

Electronic Computer Center
Al-Nahrain University
Linux Module
A. Altaher
Lecture 5 & 6



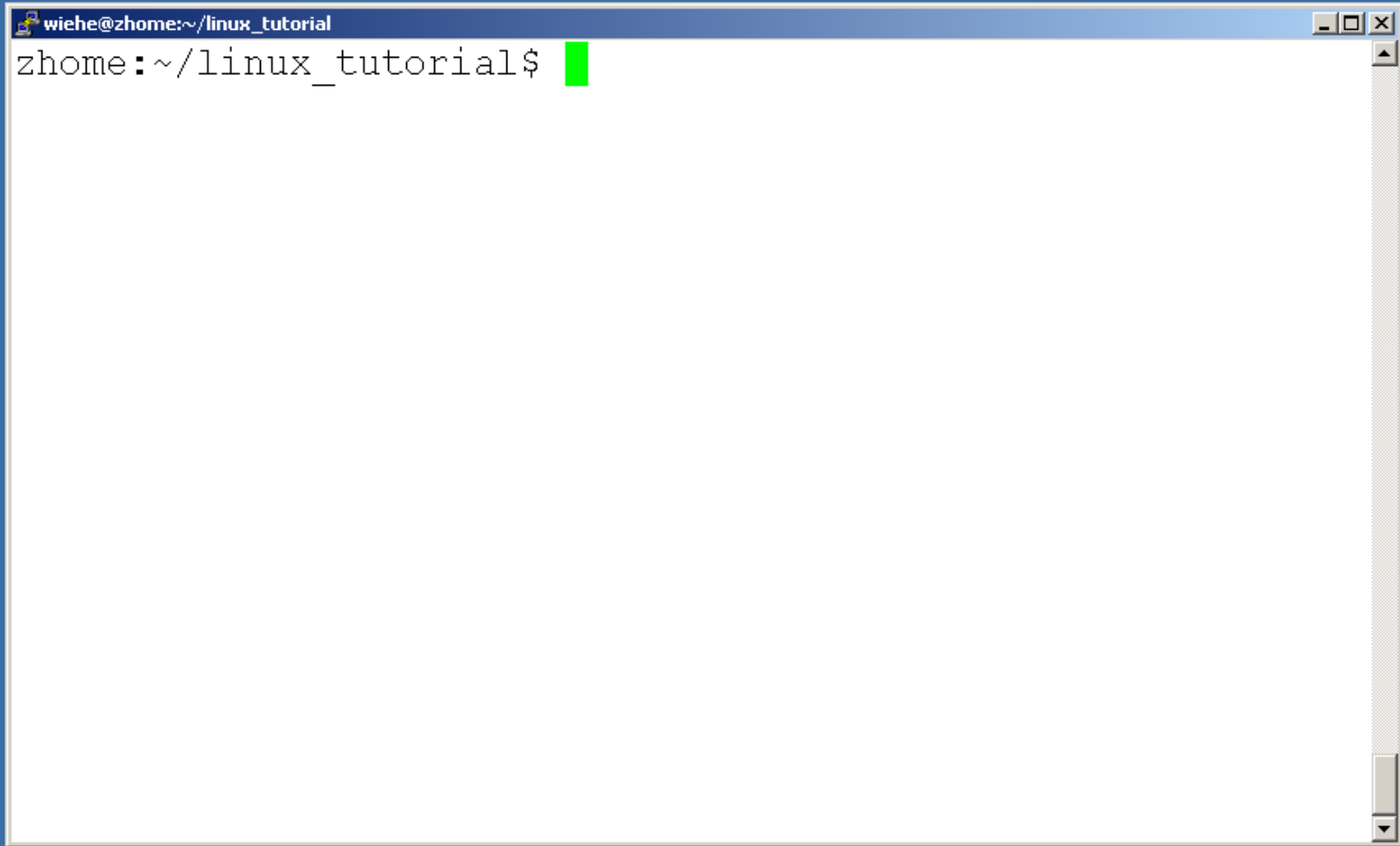
- Command line (Terminal)



Linux Terminal

Open up a terminal:

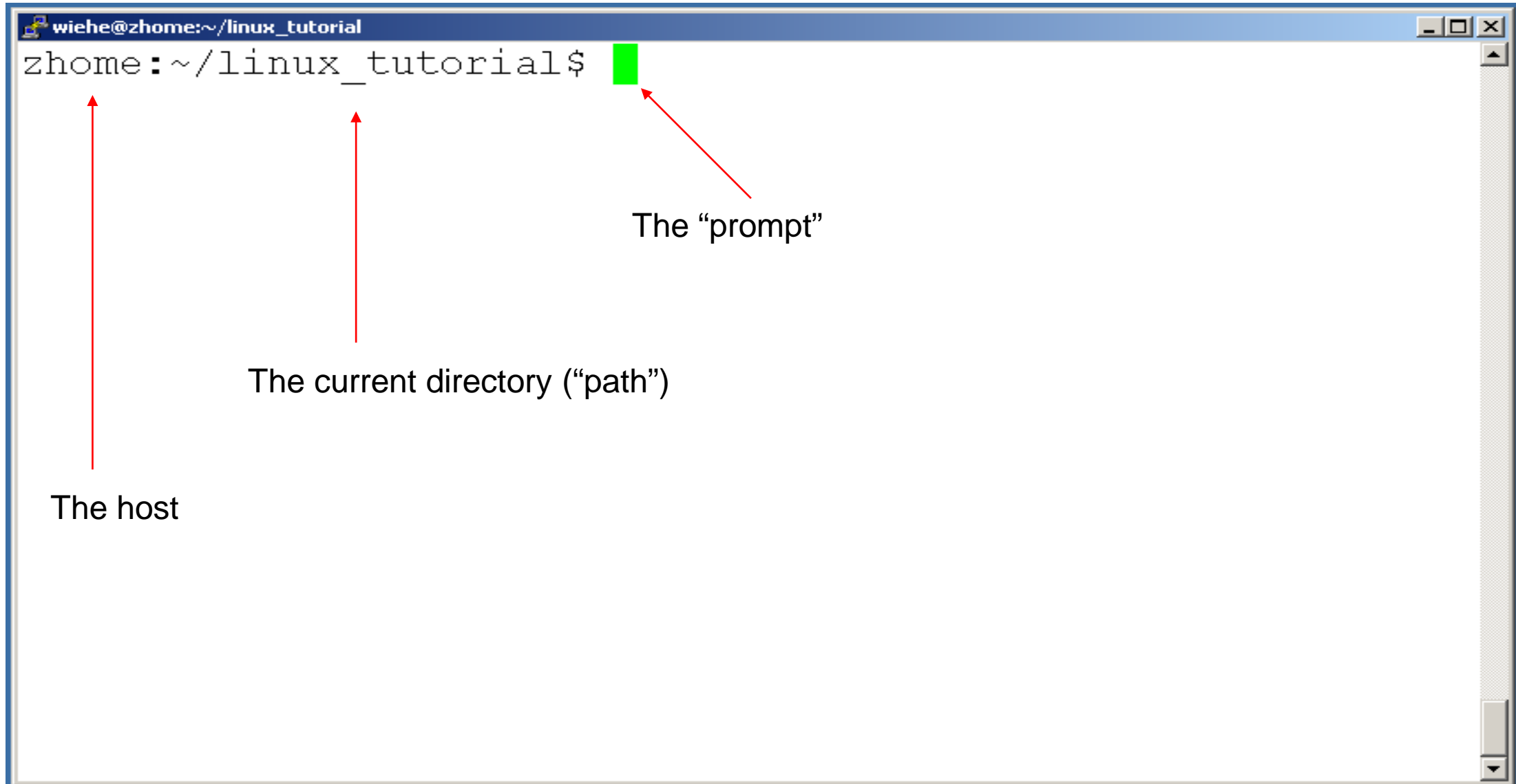
- Ctrl + Alt + T
- Double click selection



```
wiehe@zhome:~/linux_tutorial
zhome:~/linux_tutorial$
```



Linux Terminal Info

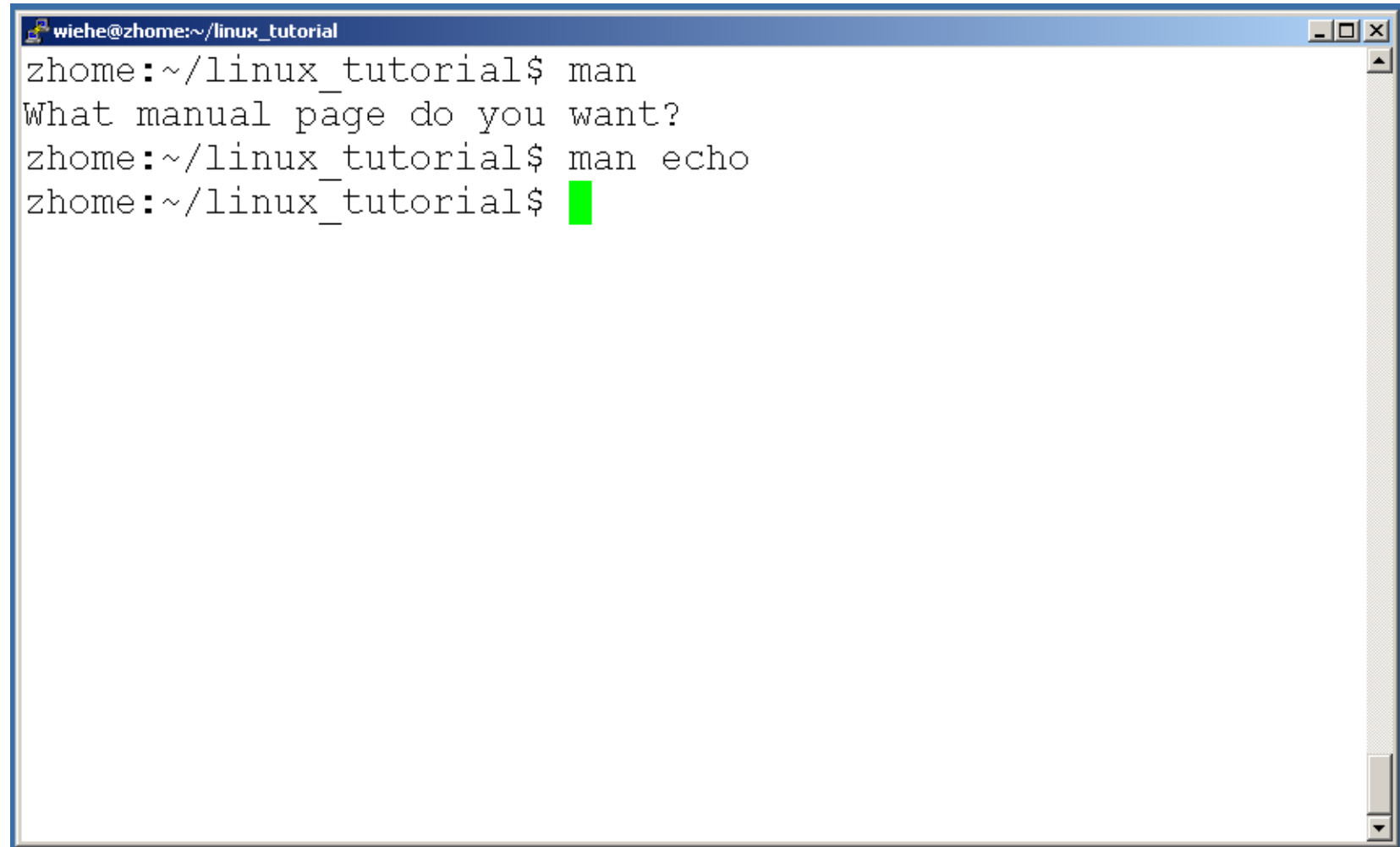


- After logging in, Linux/Unix starts another program called the **shell**
- The shell interprets commands the user types and manages their execution
 - The shell communicates with the internal part of the operating system called the **kernel**
 - The most popular shells are: tcsh, csh, korn, and bash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



Linux man

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

A screenshot of a Linux terminal window. The window title is "wiehe@zhome:~/linux_tutorial". The terminal shows the following interaction: the user enters "man", the prompt changes to "What manual page do you want?", the user enters "man echo", and the prompt returns to "zhome:~/linux_tutorial\$". A green cursor is visible at the end of the last line.

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



Man example

```
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 shell's 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
```



echo example

```
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$ █
```

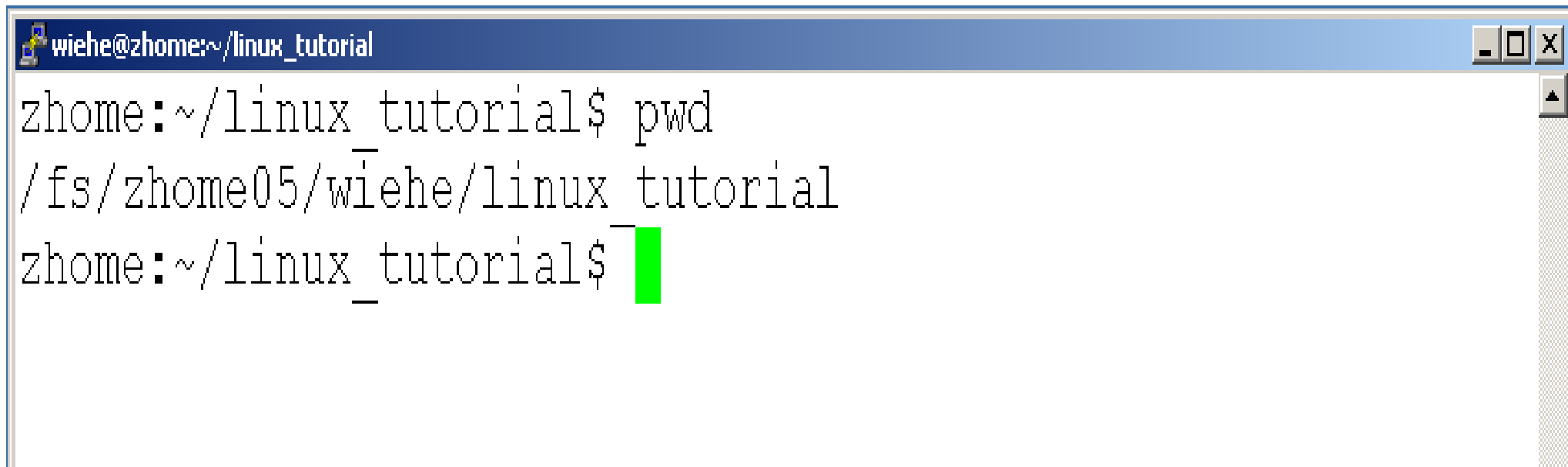


Linux Terminal Commands

- **pwd (print [current] working directory)**

To find your current path use “pwd”

\$ pwd (Enter) output /usr/bin



```
wiehe@zhome:~/linux_tutorial
zhome:~/linux_tutorial$ pwd
/fs/zhome05/wiehe/linux_tutorial
zhome:~/linux_tutorial$
```

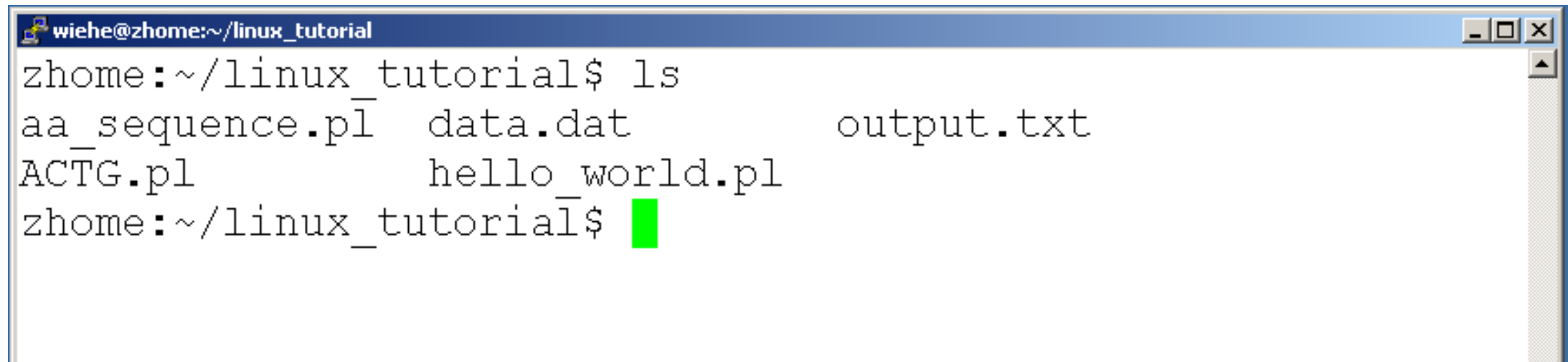
Linux Terminal Commands

- **ls (list directory)**

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

\$ ls (Enter) out put

bin dev home mnt share usr var boot etc lib proc sbin tmp vol



```
wiehe@zhome:~/linux_tutorial
zhome:~/linux_tutorial$ ls
aa_sequence.pl  data.dat          output.txt
ACTG.pl        hello_world.pl
zhome:~/linux_tutorial$
```



ls has many options

- -a (all)
- -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” , “ls -al”



Linux Terminal Commands

Filetype and permissions	Number of enclosed files	Owner	Group	Size (K)	Modification date and time	File name
drwxr-xr-x	31	andrea	andrea	4096	2013-01-18 08:38	..
drwxr-xr-x	3	root	root	4096	2010-10-31 20:06	..
-rw-----	1	andrea	andrea	3695	2013-01-19 13:01	.bash_history
-rw-r--r--	1	andrea	andrea	220	2010-10-31 20:06	.bash_logout
-rw-r--r--	1	andrea	andrea	3103	2010-10-31 20:06	.bashrc
drwx-----	5	andrea	andrea	4096	2013-01-18 08:38	.cache
drwxr-xr-x	12	andrea	andrea	4096	2011-05-03 17:01	.config
drwx-----	3	andrea	andrea	4096	2010-10-31 20:10	.dbus
drwxr-xr-x	6	andrea	andrea	4096	2011-03-23 06:23	Desktop

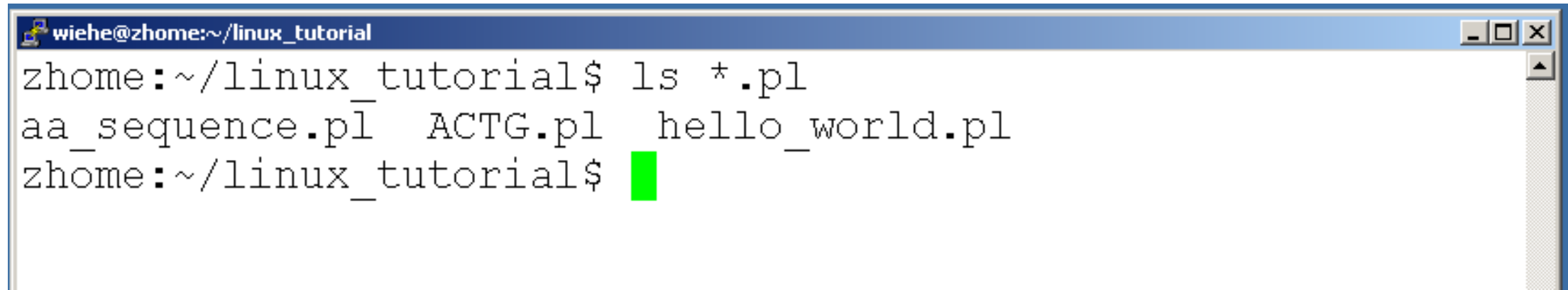
```
wiehe@zhome:~/linux_tutorial
zhome:~/linux_tutorial$ ls -ltr
total 20
-rw-rw-r-- 1 wiehe wiehe 92 Aug 30 11:54 ACTG.pl
-rw-rw-r-- 1 wiehe wiehe 169 Aug 30 12:20 aa_sequence.pl
-rw-rw-r-- 1 wiehe wiehe 42 Aug 30 12:22 hello_world.pl
-rw-rw-r-- 1 wiehe wiehe 24 Aug 30 12:23 output.txt
-rw-rw-r-- 1 wiehe wiehe 21 Aug 30 12:23 data.dat
zhome:~/linux_tutorial$
```



Linux Terminal Commands

General Syntax: *

“*” can be used as a wildcard in unix/linux



```
wiehe@zhome:~/linux_tutorial
zhome:~/linux_tutorial$ ls *.pl
aa_sequence.pl  ACTG.pl  hello_world.pl
zhome:~/linux_tutorial$
```



- **cd (change [current working] directory)**

To change to a specific directory use “cd”

```
$ cd path
```

```
$ cd ../../ (Enter) Output root
```

```
$ cd .. (Enter) Output one step backward (Parent directory)
```

```
$ cd (Enter) Output home directory
```

Or the path to a particular distention

(the current home dir /directory name

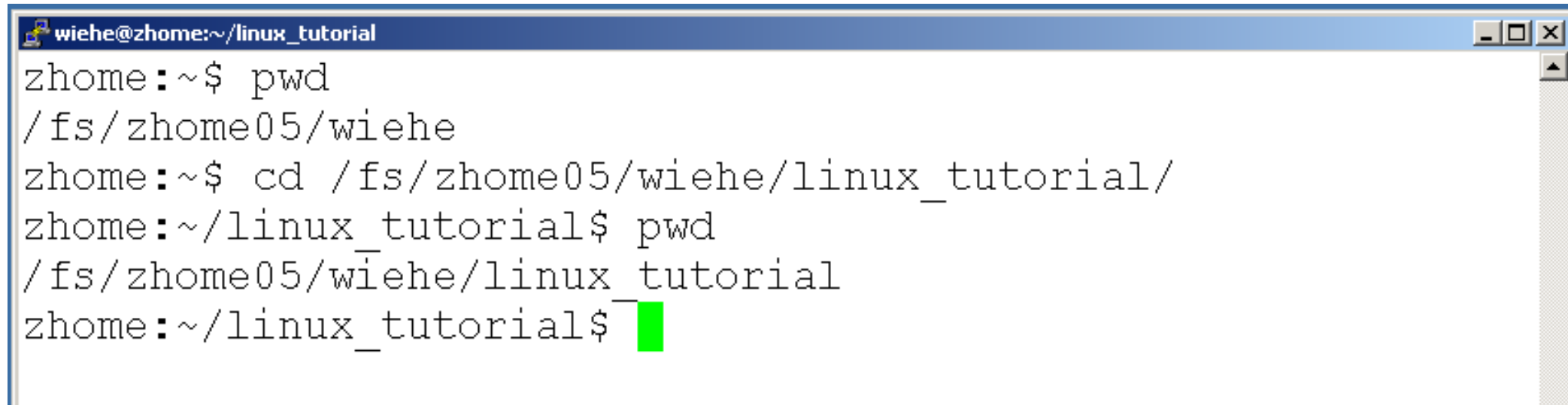
/directory name from root ../user or specific directory/.....



Linux Terminal Commands

- **cd (change [current working] directory)**

To change to a specific directory use “cd”

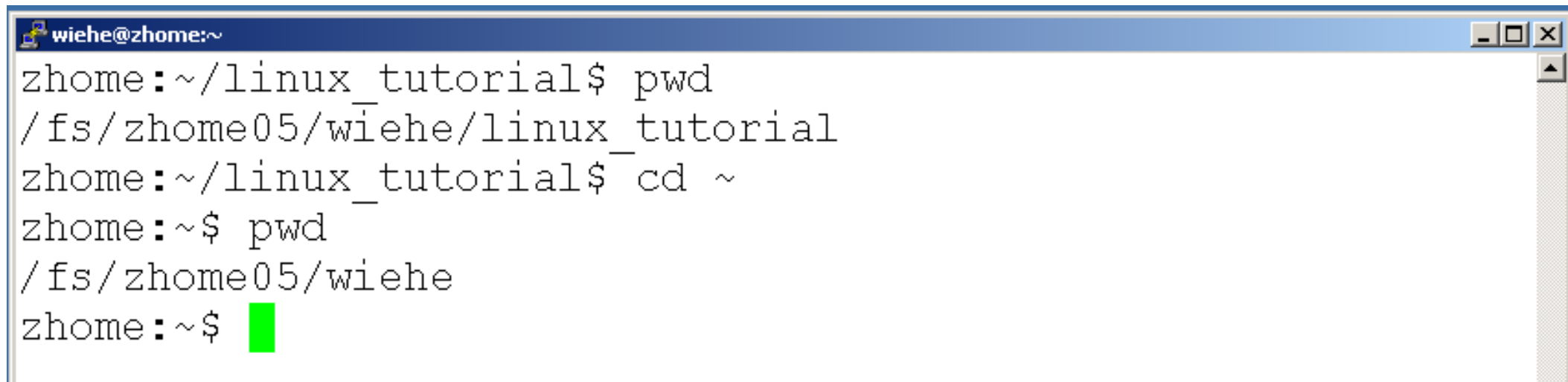


```
wiehe@zhome:~/linux_tutorial
zhome:~$ pwd
/fs/zhome05/wiehe
zhome:~$ cd /fs/zhome05/wiehe/linux_tutorial/
zhome:~/linux_tutorial$ pwd
/fs/zhome05/wiehe/linux_tutorial
zhome:~/linux_tutorial$ █
```



Linux Terminal Commands

- **cd (change [current working] directory)**
 - “~” is the location of your home directory”

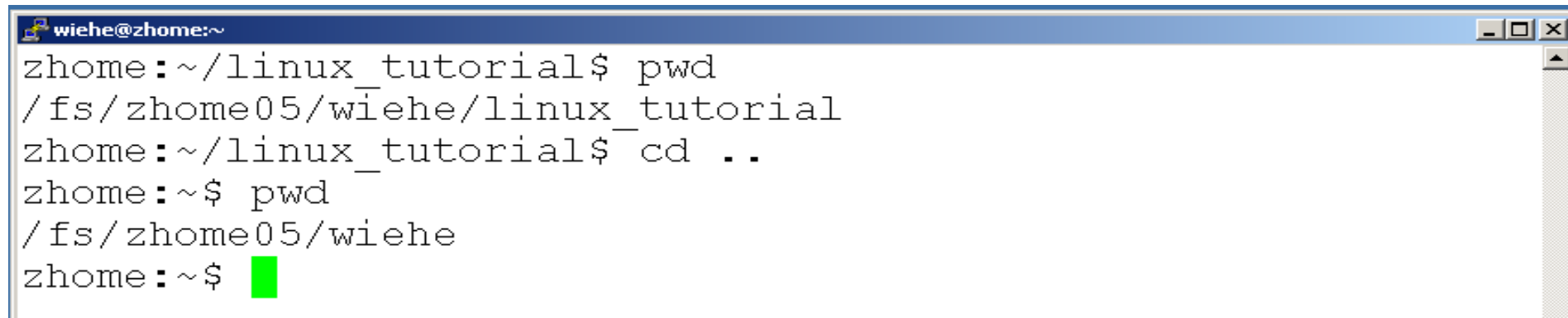


```
wiehe@zhome:~  
zhome:~/linux_tutorial$ pwd  
/fs/zhome05/wiehe/linux_tutorial  
zhome:~/linux_tutorial$ cd ~  
zhome:~$ pwd  
/fs/zhome05/wiehe  
zhome:~$ █
```



Linux Terminal Commands

- **cd (change [current working] directory)**
 - “..” is the location of the directory below current one



```
wiehe@zhome:~  
zhome:~/linux_tutorial$ pwd  
/fs/zhome05/wiehe/linux_tutorial  
zhome:~/linux_tutorial$ cd ..  
zhome:~$ pwd  
/fs/zhome05/wiehe  
zhome:~$ █
```

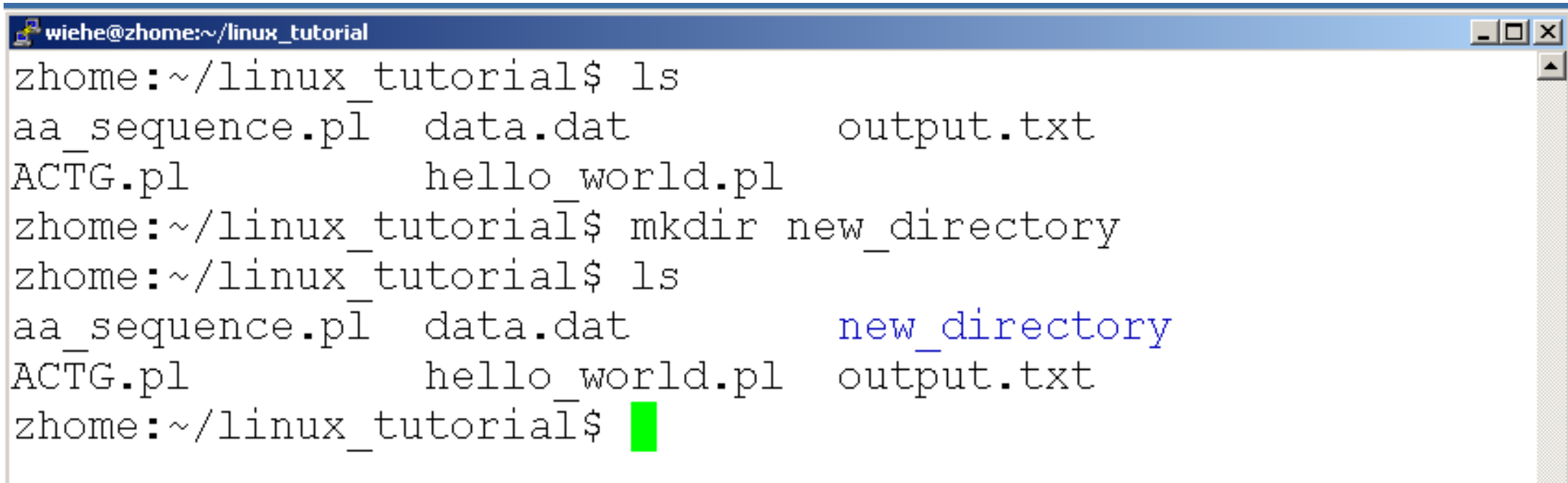


Linux Terminal Commands

- **mkdir (make directory)**

To create a new directory use “mkdir”

\$ mkdir OS2016/17 output (OS2016/17 Subdirectory in current directory)



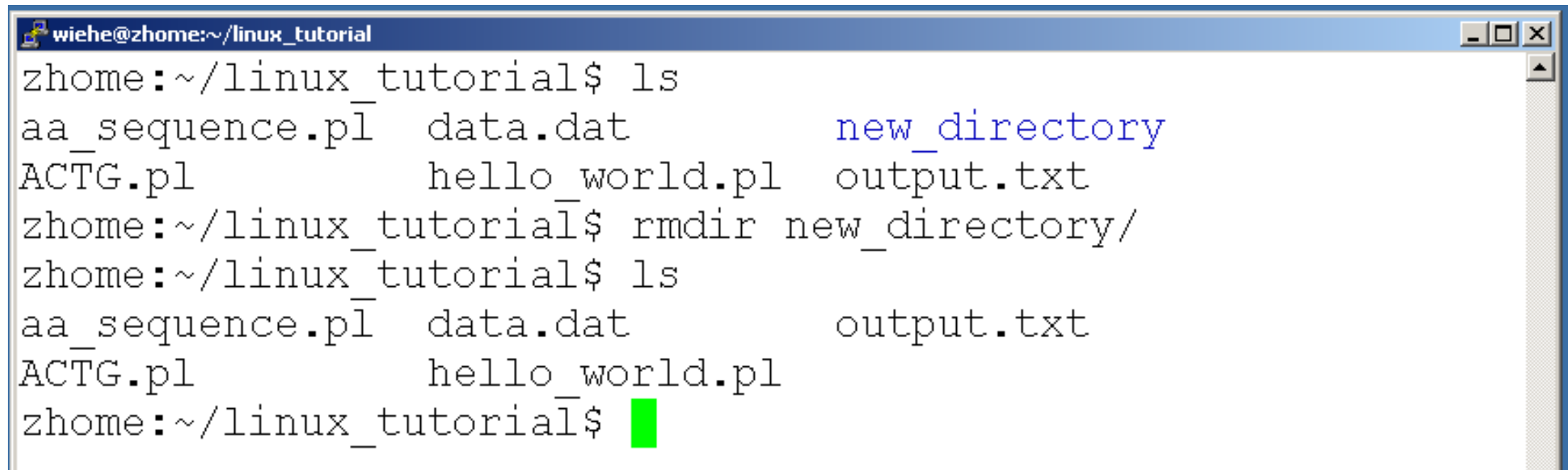
```
wiehe@zhome:~/linux_tutorial
zhome:~/linux_tutorial$ ls
aa_sequence.pl  data.dat          output.txt
ACTG.pl         hello_world.pl
zhome:~/linux_tutorial$ mkdir new_directory
zhome:~/linux_tutorial$ ls
aa_sequence.pl  data.dat          new_directory
ACTG.pl         hello_world.pl   output.txt
zhome:~/linux_tutorial$ █
```



- **rmdir (remove directory)**

To remove an empty directory use “rmdir”

\$ rmdir OS2016/17 output (Removes Subdirectory OS2016/17 in current directory)



```
wiehe@zhome:~/linux_tutorial
zhome:~/linux_tutorial$ ls
aa_sequence.pl  data.dat          new_directory
ACTG.pl        hello_world.pl   output.txt
zhome:~/linux_tutorial$ rmdir new_directory/
zhome:~/linux_tutorial$ ls
aa_sequence.pl  data.dat          output.txt
ACTG.pl        hello_world.pl
zhome:~/linux_tutorial$ █
```



Creating files in Unix/Linux

Various Editors:

- 1) gedit
- 2) nano / pico
- 3) vi
- 4) emacs



Editing a file using pico or nano

Type “pico” or “nano” at the prompt



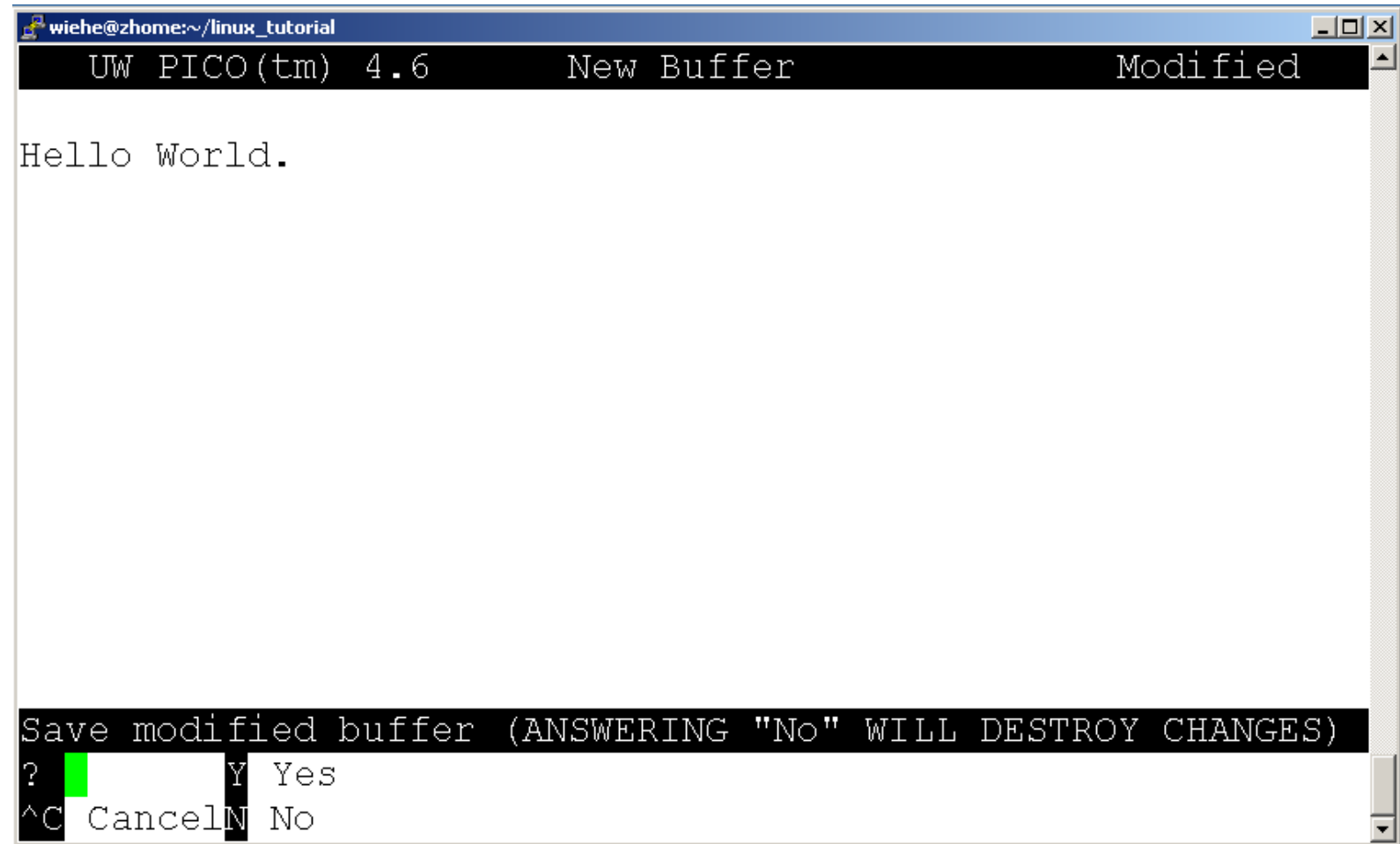
The screenshot shows a terminal window titled "wiehe@zhome:~/linux_tutorial". The terminal displays the PICO editor interface. At the top, it shows "UW PICO(tm) 4.6" and "New Buffer". A green cursor is visible on the left side of the screen. At the bottom, there is a help menu with the following text:

```
^G Get He^O WriteO^R Read F^Y Prev P^K Cut Te^C Cur Po
^X Exit ^J Justif^W Where ^V Next P^U UnCut ^T To Spe
```



Editing a file using pico or nano

To save use “ctrl-x”



```
wiehe@zhome:~/linux_tutorial
UW PICO(tm) 4.6      New Buffer      Modified
Hello World.

Save modified buffer (ANSWERING "No" WILL DESTROY CHANGES)
?  Y Yes
^C  Cancel  N No
```



Youtube

https://www.youtube.com/watch?v=9t_gJWC32zk

Linux Handout & Tutorial

<http://www.guru99.com/unix-linux-tutorial.html>

William Knottenbelt Imperial college London 2001

<http://www.doc.ic.ac.uk/~wjk/UnixIntro/index.html>

WORLD OF ASIC 2014

<http://www.asic-world.com/scripting/unix3.html>



<http://www.ee.surrey.ac.uk/Teaching/Unix/>

<http://www.ugu.com/sui/ugu/show?help.beginners>

<http://en.wikipedia.org/wiki/Unix>

