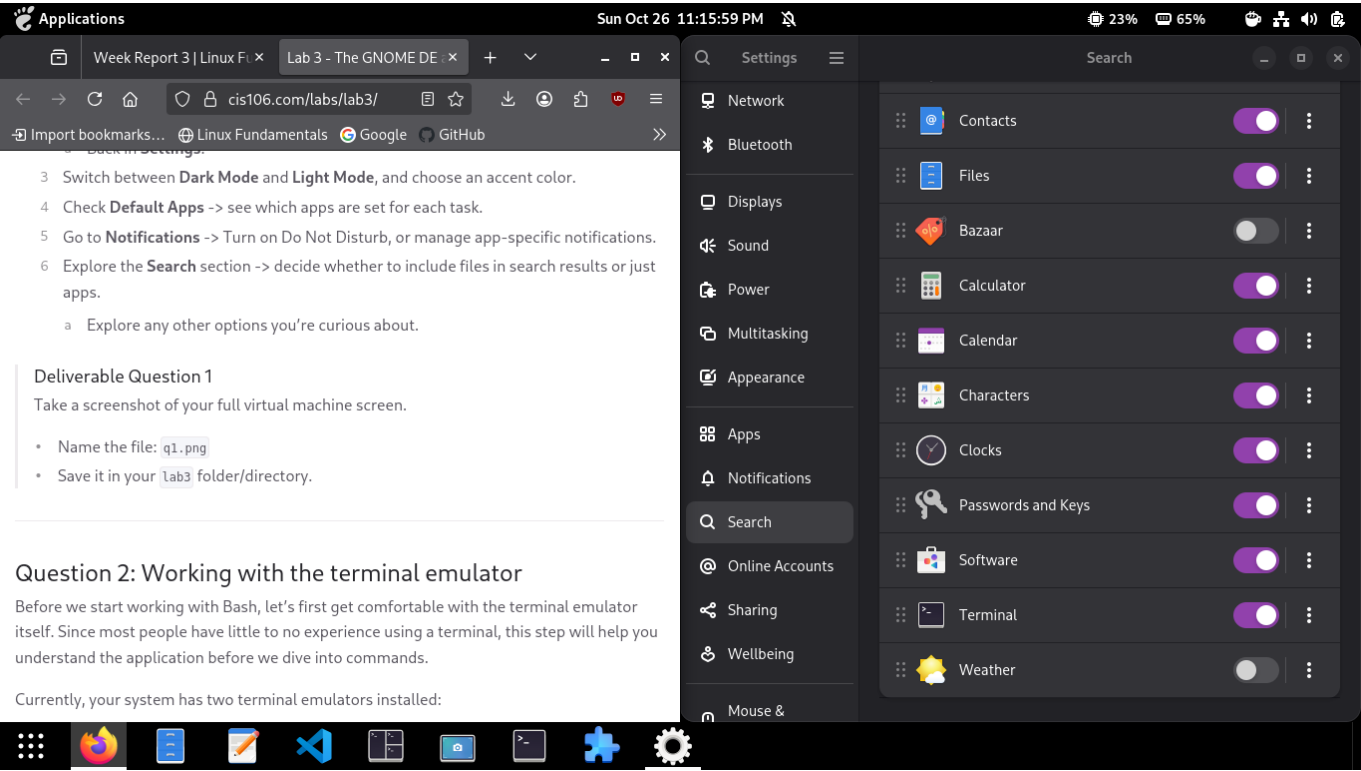
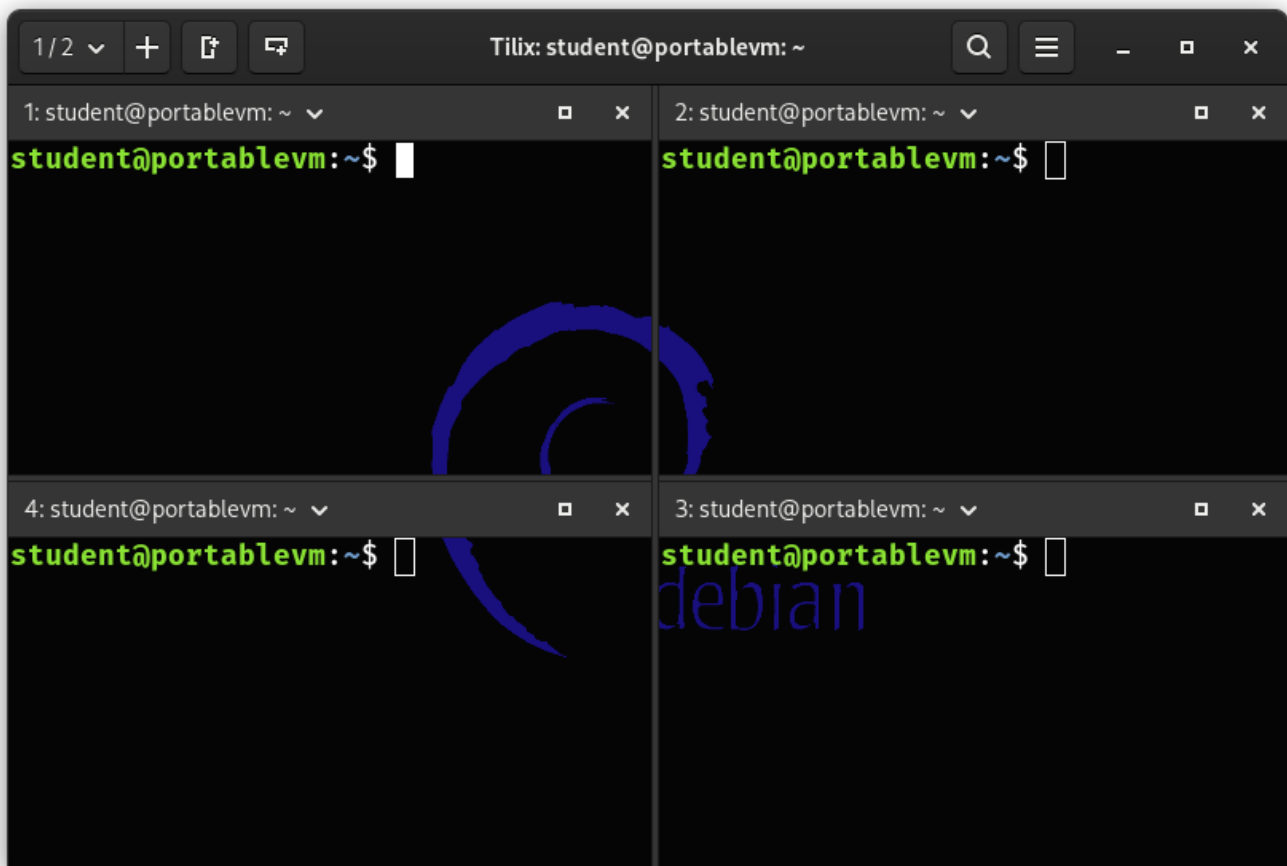


# Lab 3 Submission

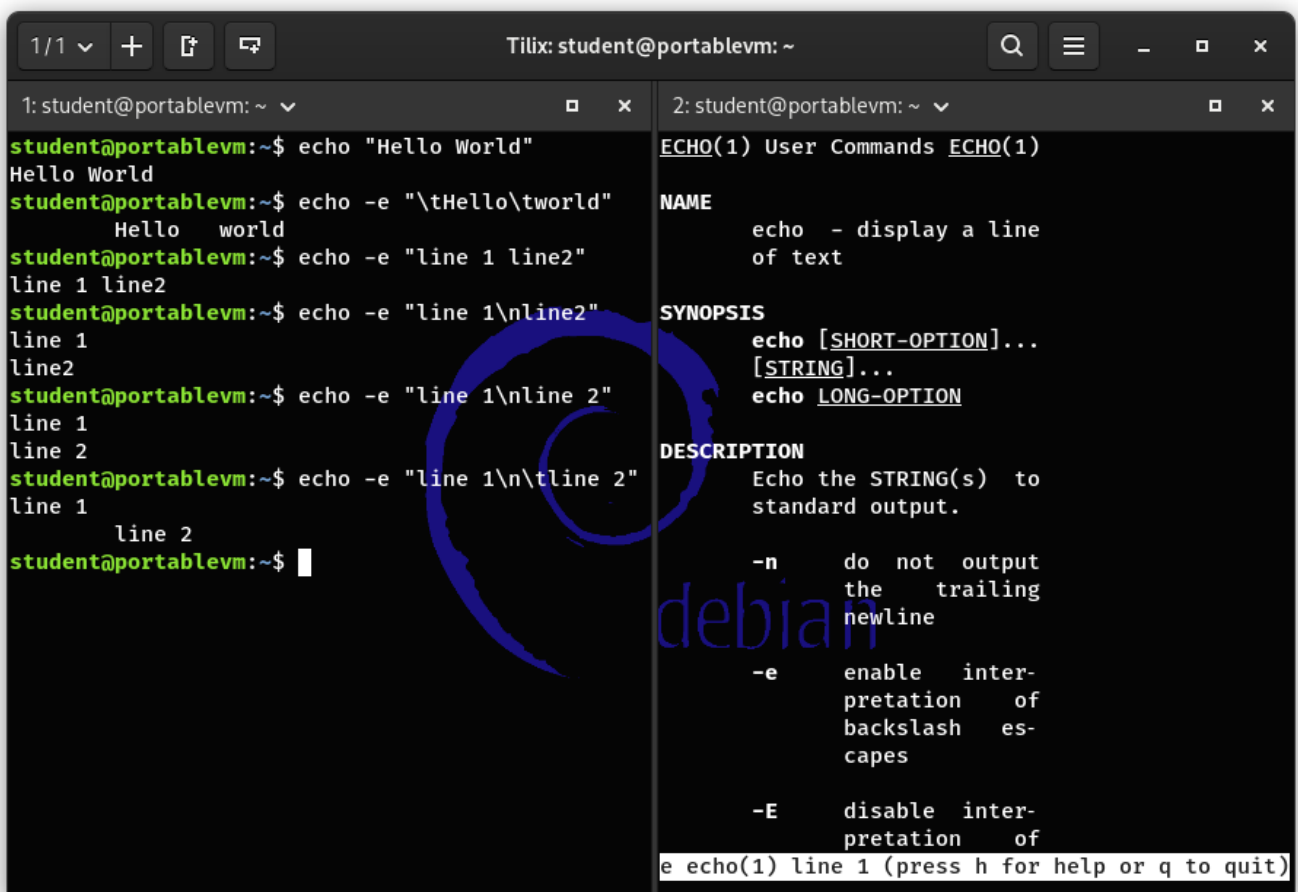
## Question 1



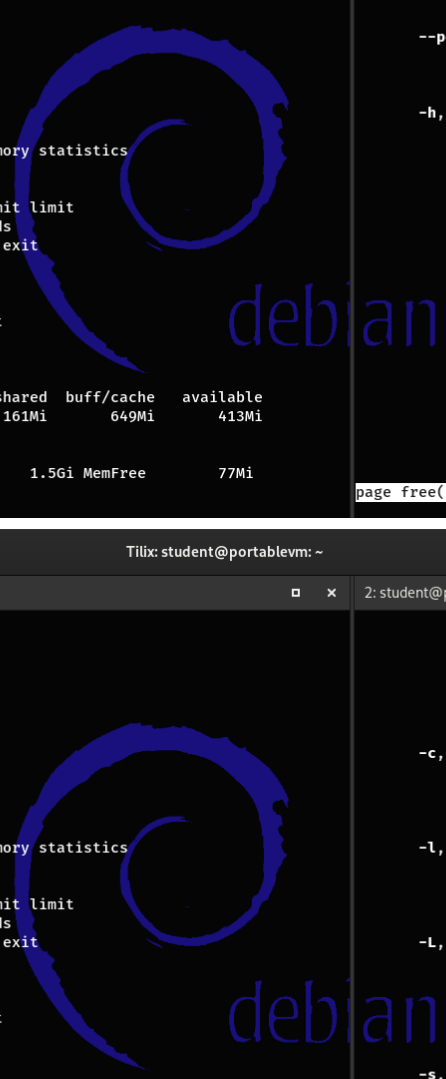
## Question 2



### Question 3



# Challenge Question



```

1/1 v + [ ] [ ]
Tilix: student@portablevm: ~
1: student@portablevm: ~
--kilo      show output in kilobytes
--mega      show output in megabytes
--giga      show output in gigabytes
--tera      show output in terabytes
--peta      show output in petabytes
-k, --kibi  show output in kibibytes
-m, --mebi  show output in mebibytes
-g, --gibi  show output in gibibytes
--tebi      show output in tebibytes
--pebi      show output in pebibytes
-h, --human  show human-readable output
--si        use powers of 1000 not 1024
-l, --lohi  show detailed low and high memory statistics
-L, --line  show output on a single line
-t, --total  show total for RAM + swap
-v, --committed show committed memory and commit limit
-s N, --seconds N repeat printing every N seconds
-c N, --count N repeat printing N times, then exit
-w, --wide  wide output

--help      display this help and exit
-V, --version output version information and exit

For more details see free(1).
student@portablevm:~$ free -h
              total        used        free      shared  buff/cache   available
Mem:           1.9Gi         1.5Gi         77Mi        161Mi        649Mi        413Mi
Swap:          1.3Gi         666Mi        692Mi
student@portablevm:~$ free -h -L
SwapUse    666Mi  CacheUse    649Mi  MemUse        1.5Gi  MemFree        77Mi
student@portablevm:~$

2: student@portablevm: ~
Implies --si.

--tera Display the amount of
memory in terabytes.
Implies --si.

--peta Display the amount of
memory in petabytes.
Implies --si.

-h, --human
Show all output fields
automatically scaled
to shortest three
digit unit and display
the units of print
out. Following units
are used.

B = bytes
Ki = kibibyte
Mi = mebibyte
Gi = gibibyte
Ti = tebibyte
Pi = pebibyte

If unit is missing,
and you have exbibyte
of RAM or swap, the
number is in tebibytes
page free(1) line 112/230 60% (press h for help or q to quit)

1/1 v + [ ] [ ]
Tilix: student@portablevm: ~
1: student@portablevm: ~
--kilo      show output in kilobytes
--mega      show output in megabytes
--giga      show output in gigabytes
--tera      show output in terabytes
--peta      show output in petabytes
-k, --kibi  show output in kibibytes
-m, --mebi  show output in mebibytes
-g, --gibi  show output in gibibytes
--tebi      show output in tebibytes
--pebi      show output in pebibytes
-h, --human  show human-readable output
--si        use powers of 1000 not 1024
-l, --lohi  show detailed low and high memory statistics
-L, --line  show output on a single line
-t, --total  show total for RAM + swap
-v, --committed show committed memory and commit limit
-s N, --seconds N repeat printing every N seconds
-c N, --count N repeat printing N times, then exit
-w, --wide  wide output

--help      display this help and exit
-V, --version output version information and exit

For more details see free(1).
student@portablevm:~$ free -h
              total        used        free      shared  buff/cache   available
Mem:           1.9Gi         1.5Gi         77Mi        161Mi        649Mi        413Mi
Swap:          1.3Gi         666Mi        692Mi
student@portablevm:~$ free -h -L
SwapUse    666Mi  CacheUse    649Mi  MemUse        1.5Gi  MemFree        77Mi
student@portablevm:~$

2: student@portablevm: ~
mode. The wide mode
produces lines longer
than 80 characters. In
this mode buffers and
cache are reported in
two separate columns.

-c, --count count
Display the result
count times. Requires
the -s option.

-l, --lohi
Show detailed low and
high memory statis-
tics.

-L, --line
Show output on a sin-
gle line, often used
with the -s option to
show memory statistics
repeatedly.

-s, --seconds delay
Continuously display
the result delay sec-
onds apart. You may
actually specify any
floating point number
page free(1) line 148/230 78% (press h for help or q to quit)

```

```
1/1 v + f m Tilix: student@portablevm: ~
1: student@portablevm: ~
student@portablevm:~$ uname -s -r -v -o
Linux 6.12.48+deb13-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.12.48-1 (2025-09-20) GNU/Linux
student@portablevm:~$

2: student@portablevm: ~
DESCRIPTION
Print certain system information. With no OPTION, same as -s.

-a, --all
    print all information, in the following order, except omit
    -p and -i if unknown:

-s, --kernel-name
    print the kernel name

-n, --nodename
    print the network node hostname

-r, --kernel-release
    print the kernel release

-v, --kernel-version
    print the kernel version

-m, --machine
    print the machine hardware name

-p, --processor
    print the processor type (non-portable)

-i, --hardware-platform
    print the hardware platform (non-portable)

-o, --operating-system
    print the operating system
Manual page uname(1) line 9 (press h for help or q to quit)
```

```
1/1 v + f m Tilix: student@portablevm: ~
1: student@portablevm: ~
student@portablevm:~$ date --rfc-3339=ns
2025-10-27 01:49:48.165181671-04:00
student@portablevm:~$

2: student@portablevm: ~
    like --date; once for each line of DATEFILE

-I[FMT], --iso-8601[=FMT]
    output date/time in ISO 8601 format. FMT='date' f
or date
    only (the default), 'hours', 'minutes', 'seconds', o
r 'ns'
    for date and time to the indicated precision. E
xample:
    2006-08-14T02:34:56-06:00

--resolution
    output the available resolution of timestamps E
xample:
    0.000000001

-R, --rfc-email
    output date and time in RFC 5322 format. Example:
Mon, 14
    Aug 2006 02:34:56 -0600

--rfc-3339=FMT
    output date/time in RFC 3339 format. FMT='date', 'se
conds',
    or 'ns' for date and time to the indicated precision.
Exam-
    ple: 2006-08-14 02:34:56-06:00

-r, --reference=FILE
Manual page date(1) line 25 (press h for help or q to quit)
```