เนื่องจากเครื่องของอาจารย์ต้อง VPN เข้า Network ของ SIT ในที่นี้จึงใช้เป็น VM ที่ติดตั้ง Ubuntu 24.04.3 แทน และเข้าใช้งานโดยการ ssh ผ่าน MobaXterm ค่ะ

```
kw@is-temp:~$ hostnamectl
 Static hostname: is-temp
       Icon name: computer-vm
         Chassis: vm
      Machine ID: 7f9100ec24b44e6abb12da38115bd8bb
         Boot ID: fc2b5e8c61f445e59936fadcda161fb4
  Virtualization: oracle
Operating System: Ubuntu 24.04.3 LTS
          Kernel: Linux 6.8.0-78-generic
    Architecture: x86-64
 Hardware Vendor: innotek GmbH
  Hardware Model: VirtualBox
Firmware Version: VirtualBox
   Firmware Date: Fri 2006-12-01
    Firmware Age: 18y 9month 1w
kw@is-temp:~$
```

1. Use ssh to log into your Amazon EC2 system as ec2-user.

2. Use the date command to display the current time and date.

```
kw@is-temp:~$ date
Mon Sep  8 09:19:32 UTC 2025
kw@is-temp:~$
```

3. Use the +%r argument with the date command to display the current time in 12-hour clock

```
kw@is-temp:~$ date +%r
09:20:00 AM
kw@is-temp:~$
```

4. What kind of file is /usr/bin/zcat? Is it readable by humans? Use the file command to determine its file type.

```
kw@is-temp:~$ file /usr/bin/zcat
-bash: file: command not found
kw@is-temp:~$ type -a file
-bash: type: file: not found
kw@is-temp:~$ command -v file
kw@is-temp:~$ echo "$PATH" |grep file
```

เนื่องจาก VM นี้ไม่มี file package จึงต้องทำการ install ด้วย apt install file แล้วจึงสามารถใช้คำสั่ง file ได้

```
kw@is-temp:~$ file /usr/bin/zcat
/usr/bin/zcat: POSIX shell script, ASCII text executable
kw@is-temp:~$
```

ไฟล์ /usr/bin/zcat เป็นไฟล์ POSIX shell script เขียนด้วย ASCII มนุษย์สามารถอ่านเข้าใจได้ ทดลองอ่านไฟล์ได้ ด้วยการใช้ cat /usr/bin/zcat เพื่ออ่านไฟล์ทั้งไฟล์ หรือ head /usr/bin/zcat เพื่ออ่าน 10 บรรทัดแรกของไฟล์

```
kw@is-temp:~$ head /usr/bin/zcat
#!/bin/sh
# Uncompress files to standard output.

# Copyright (C) 2007, 2010-2022 Free Software Foundation, Inc.

# This program is free software; you can redistribute it and/or modify
# it under the terms of the GNU General Public License as published by
# the Free Software Foundation; either version 3 of the License, or
# (at your option) any later version.

kw@is-temp:~$
```

5. The wc command can be used to display the number of lines, words, and bytes in the script /usr/bin/zcat. Instead of retyping the file name, use the Bash history shortcut Esc+. (the keys Esc and . pressed at the same time) to reuse the argument from the previous command.

```
kw@is-temp:~$ wc /usr/bin/zcat
  51  299 1984 /usr/bin/zcat
kw@is-temp:~$ ▉
```

/usr/bin/zcat มี 51 บรรทัด 299 คำ และขนาด 1984 bytes

6. Use the head command to display the first 10 lines of /usr/bin/zcat. Try using the Esc+. shortcut again.

```
kw@is-temp:~$ head /usr/bin/zcat
#!/bin/sh
# Uncompress files to standard output.

# Copyright (C) 2007, 2010-2022 Free Software Foundation, Inc.

# This program is free software; you can redistribute it and/or modify
# it under the terms of the GNU General Public License as published by
# the Free Software Foundation; either version 3 of the License, or
# (at your option) any later version.

kw@is-temp:~$ ▉
```

7. Display the last 10 lines at the bottom of the /usr/bin/zcat file. Use the tail command.

```
kw@is-temp:~$ tail /usr/bin/zcat
With no FILE, or when FILE is -, read standard input.

Report bugs to <bug-gzip@gnu.org>."

case $1 in
--help)    printf '%s\n' "$usage"    || exit 1; exit;;
--version) printf '%s\n' "$version" || exit 1; exit;;
esac

exec gzip -cd "$@"
kw@is-temp:~$ ▉
```

8. Repeat the previous command exactly. Either press the UpArrow key once to scroll back through the command history one command and press Enter, or run the shortcut command !! to run the most recent command in the command history. (Try both!)

```
kw@is-temp:~$ !!
tail /usr/bin/zcat
With no FILE, or when FILE is -, read standard input.

Report bugs to <bug-gzip@gnu.org>."

case $1 in
--help)    printf '%s\n' "$usage"    || exit 1; exit;;
--version) printf '%s\n' "$version" || exit 1; exit;;
esac

exec gzip -cd "$@"
kw@is-temp:~$ ▉
```

9. Repeat the previous command again, but this time add the -n 20 option to display the last 20 lines in the file. Use command line editing to accomplish this with a minimal amount of keystrokes.

```
kw@is-temp:~$ tail -n 20 /usr/bin/zcat
 -l, --list          list compressed file contents
 -q, --quiet         suppress all warnings
 -r, --recursive     operate recursively on directories
 -S, --suffix=SUF    use suffix SUF on compressed files
     --synchronous   synchronous output (safer if system crashes, but slower)
 -t, --test          test compressed file integrity
 -v, --verbose       verbose mode
     --help          display this help and exit
     --version       display version information and exit

With no FILE, or when FILE is -, read standard input.

Report bugs to <bug-gzip@gnu.org>."

case $1 in
--help)    printf '%s\n' "$usage"   || exit 1; exit;;
--version) printf '%s\n' "$version" || exit 1; exit;;
esac

exec gzip -cd "$@"
kw@is-temp:~$ █
```

10. Use the shell history to run the date +%r command again. Display the list of previous commands with the history command to identify the specific date command to be executed. Run the command with the !number history command. Note that your shell history may be different than the following example. Figure out the command number to use based on the output of your own history command.

```
71  file /usr/bin/zcat
72  date
73  date +%r
74  file /usr/bin/zcat
75  cat /usr/bin/zcat|head
76  cat /usr/bin/zcat
77  head /usr/bin/zcat
78  wc /usr/bin/zcat
79  tail /usr/bin/zcat
80  tail -n 20 /usr/bin/zcat
81  ls
82  pwd
83  ls -lh
84  rm randrw
85  lsblk
86  history
kw@is-temp:~$ !73
date +%r
10:19:27 AM
kw@is-temp:~$ █
```

11. Finish your session with the bash shell. Use either exit or the Ctrl+d key combination to close the shell and log out.

```
kw@is-temp:~$ exit
logout


Session stopped
    - Press <Return> to exit tab
    - Press R to restart session
    - Press S to save terminal output to file
█
```

12. This concludes this exercise. Stop your Amazon EC2 instance.