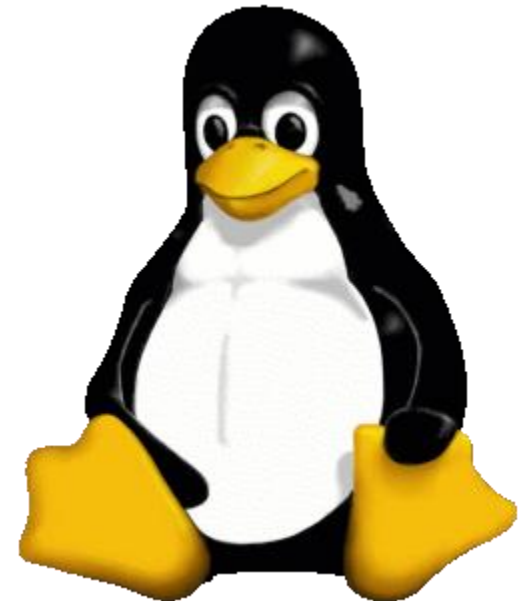


Lesson 8

By Dr. Amir

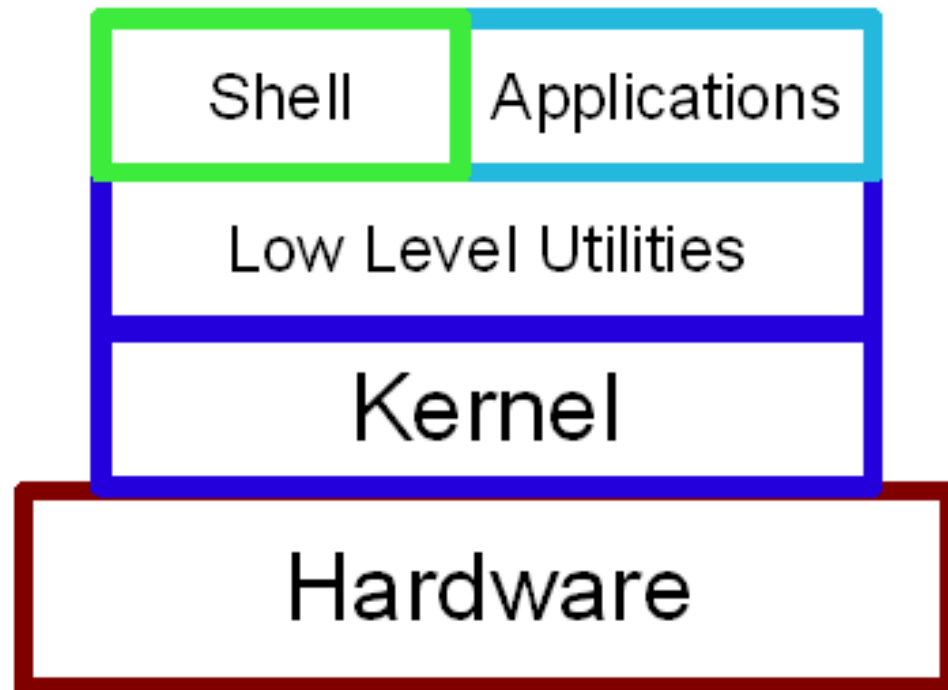
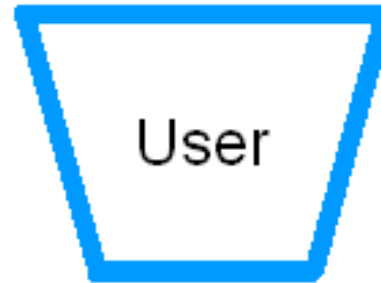
GNU/Linux

Linux shells
& Editors



Linux Shell

The shell is the command prompt within Linux where you can type commands. If you have logged into a machine over a network (using ssh or telnet) then you will be in a shell.



Different shells

In the same way that different variants of UNIX were developed there are also different variants of the shell.

The shell is more than just a way of typing commands. It can be used to stop, start, suspend programs and by writing script files it becomes a programming language in itself.

Common Unix shells

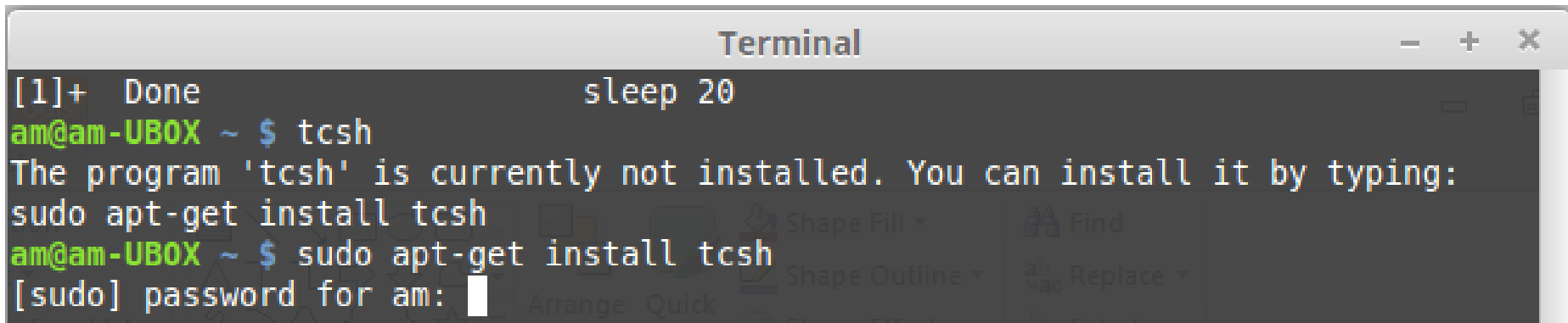
Name of shell	Command name	Description
Bourne shell	sh	The most basic shell available on all UNIX systems
Korn Shell	ksh / pdksh	Based on the Bourne shell with enhancements
C Shell	csch	Similar to the C programming language in syntax
Bash Shell	bash	Bourne Again Shell combines the advantages of the Korn Shell and the C Shell. The default on most Linux distributions.
tcsh	tcsh	Similar to the C Shell

\$ - Bourne, Korn and Bash Shells

% - C Shell

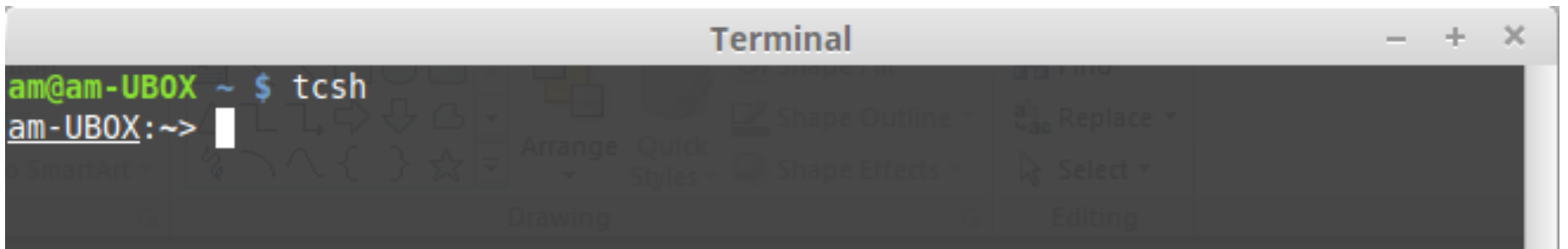
Switching to another shell

Type the name of the shell



```
Terminal
[1]+  Done                  sleep 20
am@am-UBOX ~ $ tcsh
The program 'tcsh' is currently not installed. You can install it by typing:
sudo apt-get install tcsh
am@am-UBOX ~ $ sudo apt-get install tcsh
[sudo] password for am: 
```

A terminal window titled "Terminal" with standard window controls. The output shows a previous command "sleep 20" completed. The user enters "tcsh" at the prompt "am@am-UBOX ~ \$". A message states that "tcsh" is not installed and provides the command "sudo apt-get install tcsh". The user enters this command, and the prompt changes to "[sudo] password for am:" with a cursor for input.



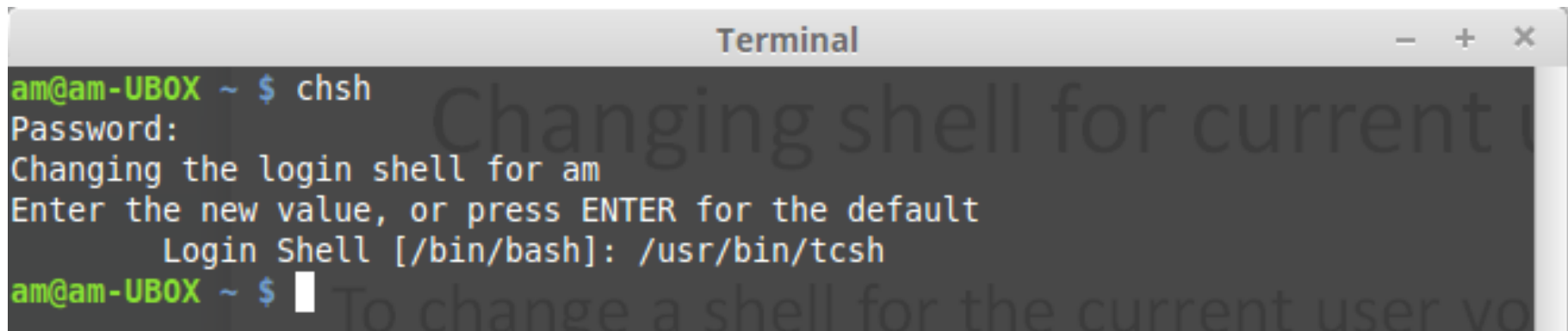
```
Terminal
am@am-UBOX ~ $ tcsh
am-UBOX:~> 
```

A terminal window titled "Terminal" with standard window controls. The prompt is "am@am-UBOX ~ \$". The user enters "tcsh". The prompt changes to "am-UBOX:~>" with a cursor, indicating a successful switch to the tcsh shell.

chsh

To change a shell for the current user you must know the address for that shell.

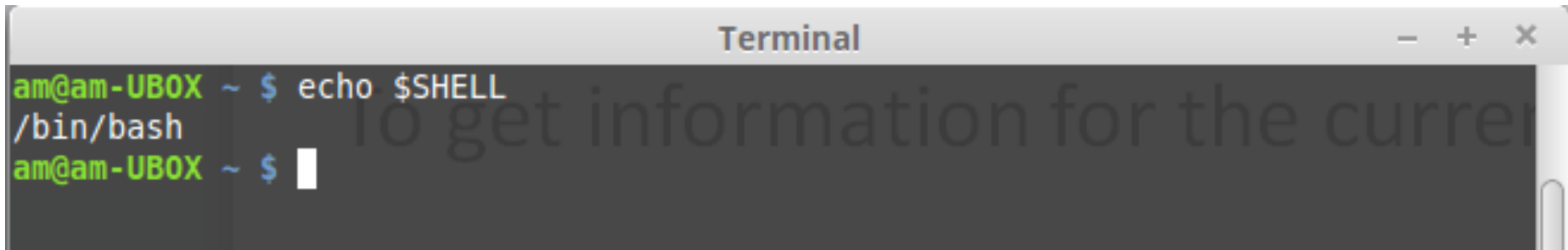
Note: the change will take effect after the next log-in.



```
Terminal
am@am-UBOX ~ $ chsh
Password:
Changing the login shell for am
Enter the new value, or press ENTER for the default
  Login Shell [/bin/bash]: /usr/bin/tcsh
am@am-UBOX ~ $
```

Echo \$SHELL

To get information for the current shell

A screenshot of a terminal window titled "Terminal". The window has a standard macOS-style title bar with minimize, maximize, and close buttons. The terminal content shows a user prompt "am@am-UBOX ~" followed by a blue dollar sign prompt "\$" and the command "echo \$SHELL". The output of the command is "/bin/bash", displayed on the next line. Below the output, the prompt "\$" is shown again with a white cursor block.

```
am@am-UBOX ~ $ echo $SHELL
/bin/bash
am@am-UBOX ~ $
```

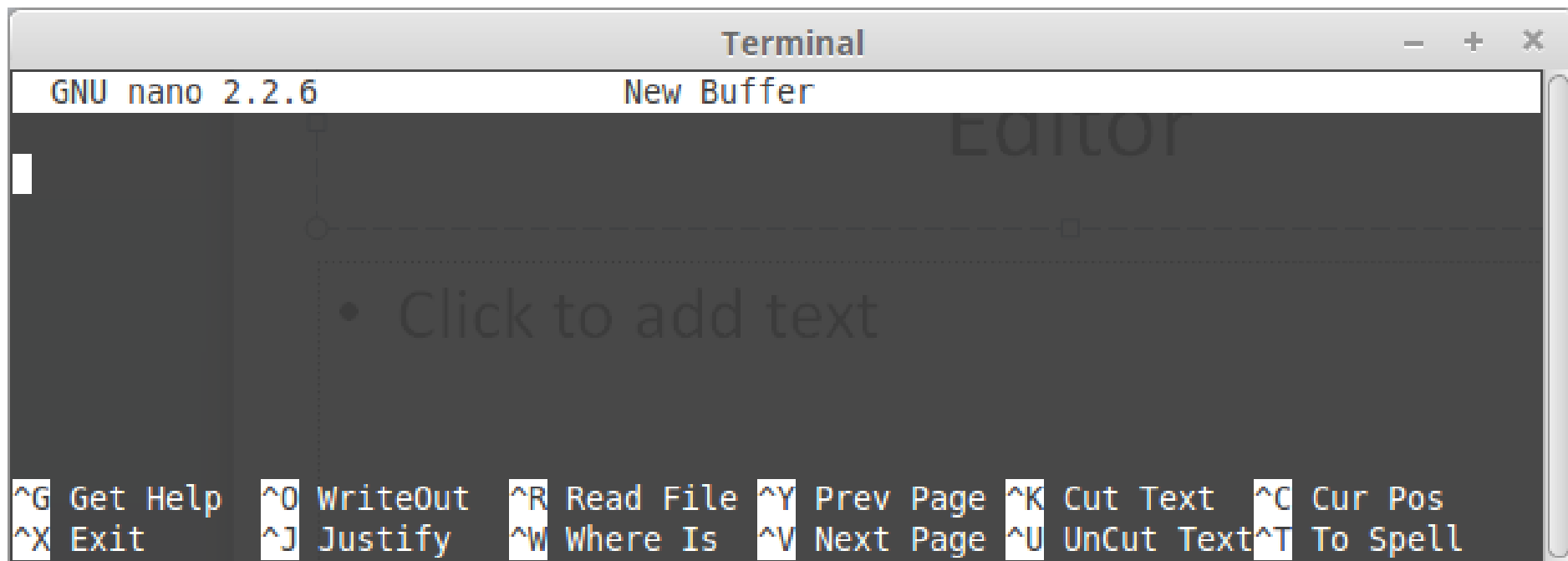

Apt-get install

To install a new program

Apt-get purge

To remove a program completely

nano



The image shows a terminal window titled "Terminal" with standard window controls (minimize, maximize, close). Inside the terminal, the GNU nano 2.2.6 editor is running. The status bar at the top of the editor shows "GNU nano 2.2.6" on the left and "New Buffer" on the right. The main editing area is dark gray with a light gray vertical line on the left for the cursor. A large, faint "EDITOR" watermark is visible in the background. A dashed horizontal line is present, and below it, a dotted rectangle contains the text "Click to add text" with a bullet point. At the bottom, a status bar displays various keyboard shortcuts in two rows: ^G Get Help, ^O WriteOut, ^R Read File, ^Y Prev Page, ^K Cut Text, ^C Cur Pos, ^X Exit, ^J Justify, ^W Where Is, ^V Next Page, ^U UnCut Text, and ^T To Spell.

```
GNU nano 2.2.6 New Buffer
```

EDITOR

Click to add text

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell

Vi(m)

The vi editor is installed on almost every Unix. Linux will very often install vim (vi improved) which is similar. Every system administrator should know vi(m), because it is an easy tool to solve problems.

Command mode and Insert mode

key	action
Esc	set vi(m) in command mode.

a A i l o O

command	action
a	start typing after the current character
A	start typing at the end of the current line
i	start typing before the current character
I	start typing at the start of the current line
o	start typing on a new line after the current line
O	start typing on a new line before the current line

r x X

command	action
x	delete the character below the cursor
X	delete the character before the cursor
r	replace the character below the cursor
p	paste after the cursor (here the last deleted character)
xp	switch two characters