3.1 Computer Detective: Terminal Quest

The same beginner terminal skills on Windows WSL, Windows Git Bash, Mac, Chromebook, Linux, Android, and iPhone or iPad

Technology Commons | Port Credit Secondary School

DO THIS FIRST

1. Open a terminal using the instructions for your device.
2. Complete Sections 1 to 5 in order.
3. Fill in every blue answer box with results from your own computer.
4. Paste your full reviewed command `history`. Remove private information.
5. Rename this Google Doc: STUDENTNUMBER-LastName-Terminal-Quest.
6. Turn in this one Google Doc in Google Classroom.

HOW YOUR MARK WORKS: 100 MARKS

Core work: 80 marks

20 marks: Run the basic system commands and record accurate outputs.
20 marks: Create the terminal-quest folder and hello.txt, then verify both.
15 marks: Observe a running program and explain what the computer is doing.
15 marks: Paste a complete reviewed command `history` and protect private information.
10 marks: Complete every required answer clearly.

Impress Me: 20 marks

10 marks: Make one accurate improvement to these instructions and explain why it helps.
5 marks: Use `man ls` to learn and test one new `ls` option, then explain it.
5 marks: Show and explain one safe command or troubleshooting step you learned independently.
Bonus: Up to 5 marks for repeating Sections 1 and 2 on a second operating system and explaining one meaningful difference.

LEVEL 4+: MAKE THE INSTRUCTIONS BETTER

If anything here is unclear, incomplete, or could be explained better, improve it in your own copy. Use Suggesting mode if it is available. Otherwise, add a clearly labelled “Suggested improvement” with your revised wording. Include one sentence explaining why your version is clearer or more useful. Do not remove required work. Mr. A will review your change and may

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update the course website and future assignment documents if he agrees it helps. Improving a real instruction accurately is one way to demonstrate Impress Me evidence.
Related course lesson: Explore Linux, Part 5: Meet the terminal

Student: [Type here] Student #: [Type here] Device: [Windows WSL / Windows Git Bash / Mac / Chromebook / Linux / Android / iPhone or iPad] Due: Google Classroom

START HERE

Your mission: use the terminal to explore your computer, make a file, and watch running programs. Fill in the blue answer boxes as you go.
Estimated time: 25-35 minutes after terminal setup.
AT HOME: Learn the terminal on Windows using WSL or Git Bash, on Mac, Chromebook, or Linux. Android and iPhone or iPad are slower and less comfortable, but possible.
IN CLASS WITHOUT INTERNET: After Linux Mint is installed, or while Linux Mint is running from the bootable USB, the core commands work offline. Download the TEJ Linux Offline Kit before disconnecting for offline assignment and answer-sheet copies. Ethernet cables and Internet access may take time, so this work is ready while you wait.

USB or download instructions and printable quick start

Hand in ONE file: this completed Google Doc, with your full reviewed command `history` pasted in Section 5.

OPEN A TERMINAL: CHOOSE YOUR COMPUTER

WINDOWS (WSL + UBUNTU): WSL means Windows Subsystem for Linux. It lets you use Ubuntu Linux inside Windows.
If WSL is already installed: open Start, search for WSL, Ubuntu, or the name of the installed Linux distribution, and open the matching app. Skip the installation steps.
If not installed, follow these steps:
1. Ask the computer owner for permission. If installation is blocked, stop and ask your teacher. Do not change security settings.
2. Search for PowerShell in Start. Right-click it and select Run as administrator.
3. In PowerShell, type this command and press Enter:

```
wsl --install
```

4. Restart Windows when asked.
5. Open WSL from Start. Depending on the Windows setup, it may appear as WSL, Ubuntu, or the name of another installed Linux distribution. On first launch, create a Linux username and password. Keep your password private.
Run the remaining commands in WSL or your installed Linux distribution, not PowerShell.
WINDOWS (GIT BASH ALTERNATIVE): With the computer owner's permission, install Git for Windows and open Git Bash from Start. Git Bash provides Bash and common Unix-style commands on Windows. It is not Linux or Unix: paths, permissions, available commands, process tools, and system information come from Windows or its compatibility layer, so some outputs differ. It is still

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useful for file navigation, Git, shell practice, scripts, and Bashcrawl. For WSL installation details, use the Microsoft WSL setup guide.
LINUX MINT OR UBUNTU: Press Ctrl + Alt + T to open Terminal. You can also search for Terminal in the application menu. No WSL installation is needed.
MAC: Press Command (⌘) + Space, search for Terminal, then press Return. Or open Applications > Utilities > Terminal.
CHROMEBOOK: On a personal Chromebook or owner account, open Settings > About ChromeOS > Developers > Linux development environment > Set up. Setup needs Internet. After setup, open Terminal from the Launcher. A school-managed Chromebook may block this feature. Do not use Developer Mode or bypass school management.

ANDROID PHONE OR TABLET: Install Termux from F-Droid. Open Termux. The assignment commands work directly in the app.

IPHONE OR IPAD: Install iSH Shell. Open iSH, run `apk update`, then `apk add bash`, then bash.

Using a phone is slower and more difficult than using a computer, but Android and iPhone both work. A Bluetooth keyboard makes it easier. If you are waiting for a classroom computer or Internet connection, use your phone to begin or continue the assignment instead of doing nothing. 📱💻

FIRST, SEE WHAT A TERMINAL LOOKS LIKE

EXAMPLE ONLY: These are not your answers.

```
$ pwd
/home/sam
$ ls
Desktop  Documents  Downloads  Games
```

Lines starting with $ show a command the person typed. The lines below are the computer's output (its answer). Do not type $ yourself. Some Macs show % instead. Your username, folders, and output will be different.
Now start Section 1, run the real commands on YOUR computer, and type your results in the blue boxes.
PRIVACY: Some answers can contain your username, computer name, or home-folder path. If an answer contains your real name or other private information, replace only that part with REDACTED.
OPTIONAL 5-MINUTE VIDEO: The first five minutes of Linux Command-Line for Beginners

1 WHO AM I, AND WHERE AM I?

A COMMAND is an instruction you type. Example: `pwd` means Print Working Directory, or "show my current folder." Directory means folder. Run each command in the left column; type the result in the blue box. In `ls -a`, -a is an OPTION (or flag), which tells `ls` to include hidden files.

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Command + easy memory trick	My output (type in the box)
`whoami` WHO AM I? Shows your terminal username.	*[Type your username here, or REDACTED if it contains personal information.]*
`hostname` HOST NAME: shows the computer name.	*[Type the computer name here, or REDACTED if it contains personal information.]*
`pwd` PRINT WORKING DIRECTORY: tells the folder you are in.	*[Type the path here. Replace any personal name with REDACTED.]*
`ls` LiSt: shows files and folders in the current folder.	*[Type 2 or 3 names here, or "empty".]*
`ls -a` LIST ALL: -a is an option to also show hidden items.	*[Type one name that appears with `ls -a` but not with `ls`.]*

2 BE A COMPUTER DETECTIVE

These commands tell you about the system you are running. In WSL, Linux is inside Windows. On a Mac, the system may say Darwin. In Termux or iSH, the system normally says Linux. Git Bash may show a MINGW or MSYS Windows compatibility name instead of Linux.

Command + easy memory trick	My output (type in the box)
`uname -s` UNIX NAME, SYSTEM: -s asks for the system name.	*[Type Linux, Darwin, or what you see.]*
`uname -m` UNIX NAME, MACHINE: -m asks for the machine/CPU type.	*[Type the result, such as x86_64 or arm64.]*
`df -h .` DISK FREE: -h = easy-to-read size; . = this folder.	*[Type the number under Avail (available space).]*
`uptime` UP TIME: shows how long the system has been running.	*[Type the `uptime` you see.]*

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3 MAKE YOUR FIRST FOLDER AND FILE

Type these one at a time. cd = Change Directory (move to another folder), ~ = your home folder, and mkdir = Make Directory (make a new folder).

```
cd ~
mkdir -p terminal-quest
cd terminal-quest
```

In mkdir -p terminal-quest, -p helps create the folder if needed, and terminal-quest is the name of the folder.

Now run `pwd` and `ls`. Next, `echo` means repeat text, and > puts the text into a file. Type:

```
echo Hello from my computer > hello.txt
ls
cat hello.txt
cd ~
pwd
```

ARGUMENT means extra information you give a command. In `cat hello.txt`, cat is the command (show a file); hello.txt is its argument (which file?). cat is short for concatenate, but here it simply displays the file.

Check this step	My result (type here)
`pwd (after cd terminal-quest)` PRINT WORKING DIRECTORY: did you move inside the new folder?	*[Type the path. It should end with terminal-quest.]*
`ls` **(after creating hello.txt)** LIST: find your new file.	*[Type the file name you see.]*
`cat hello.txt` SHOW THIS FILE: hello.txt is the argument (file name).	*[Type exactly what the file says.]*
`pwd (after cd ~)` Where did you return? ~ means your home folder.	*[Type the home folder path.]*

4 SEE WHAT YOUR COMPUTER IS DOING

A process is a running program. `htop` shows processes plus CPU and memory use. CPU means the computer's main processor; memory (RAM) holds what active programs use.

WSL / Ubuntu: try `htop`. If the terminal says "command not found," get permission to install it with these separate commands:

```
sudo apt update
sudo apt install htop -y
```

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`htop`

Mac: try htop if it is already installed; otherwise run top. On WSL, top also works if you cannot install htop. On Android with Termux or iPhone/iPad with iSH, run top. Press q to leave the process screen. Do not stop an unfamiliar phone process.

Git Bash: top and htop are not normally included. Run tasklist | more, or open Windows Task Manager, then record one running process and one CPU or memory observation. This difference is evidence that Git Bash is a Windows shell environment, not a Linux system.

`top`

sudo means use administrator permission. In apt install `htop` -y, `htop` is the program to install and -y is an option to answer yes. Passwords may look invisible when typed; never share one. Ask for help if installation is blocked.

What to look for	My observation
CPU In `htop` or `top`, CPU shows how busy your processor is.	*[Type one number, process, or observation.]*
MEM / RAM Look for memory use in `htop` or `top`.	*[Type one number or observation.]*

5 COPY AND PASTE YOUR FULL TERMINAL HISTORY

History is a list of commands you have typed, not their output. Paste the COMPLETE `history` available in your terminal. Do not use tail or select only a few lines.

STEP 1. LOOK AT YOUR HISTORY FIRST

Windows WSL, Linux Mint, Ubuntu, Android Termux, or iSH after starting Bash: type this command and press Enter:

```
history
```

Mac (default zsh): type this instead. The 1 means show `history` starting at the first saved entry:

```
history 1
```

Check for passwords, tokens, personal information or private commands BEFORE copying. If you see anything sensitive, do not copy or paste it. Ask for help safely reviewing a copy.

STEP 2. COPY TO THE CLIPBOARD. CHOOSE YOUR COMPUTER

A. WINDOWS WITH WSL OR GIT BASH

```
history | clip.exe
```

clip.exe copies your Linux `history` straight to the Windows clipboard. There is nothing to install.

B. MAC (default zsh)

```
history 1 | pbcopy
```

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pbcopy copies `history` to the Mac clipboard, with nothing to install. If your Mac uses Bash rather than zsh, run `history | pbcopy`.

C. LINUX MINT / UBUNTU

Check which kind of desktop session is running:

```
echo $XDG_SESSION_TYPE
```

If the result says x11 (common on Linux Mint Xfce), install xclip if necessary and then copy:

```
sudo apt install xclip -y
history | xclip -selection clipboard
```

If the result says wayland (common on Ubuntu), install wl-clipboard if necessary and then copy:

```
sudo apt install wl-clipboard -y
history | wl-copy
```

Ask for permission if software installation requires administrator access. Never submit your password.

D. ANDROID OR IPHONE / IPAD

Run `history`. Touch and hold in the terminal, select the complete reviewed `history`, and copy it. If the output is long, run `history > ~/terminal-quest-history.txt` and then `cat ~/terminal-quest-history.txt` before selecting and copying the text.

STEP 3. PASTE INTO THIS GOOGLE DOC

Click the large blue FULL COMMAND HISTORY box below. Press Ctrl + V on Windows/Linux, Command + V on Mac, or touch and hold and choose Paste on a phone or tablet. Replace the placeholder with the entire pasted `history`.

Check that the pasted commands include the activities you tried. The | (pipe) symbol sends the `history` output to the clipboard program; it does not shorten the list.

Review what you pasted before you submit. Remove anything sensitive and ask for help if you are unsure. Full `history` means all available non-private entries, not just the last 40.

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FULL COMMAND HISTORY (PASTE BELOW)
[PASTE YOUR COMPLETE, REVIEWED COMMAND HISTORY HERE. This box will grow as you paste.]

Complete the two short reflection questions beneath the `history` box.

Final question	My answer
`Privacy check` Did you paste your full available `history` and check that it contains no private information?	*[Type: Full `history` pasted and privacy checked. Do not submit if unsafe.]*
`Explain an argument` In `cat hello.txt`, which part is the command, and which is the argument?	*[Type a simple explanation in your own words.]*

FINAL CHECK, THEN TURN IN

1. Fill in every blue answer box, including `pwd` and `ls`, and paste your complete reviewed command `history`.
2. Rename the Google Doc: STUDENTNUMBER-LastName-Terminal-Quest.
3. Submit this completed Google Doc with your pasted `history` in Google Classroom. Click Turn in.

OPTIONAL EXTRA

Try the command man ls to open the manual for ls. Press q to leave. Which new option did you learn?

[Optional answer: Type here.]

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BONUS: USE A SECOND SYSTEM

Repeat Sections 1 and 2 on a second operating system. Add a small comparison showing the two systems and explain one meaningful difference in the command output. You may use another physical computer, a Linux Mint live USB, or VirtualBox inside Windows, Mac, or Linux. Ask the computer owner before installing VirtualBox, and do not change firmware, security, or virtualization settings without permission. Up to 5 bonus marks.

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