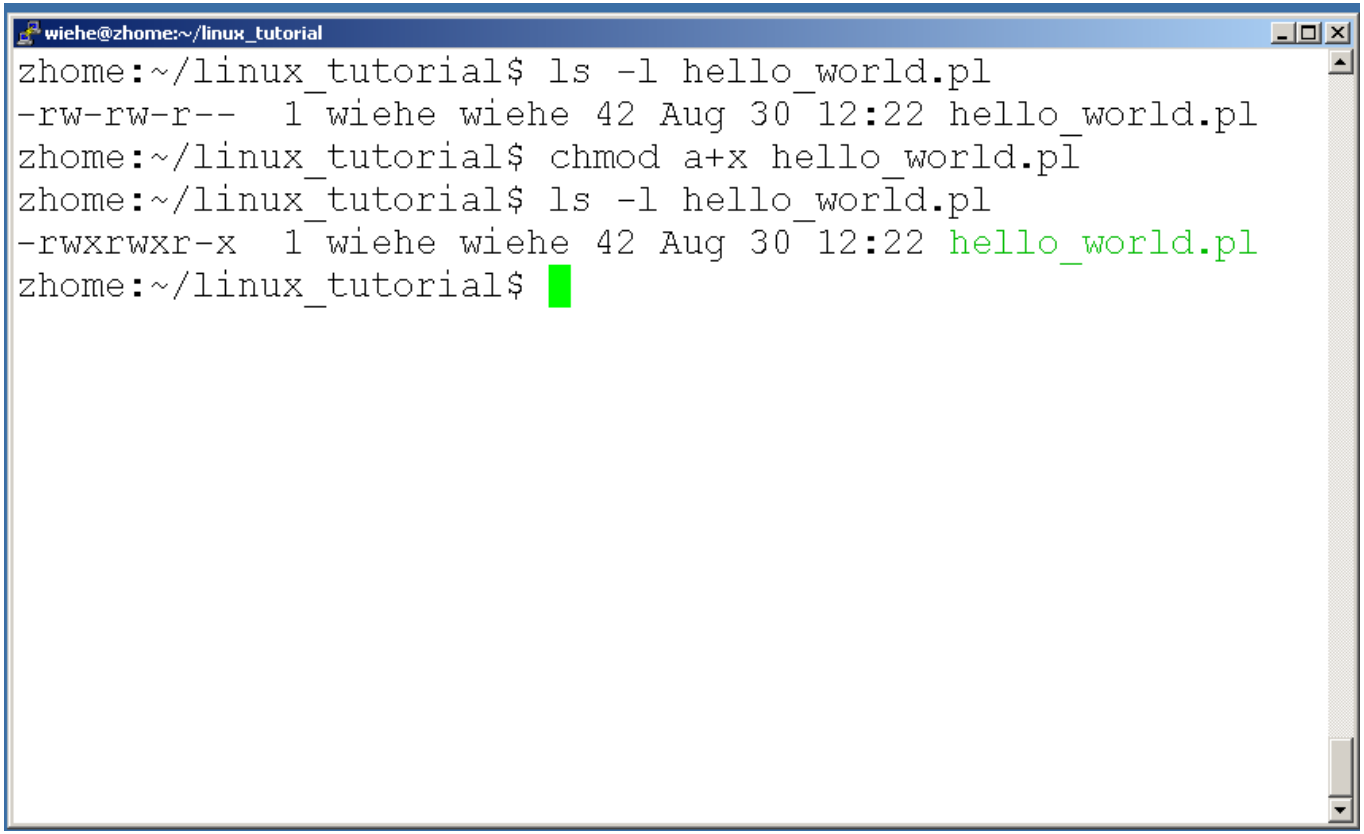


Command: chmod

If you own the file, you can change it's permissions with "chmod"

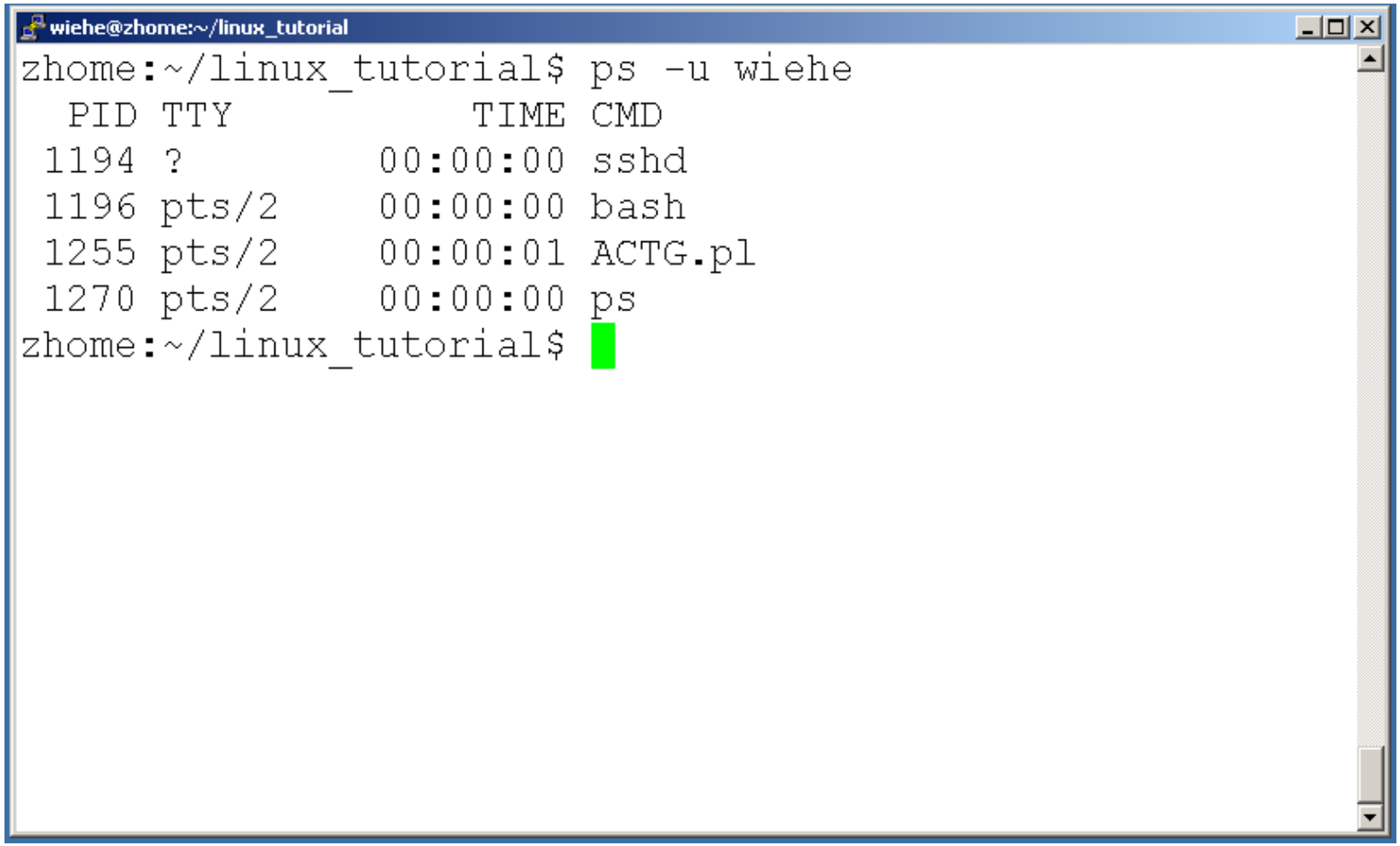
Syntax: chmod [**u**ser/**g**roup/**o**thers/**a**ll]+[permission] [file(s)]

Below we grant execute permission to all:



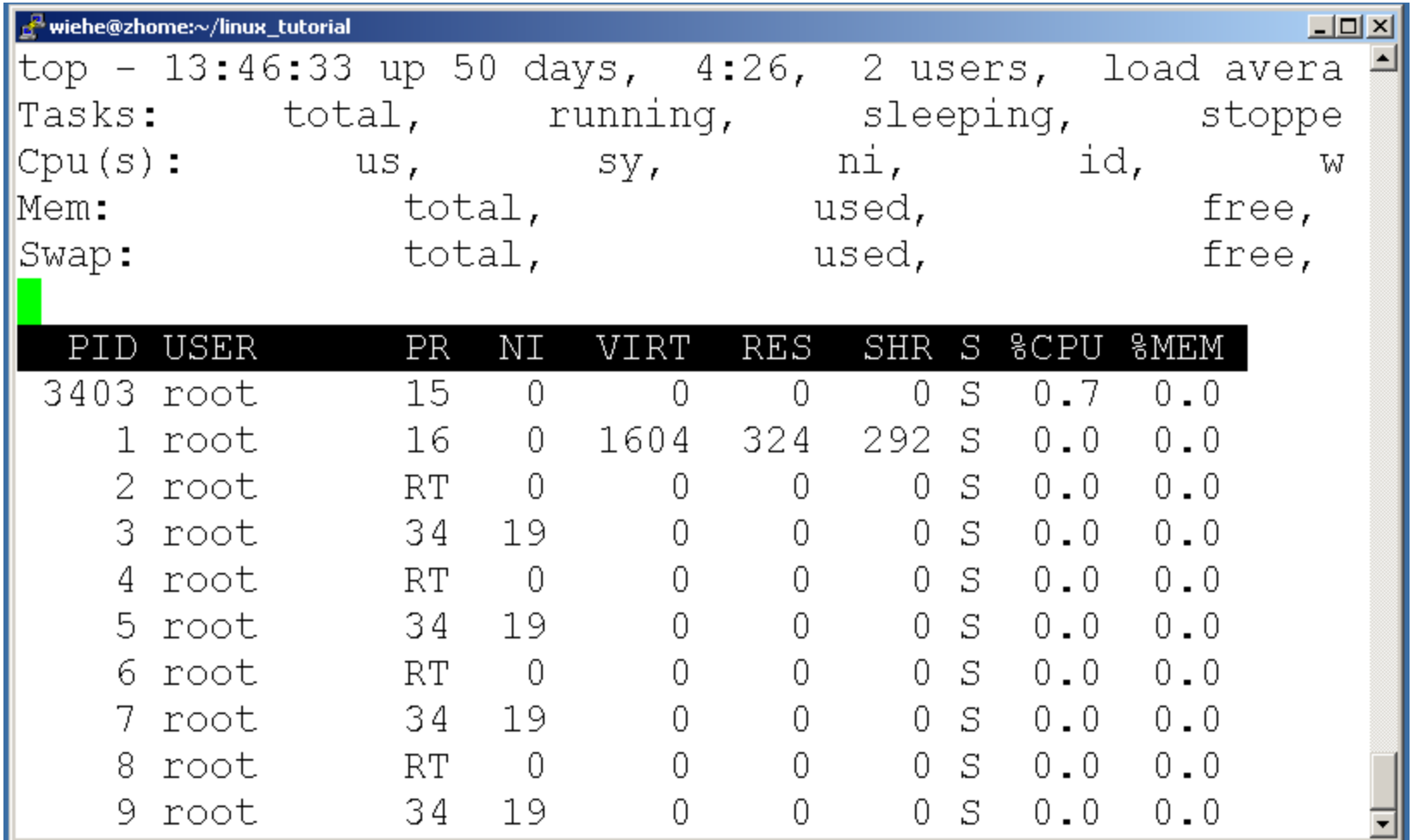
Command: ps

To view the processes that you're running:



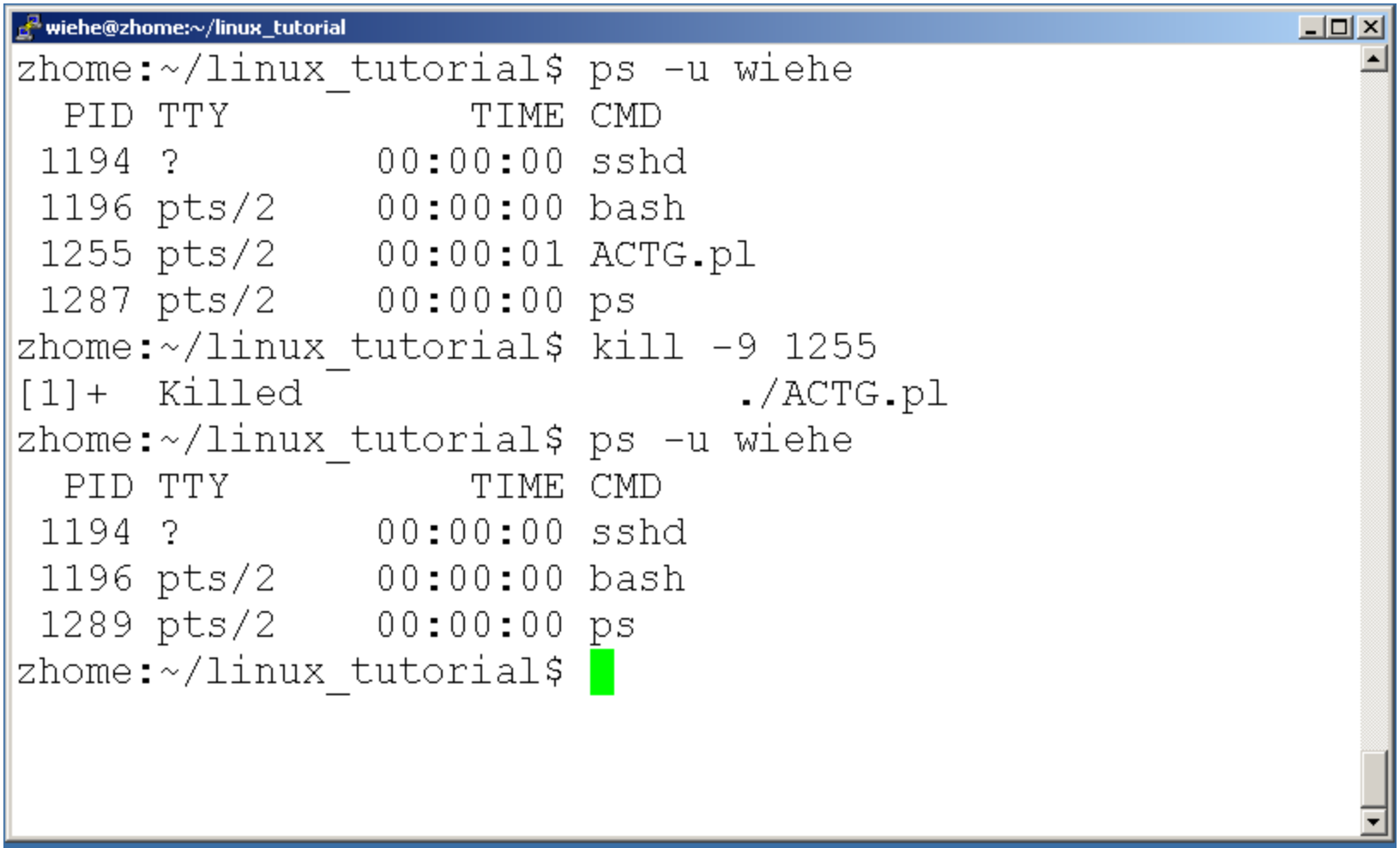
Command: top

To view the CPU usage of all processes:



Command: kill

To terminate a process use “kill”



Input/Output Redirection ("piping")

Programs can output to other programs

Called "piping"

"program_a | program_b"

- program_a's output becomes program_b's input

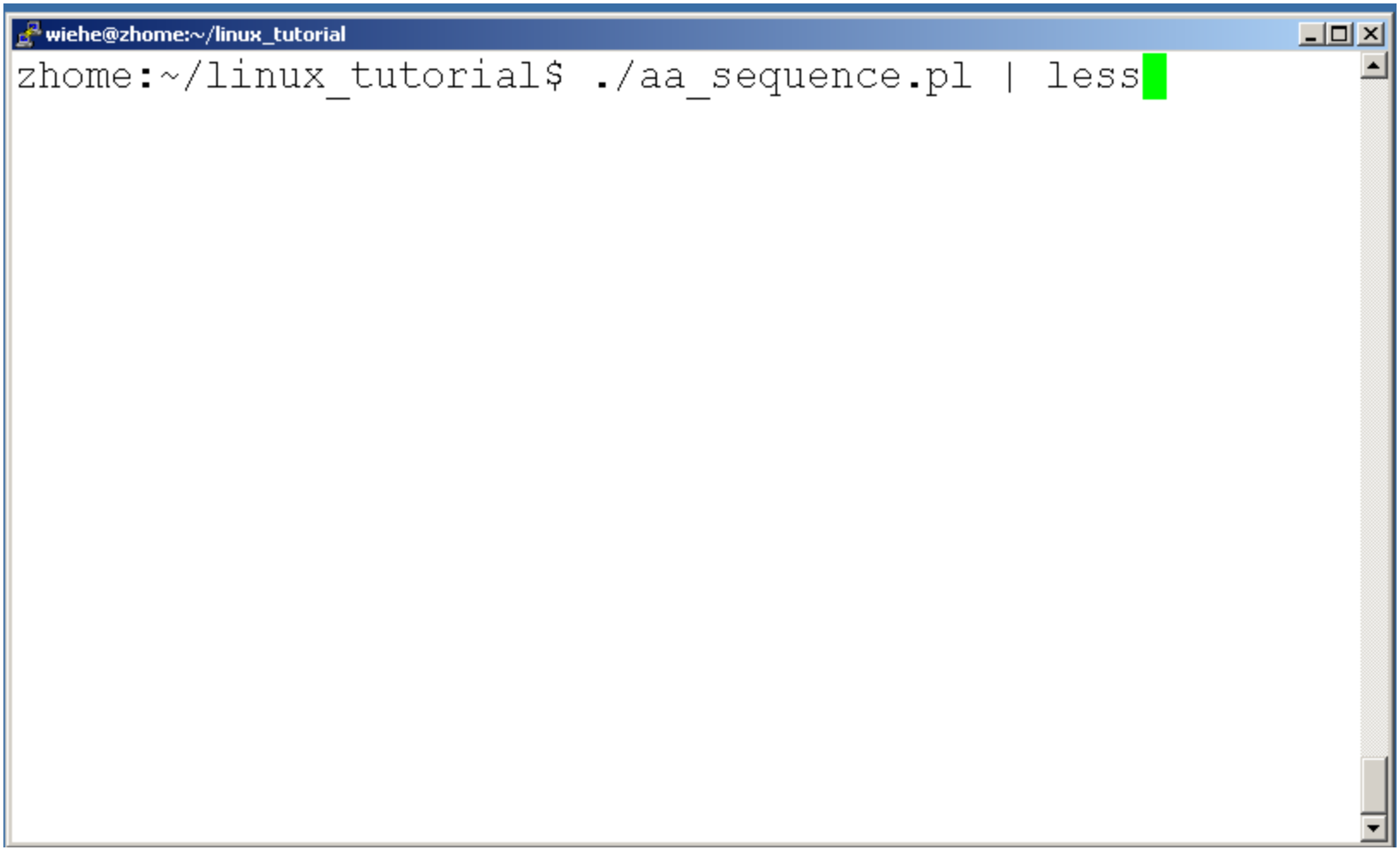
"program_a > file.txt"

- program_a's output is written to a file called "file.txt"

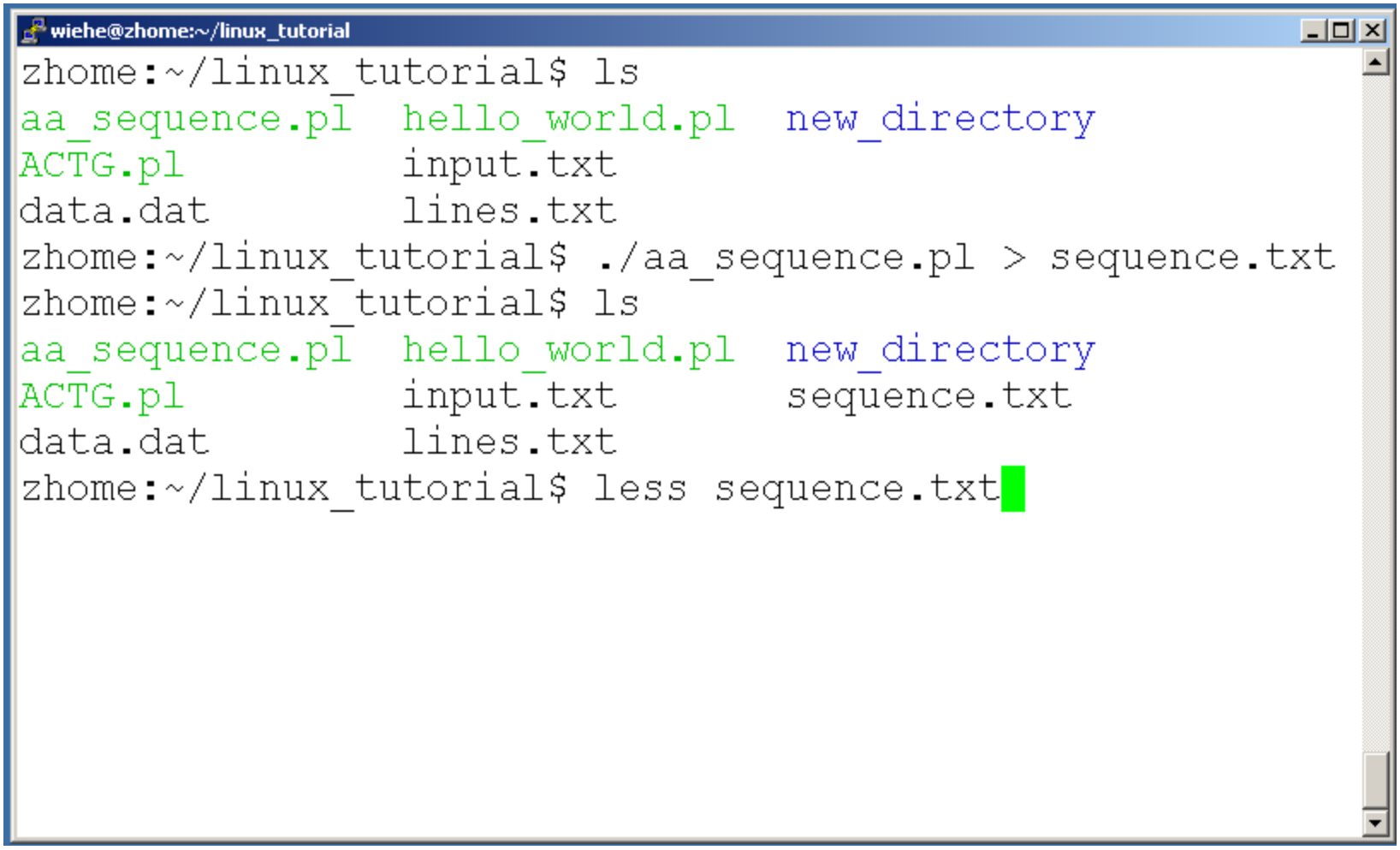
"program_a < input.txt"

- program_a gets its input from a file called "input.txt"

A few examples of piping



A few examples of piping

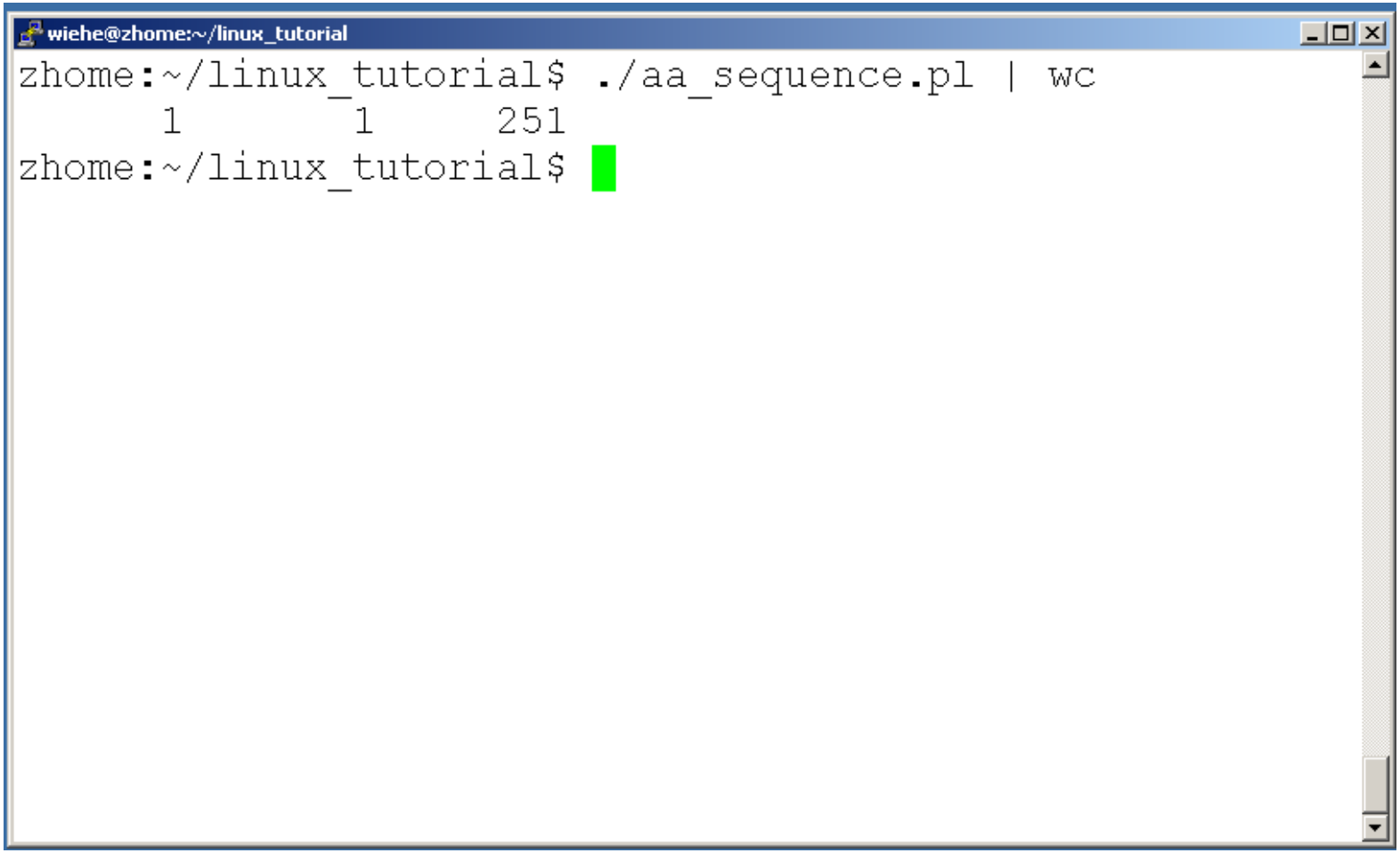


Command : wc

To count the characters, words, and lines in a file use “wc”

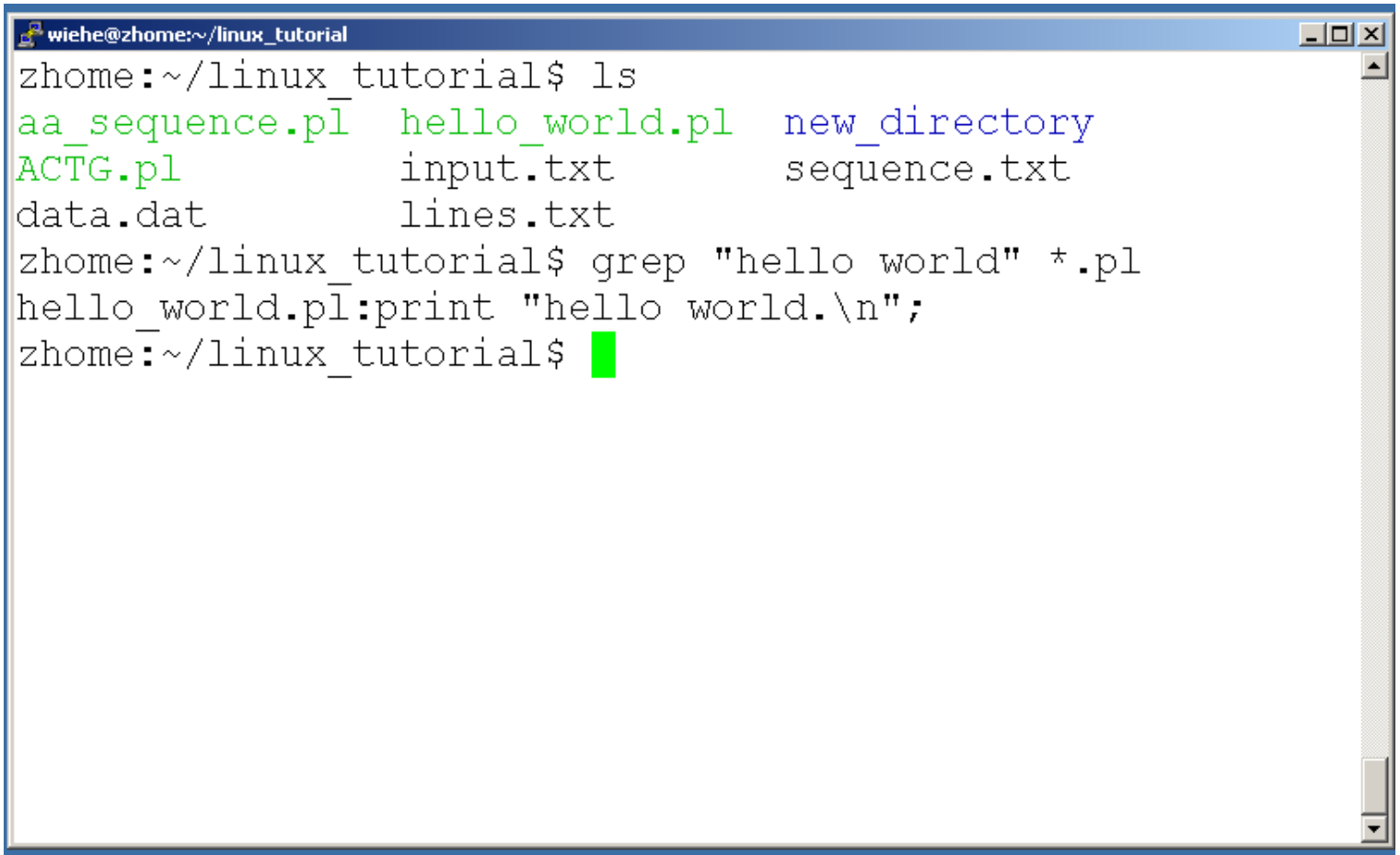
The first column in the output is lines, the second is words, and the last is characters

A few examples of piping



Command: grep

- To search files in a directory for a specific string use “grep”



- To compare to files for differences use “diff”
  - Try: diff /dev/null hello.txt
  - /dev/null is a special address -- it is always empty, and anything moved there is deleted

Command: diff