

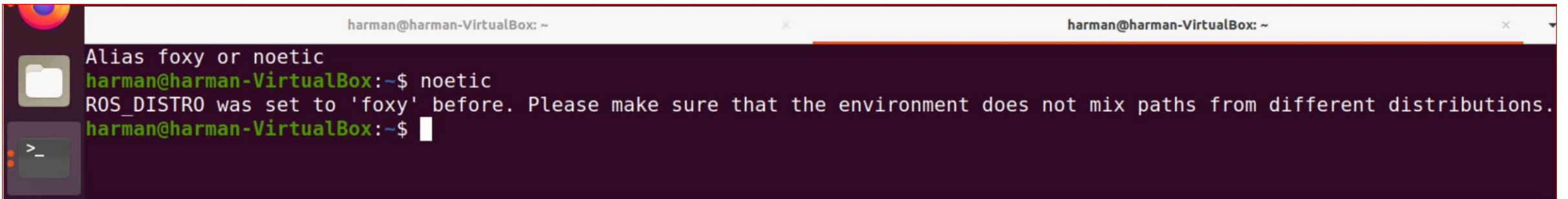
Let's Explore Commands

Why All Developers Should Learn Command Line

Perhaps the most obvious reason to learn the command line is for its original function: **greater control**. There are commands accessible only via shell that can **control very complex operations** on Unix/Linux and Windows machines.

<https://www.hongkiat.com/blog/developers-command-line/#:~:text=You%20Gain%20Greater%20Control%20over,Unix%2FLinux%20and%20Windows%20machines>

CLI stands for Command Line Input/Interface/Interpreter. Earlier it was the only way to interact with computers using computer terminals. It requires fewer resources and is concise and powerful.

A terminal window with a dark purple background and a white title bar. The title bar contains two tabs, both labeled "harman@harman-VirtualBox: ~". The terminal content shows a user prompt "harman@harman-VirtualBox:~\$" followed by the command "noetic". The output is "ROS_DISTRO was set to 'foxy' before. Please make sure that the environment does not mix paths from different distributions." followed by another prompt "harman@harman-VirtualBox:~\$".

```
harman@harman-VirtualBox: ~
Alias foxy or noetic
harman@harman-VirtualBox:~$ noetic
ROS_DISTRO was set to 'foxy' before. Please make sure that the environment does not mix paths from different distributions.
harman@harman-VirtualBox:~$
```

The 50 Most Popular Linux & Terminal Commands - Full Course for Beginners

1,296,941 views 5:00:16

<https://www.youtube.com/watch?v=ZtqBQ68cfJc>

The 50 Most Popular Linux & Terminal Commands - Full Course for Beginners

whoami	rmdir	tail	uniq	ps	sleep	ln
man	rm	date	diff	top	gzip	who
clear	touch	cat	find	kill	gunzip	su
pwd	open	less	grep	killall	tar	sudo
ls	mv	echo	du	jobs	nano	passwd
cd	cp	wc	df	fg	alias	chown
mkdir	head	sort	history	bg	xargs	chmod

1:34 / 5:00:16 • Introduction >

SUBSCRIBE

Beginner's Guide to the Bash Terminal

2,050,706 views Joe Collins 1:14:36

<https://www.youtube.com/watch?v=oxuRxtrO2Ag>

BEGINNER'S GUIDE TO THE BASH TERMINAL NAVIGATION

ls - list directory contents

pwd - print name of current/working directory

cd - change working directory cd .. cd ~

file - determine file type

locate - find files by name

which - locate a command

history - display bash command history

harman@harman-VirtualBox:~\$ **noetic**

ROS_DISTRO was set to 'foxy' before. Please make sure that the environment does not mix paths from different distributions.

harman@harman-VirtualBox:~\$ **man ls** (Display the “manual” 241 Lines of Description)

LS(1) User Commands LS(1)

NAME

ls - list directory contents (List Storage)

SYNOPSIS

ls [OPTION]... [FILE]...

DESCRIPTION

List information about the FILES (the current directory by default). Sort entries alphabetically if none of -cftuvSUX nor --sort is specified

-a, --all

do not ignore entries starting with . (Hidden) \$ ls -l

-l use a long listing format \$ ls -l or \$ ls -la

q to QUIT

Still Not Sure? Ask for Help -- help

```
harman@harman-VirtualBox:~$ ls --help
```

Usage: ls [OPTION]... [FILE]...

List information about the FILEs (the current directory by default).

Sort entries alphabetically if none of -cftuvSUX nor --sort is specified.

Mandatory arguments to long options are mandatory for short options too.

-a, --all do not ignore entries starting with .

-A, --almost-all do not list implied . and ..

--author with -l, print the author of each file

-b, --escape print C-style escapes for nongraphic characters

--block-size=SIZE with -l, scale sizes by SIZE when printing them;
e.g., '--block-size=M'; see SIZE format below

·
'
'
'
'

GET TO THE ROOT OF THINGS

```
harman@harman-VirtualBox:~$ cd /
```

```
harman@harman-VirtualBox:/$ ls
```

```
bin  dev  lib  libx32  mnt  root  snap  sys  var  
boot  etc  lib32  lost+found  opt  run  srv  tmp  
cdrom  home  lib64  media  proc  sbin  swapfile  usr
```


harman@harman-VirtualBox:~\$ cd ~; ls -la

HOME FOR ME

PROPERTIES OWNER USER SIZE DATE NAME

total 1160

```
drwxr-xr-x 40 harman harman 4096 Sep  9 15:39 .
drwxr-xr-x  3 root  root    4096 Jun 21 2021 ..
-rw-rw-r-- 1 harman harman 104971 Jul 13 2021 '8. Errors and Exceptions — Python 3.7.0a2 documentation.pdf'
-rw-rw-r-- 1 harman harman  700 Jul 13 2021 add_two_ints_2.py
-rw----- 1 harman harman 38018 Sep  9 15:39 .bash_history
-rw-r--r-- 1 harman harman  220 Jun 21 2021 .bash_logout
-rw-r--r-- 1 harman harman  4561 Oct 14 2021 .bashrc
-rw-rw-r-- 1 harman harman 165495 Oct 14 2021 'bash script error source not found - Unix & Linux Stack Exchange.pdf'
drwxrwxr-x  2 harman harman  4096 Jul  6 2021 build
drwx----- 20 harman harman  4096 Oct 23 2021 .cache
drwxrwxr-x  6 harman harman  4096 Sep 28 2021 catkin_ws
```

.....

```
-rwxrwxr-x 1 harman harman  501 Feb 14 2022 Turtlesim_GoStraight_ROS2.py
-rwxrwx--- 1 harman harman  2507 Feb 14 2022 turtlesim_gotogoal_seminar.py
-rw-rw-r-- 1 harman harman  2507 Feb 14 2022 turtlesim_gotogoal_seminarROS2.py
-rw-rw-r-- 1 harman harman   119 Jun 30 2021 turtlesim.yaml
drwxrwxr-x 2 harman harman  4096 Jun 26 2021 ubuntuIntro
```

file - determine file type **file --help**

harman@harman-VirtualBox:~\$ **file turtlesim.yaml**
turtlesim.yaml: ASCII text

harman@harman-VirtualBox:~\$ **file run_add_two_ints**
run_add_two_ints: UTF-8 Unicode text

harman@harman-VirtualBox:~\$ **file ros_robotics_ws**
ros_robotics_ws: directory

I knew that – directories are **BLUE**

- **Green are Executable**

- **turtlesim_gotogoal_seminar.py** Ready to Go

- **turtlesim_gotogoal_seminarROS2.py** (Would be white – not yet made executable.)



locate - find files by name

SYNOPSIS

```
locate [-d path | --database=path] [-e | -E | --[non-  
]existing] [-i |  
--ignore-case] [-0 | --null] [-c | --count] [-w | --wholename]  
[-b |  
--basename] [-l N | --limit=N] [-S | --statistics] [-r | --  
regex ]  
[--regextype R] [--max-database-age D] [-P | -H | --  
nofollow] [-L |  
--follow] [--version] [-A | --all] [-p | --print] [--help]  
pattern...
```

```
harman@harman-VirtualBox:~$ ls *.txt
```

```
history1.txt script1.txt
```

```
harman@harman-VirtualBox:~$ locate *.txt
```

```
/home/harman/history1.txt
```

```
/home/harman/script1.txt
```

If you try `$locate foxy` – Lots of hits!

history - display bash command history

About 1000 Commands

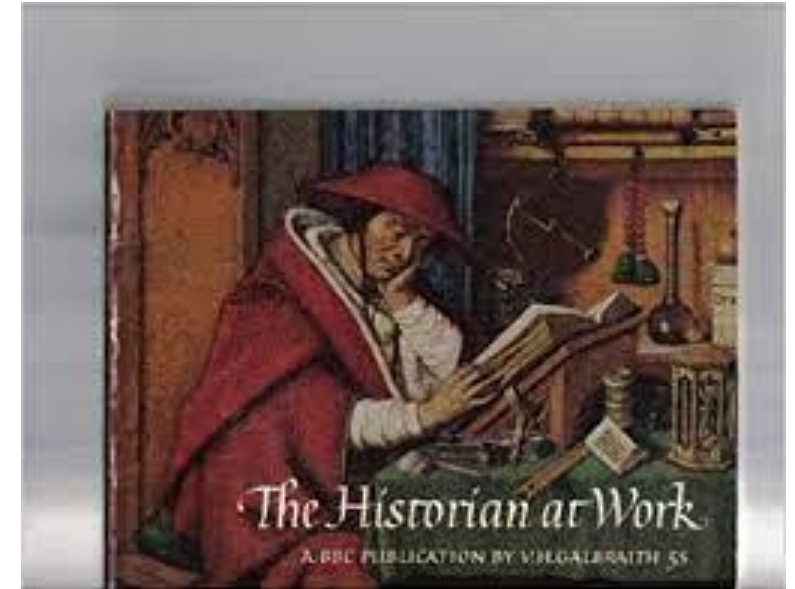
harman@harman-VirtualBox:~\$ **history**

harman@harman-VirtualBox:~\$ **!1998**

ls *.txt

history1.txt script1.txt

```
1982 find ./ -name "ros"
1983 find ./ -name "ros*"
1984 locate foxy
1985 man locate
1986 ls *.txt
1987 locate *.txt
1988 locate foxy
1989 ls *.txt
1990 ls
1991 ls *.txt
1992 locate *.txt
1993 cd /opt
1994 ls *.txt
1995 locate *.txt
1996 ls
1997 cd ~
1998 ls *.txt
1999 locate *.txt
2000 history
```



LET'S SAVE HISTORY AS A FILE - REDIRECTION!

history !**<Number>** Execute
man history !**n** command line n. q=quit

history > **history1.txt** Save as text file (>> Appends)
cat history1.txt Read file
less history1.txt

clear Cntrl+L

LIST FILES

ls
man ls
ls -la
ls -lah More Readable ?

MAKE DIRECTORIES AND FILES