

# Lab 8

## Question 1

### P1

```
1/1 + G ↻ Tilix: eli@cis106:~  
1: eli@cis106:~  
15804 with these requirements. We do not solicit donations in locations  
15805 where we have not received written confirmation of compliance. To SEND  
15806 DONATIONS or determine the status of compliance for any particular  
15807 state visit www.gutenberg.org/donate.  
15808  
15809 While we cannot and do not solicit contributions from states where we  
15810 have not met the solicitation requirements, we know of no prohibition  
15811 against accepting unsolicited donations from donors in such states who  
15812 approach us with offers to donate.  
15813  
15814 International donations are gratefully accepted, but we cannot make  
15815 any statements concerning tax treatment of donations received from  
15816 outside the United States. U.S. laws alone swamp our small staff.  
15817  
15818 Please check the Project Gutenberg web pages for current donation  
15819 methods and addresses. Donations are accepted in a number of other  
15820 ways including checks, online payments and credit card donations. To  
15821 donate, please visit: www.gutenberg.org/donate.  
15822  
15823 Section 5. General Information About Project Gutenberg™ electronic works  
15824  
15825 Professor Michael S. Hart was the originator of the Project  
15826 Gutenberg™ concept of a library of electronic works that could be  
15827 freely shared with anyone. For forty years, he produced and  
15828 distributed Project Gutenberg™ eBooks with only a loose network of  
15829 volunteer support.  
15830  
15831 Project Gutenberg™ eBooks are often created from several printed  
15832 editions, all of which are confirmed as not protected by copyright in  
15833 the U.S. unless a copyright notice is included. Thus, we do not  
15834 necessarily keep eBooks in compliance with any particular paper  
15835 edition.  
15836  
15837 Most people start at our website which has the main PG search  
15838 facility: www.gutenberg.org.  
15839  
15840 This website includes information about Project Gutenberg™,  
15841 including how to make donations to the Project Gutenberg Literary  
15842 Archive Foundation, how to help produce our new eBooks, and how to  
15843 subscribe to our email newsletter to hear about new eBooks.  
15844  
15845  
eli@cis106:~$ _
```

### P2

```
3/3 + G ↻ Tilix: eli@cis106:~  
1: eli@cis106:~  
Mueslix Crispy Blend calories = 160  
Multi-Grain Cheerios calories = 100  
Nut&Honey Crunch calories = 120  
Nutri-Grain Almond-Raisin calories = 140  
Nutri-grain Wheat calories = 90  
Oatmeal Raisin Crisp calories = 130  
Post Nat. Raisin Bran calories = 120  
Product 19 calories = 100  
Puffed Rice calories = 50  
Puffed Wheat calories = 50  
Quaker Oat Squares calories = 100  
Quaker Oatmeal calories = 100  
Raisin Bran calories = 120  
Raisin Nut Bran calories = 100  
Raisin Squares calories = 90  
Rice Chex calories = 110  
Rice Krispies calories = 110  
Shredded Wheat calories = 80  
Shredded Wheat 'n'Bran calories = 90  
Shredded Wheat spoon size calories = 90  
Smacks calories = 110  
Special K calories = 110  
Strawberry Fruit Wheats calories = 90  
Total Corn Flakes calories = 110  
Total Raisin Bran calories = 140  
Total Whole Grain calories = 100  
Triples calories = 110  
Trix calories = 110  
Wheat Chex calories = 100  
Wheaties calories = 100  
Wheaties Honey Gold calories = 110  
eli@cis106:~$ _
```

**P3**

```
3/3 + Tilix: eli@cis106: ~/Documents/sample_files/Csv
1: eli@cis106: ~/Documents/sample_files/Csv ~
Tilix: eli@cis106: ~/Documents/sample_files/Csv
1: eli@cis106: ~/Documents/sample_files/Csv ~
Triumph TR7 Coupe;35.0;4;122.0;88.00;2500.;15.1;80;Europe
Volkswagen 1131 Deluxe Sedan;26.0;4;97.00;66.00;1835.;20.5;70;Europe
Volkswagen 411 (sw);22.0;4;121.0;76.00;2511.;18.0;72;Europe
Volkswagen Dasher;25.0;4;90.00;71.00;2223.;16.5;75;Europe
Volkswagen Dasher;26.0;4;79.00;67.00;1963.;15.5;74;Europe
Volkswagen Dasher;30.5;4;97.00;78.00;2190.;14.1;77;Europe
Volkswagen Dasher (diesel);43.4;4;90.00;48.00;2335.;23.7;80;Europe
Volkswagen Jetta;33.0;4;105.0;74.00;2190.;14.2;81;Europe
Volkswagen Model 111;27.0;4;97.00;60.00;1834.;19.0;71;Europe
Volkswagen Pickup;44.0;4;97.00;52.00;2130.;24.0;82;Europe
Volkswagen Rabbit;29.0;4;90.00;70.00;1937.;14.0;75;Europe
Volkswagen Rabbit;29.0;4;90.00;70.00;1937.;14.2;76;Europe
Volkswagen Rabbit;29.5;4;97.00;71.00;1829.;12.7;76;Europe
Volkswagen Rabbit;29.8;4;89.00;62.00;1845.;15.3;80;Europe
Volkswagen Rabbit;41.5;4;98.00;76.00;2144.;14.7;80;Europe
Volkswagen Rabbit C (Diesel);44.3;4;90.00;48.00;2085.;21.7;80;Europe
Volkswagen Rabbit Custom;29.0;4;97.00;78.00;1940.;14.5;77;Europe
Volkswagen Rabbit Custom Diesel;43.1;4;90.00;48.00;1985.;21.5;78;Europe
Volkswagen Rabbit L;36.0;4;105.0;74.00;1980.;15.3;82;Europe
Volkswagen Scirocco;31.5;4;89.00;71.00;1990.;14.9;78;Europe
Volkswagen Super Beetle 117;0;4;97.00;48.00;1978.;20.0;71;Europe
Volkswagen Type 3;23.0;4;97.00;54.00;2254.;23.5;72;Europe
Volvo 144ea;19.0;4;121.0;112.0;2868.;15.5;73;Europe
Volvo 145e (Sw);18.0;4;121.0;112.0;2933.;14.5;72;Europe
Volvo 244DL;22.0;4;121.0;98.00;2945.;14.5;75;Europe
Volvo 245;20.0;4;130.0;102.0;3150.;15.7;76;Europe
Volvo 264GL;17.0;6;163.0;125.0;3140.;13.6;78;Europe
Volvo Diesel;30.7;6;145.0;76.00;160.0;19.6;81;Europe
eli@cis106:~/Documents/sample_files/Csv$ soooooooooooooooooooooeli@cis106:~/Documents/sample_files/Csv$ wc -l sorted_cars.csv
408 sorted_cars.csv
eli@cis106:~/Documents/sample_files/Csv$ wc -m sorted_cars.csv
22663 sorted_cars.csv
eli@cis106:~/Documents/sample_files/Csv$ _
```

**Question 2 Challenge****q2.1 Command Used**

```
3/3 + Tilix: eli@cis106: ~
Tilix: eli@cis106: ~
1: eli@cis106: ~
eli@cis106:~$ cat -n access.log
 1  2025-02-19 06:24:49 Eren /download FAIL
 2  2025-07-11 23:48:09 Annie /dashboard SUCCESS
 3  2025-02-05 03:10:13 Honami /logout FAIL
 4  2025-01-07 21:03:44 Eren /dashboard FAIL
 5  2025-07-15 09:45:09 Arisu /404 FAIL
 6  2025-12-22 12:03:57 Arisu /logout DENIED
 7  2025-08-20 19:00:52 Edward /login SUCCESS
 8  2025-12-04 15:50:08 Walter /admin DENIED
 9  2025-07-07 00:55:13 Arisu /reset SUCCESS
10  2025-06-15 15:44:44 Haruka /logout FAIL
11  2025-02-06 10:13:55 Eren /reset DENIED
12  2025-05-03 14:12:24 Annie /admin SUCCESS
13  2025-03-08 06:37:50 Annie /admin FAIL
14  2025-11-21 07:26:42 Rize /dashboard DENIED
15  2025-11-12 08:53:30 Haruka /admin SUCCESS
16  2025-08-06 01:06:25 Seras /settings FAIL
17  2025-01-09 10:16:50 Kei /reset SUCCESS
18  2025-06-20 00:27:02 Kei /upload DENIED
19  2025-03-18 09:02:57 Honami /settings FAIL
20  2025-03-18 01:08:49 Shinji /404 SUCCESS
21  2025-01-04 09:11:39 Honami /upload DENIED
22  2025-10-11 20:41:44 Walter /upload DENIED
23  2025-04-14 17:40:12 Honami /admin SUCCESS
24  2025-03-03 05:40:35 Rei /404 FAIL
25  2025-10-01 04:33:11 Walter /dashboard SUCCESS
26  2025-03-12 03:06:47 Julia /settings SUCCESS
27  2025-11-13 22:55:31 Touka /404 FAIL
28  2025-03-06 22:54:46 Ken /download DENIED
29  2025-10-09 23:01:09 Spike /settings SUCCESS
30  2025-11-09 05:47:47 Annie /upload FAIL
31  2025-11-15 10:04:30 Haruka /settings DENIED
32  2025-12-20 01:09:59 Rize /settings DENIED
33  2025-03-12 02:22:04 Rei /dashboard FAIL
34  2025-03-24 15:49:34 Ein /download FAIL
35  2025-09-05 07:04:45 Rize /download DENIED
```

## **q2.1 answer**

```
3/3 + F Tilix: eli@cis106: ~
1: eli@cis106: ~
67 2025-09-22 19:57:03 Rize /upload SUCCESS
68 2025-11-07 00:36:41 Spike /admin SUCCESS
69 2025-12-09 15:08:18 Eren /dashboard FAIL
70 2025-04-02 00:20:47 Honami /download DENIED
71 2025-07-11 09:33:14 Eren /dashboard SUCCESS
72 2025-02-02 04:11:47 Haruka /settings SUCCESS
73 2025-12-19 16:48:39 Kei /upload DENIED
74 2025-09-28 17:58:49 Julia /reset FAIL
75 2025-05-26 16:17:41 Shinji /login DENIED
76 2025-12-02 10:29:23 Rei /admin FAIL
77 2025-04-13 00:18:10 Julia /download FAIL
78 2025-07-21 11:37:16 Arisu /settings SUCCESS
79 2025-10-03 15:24:47 Edward /admin SUCCESS
80 2025-10-04 13:09:41 Faye /dashboard SUCCESS
81 2025-07-18 16:19:10 Ken /dashboard FAIL
82 2025-09-15 23:12:20 Annie /dashboard SUCCESS
83 2025-02-05 16:14:24 Asimov /login DENIED
84 2025-02-28 06:12:26 Ein /dashboard FAIL
85 2025-07-07 14:06:23 Faye /logout SUCCESS
86 2025-01-06 03:31:08 Kei /upload SUCCESS
87 2025-10-22 06:20:01 Julia /reset SUCCESS
88 2025-06-11 04:39:37 Haruka /logout FAIL
89 2025-02-28 21:47:44 Julia /404 FAIL
90 2025-03-14 19:39:17 Ein /404 DENIED
91 2025-07-19 23:52:30 Ein /reset SUCCESS
92 2025-11-21 04:13:13 Spike /dashboard SUCCESS
93 2025-03-16 04:17:13 Eren /settings SUCCESS
94 2025-12-14 23:42:33 Annie /admin DENIED
95 2025-06-06 13:58:03 Haruka /admin DENIED
96 2025-08-11 18:41:59 Touka /reset SUCCESS
97 2025-04-16 09:22:25 Ken /dashboard DENIED
98 2025-09-18 00:24:06 Honami /download DENIED
99 2025-09-15 18:40:06 Honami /admin FAIL
100 2025-04-24 14:00:30 Ken /download SUCCESS
```

## q2.2

The screenshot shows a terminal window with two panes. The left pane displays a log entry from 'access.log' with the command 'head -n 1 access.log'. The right pane shows the man page for the 'head' command, highlighting options and their descriptions.

Option / Description	Description
<b>-n, --lines=[-]NUM</b>	print the first NUM lines instead of the first 10; with the leading '-' , print all but the last NUM lines of each file
<b>-q, --quiet, --silent</b>	never print headers giving file names
<b>-v, --verbose</b>	page head(1) line 37 (press h for help or q to quit)

**q2.3**

Tilix: eli@cis106: ~

```
1: eli@cis106: ~
2: eli@cis106: ~
```

**eli@cis106:~\$ tail -n 1 access.log**  
2025-04-24 14:00:30 [Ken] /download SUCCESS  
**eli@cis106:~\$**

each file;  
with the  
leading  
'-', print  
all but the  
last NUM  
bytes of  
each file

**-n, --lines=[-]NUM**  
print the  
first NUM  
lines instead of  
the first  
10; with  
the leading  
'-', print  
all but the  
last NUM  
lines of  
each file

**-q, --quiet,**  
**--silent**  
never print  
headers  
giving file  
names

**-v, --verbose**

page head(1) line 37 (press h for help or q to quit)

**q2.4**

Tilix: eli@cis106: ~

```
1: eli@cis106: ~
2: eli@cis106: ~
```

**eli@cis106:~\$ head -n 15 access.log access.log**  
==> access.log <==  
2025-02-19 06:24:49 Eren /download FAIL  
2025-07-11 23:48:09 Annie /dashboard SUCCESS  
2025-02-05 03:10:13 Honami /logout FAIL  
2025-01-07 21:03:44 Eren /dashboard FAIL  
2025-07-15 09:45:09 Arisu /404 FAIL  
2025-12-22 12:03:57 Arisu /logout DENIED  
2025-08-20 19:00:52 Edward /login SUCCESS  
2025-12-04 15:50:08 Walter /admin DENIED  
2025-07-07 00:55:13 Arisu /reset SUCCESS  
2025-06-15 15:44:44 Haruka /logout FAIL  
2025-02-06 10:13:55 Eren /reset DENIED  
2025-05-03 14:12:24 Annie /admin SUCCESS  
2025-03-08 06:37:50 Annie /admin FAIL  
2025-11-21 07:26:42 Rize /dashboard DENIED  
2025-11-12 08:53:30 Haruka /admin SUCCESS  
==> access.log <==  
2025-02-19 06:24:49 Eren /download FAIL  
2025-07-11 23:48:09 Annie /dashboard SUCCESS  
2025-02-05 03:10:13 Honami /logout FAIL  
2025-01-07 21:03:44 Eren /dashboard FAIL  
2025-07-15 09:45:09 Arisu /404 FAIL  
2025-12-22 12:03:57 Arisu /logout DENIED  
2025-08-20 19:00:52 Edward /login SUCCESS  
2025-12-04 15:50:08 Walter /admin DENIED  
2025-07-07 00:55:13 Arisu /reset SUCCESS  
2025-06-15 15:44:44 Haruka /logout FAIL  
2025-02-06 10:13:55 Eren /reset DENIED  
2025-05-03 14:12:24 Annie /admin SUCCESS  
2025-03-08 06:37:50 Annie /admin FAIL  
2025-11-21 07:26:42 Rize /dashboard DENIED  
2025-11-12 08:53:30 Haruka /admin SUCCESS  
**eli@cis106:~\$**

**-c, --bytes=[-]NUM**  
print the first NUM bytes of each  
file; with the leading '-', print all  
but the last NUM bytes of each file

**-n, --lines=[-]NUM**  
print the first NUM lines instead of  
the first 10; with the leading '-',  
print all but the last NUM lines of  
each file

**-q, --quiet, --silent**  
never print headers giving file names

**-v, --verbose**  
always print headers giving file names

**-z, --zero-terminated**  
line delimiter is NUL, not newline

**--help** display this help and exit

**--version**  
output version information and exit

NUM may have a multiplier suffix: b 512, KB  
1000, K 1024, MB 1000\*1000, M 1024\*1024, GB  
1000\*1000\*1000, G 1024\*1024\*1024, and so on  
for T, P, E, Z, Y, R, Q. Binary prefixes can  
be used, too: KiB=K, MiB=M, and so on.

l page head(1) line 21/79 65% (press h for help or q to quit)

**q2.5**

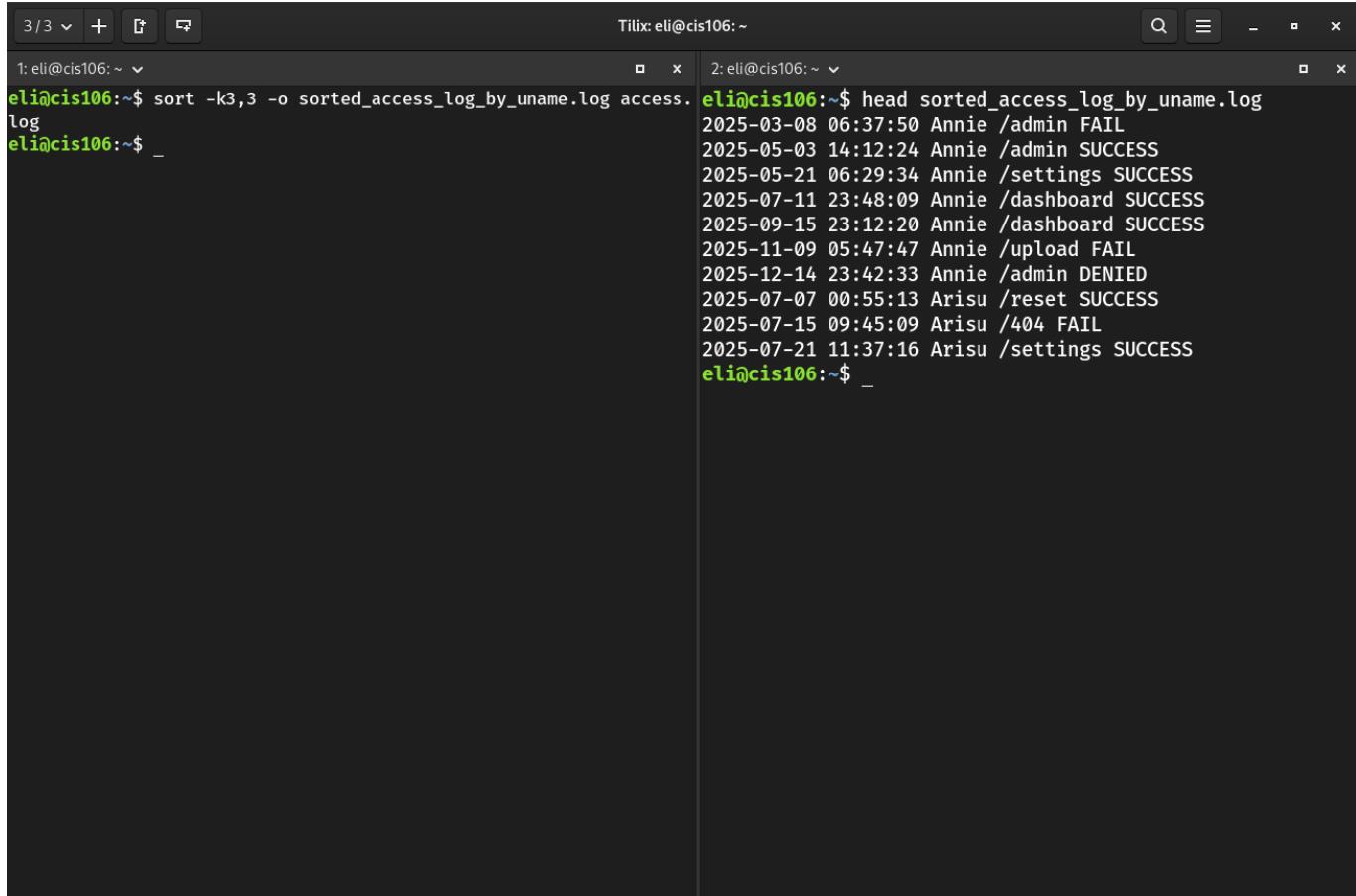
```
1: eli@cis106:~ ~
elio@cis106:~$ tail -n 15 access.log  access.log
==> access.log <==
2025-01-06 03:31:08 Kei /upload SUCCESS
2025-10-22 06:20:01 Julia /reset SUCCESS
2025-06-11 04:39:37 Haruka /logout FAIL
2025-02-28 21:47:44 Julia /404 FAIL
2025-03-14 19:39:17 Ein /404 DENIED
2025-07-19 23:52:30 Ein /reset SUCCESS
2025-11-21 04:13:13 Spike /dashboard SUCCESS
2025-03-16 04:17:13 Eren /settings SUCCESS
2025-12-14 23:42:33 Annie /admin DENIED
2025-06-06 13:58:03 Haruka /admin DENIED
2025-08-11 18:41:59 Touka /reset SUCCESS
2025-04-16 09:22:25 Ken /dashboard DENIED
2025-09-18 00:24:06 Honami /download DENIED
2025-09-15 18:40:06 Honami /admin FAIL
2025-04-24 14:00:30 Ken /download SUCCESS

==> access.log <==
2025-01-06 03:31:08 Kei /upload SUCCESS
2025-10-22 06:20:01 Julia /reset SUCCESS
2025-06-11 04:39:37 Haruka /logout FAIL
2025-02-28 21:47:44 Julia /404 FAIL
2025-03-14 19:39:17 Ein /404 DENIED
2025-07-19 23:52:30 Ein /reset SUCCESS
2025-11-21 04:13:13 Spike /dashboard SUCCESS
2025-03-16 04:17:13 Eren /settings SUCCESS
2025-12-14 23:42:33 Annie /admin DENIED
2025-06-06 13:58:03 Haruka /admin DENIED
2025-08-11 18:41:59 Touka /reset SUCCESS
2025-04-16 09:22:25 Ken /dashboard DENIED
2025-09-18 00:24:06 Honami /download DENIED
2025-09-15 18:40:06 Honami /admin FAIL
2025-04-24 14:00:30 Ken /download SUCCESS
elio@cis106:~$ _
```

**q2.6**

```
3 / 3 + ⌂ ⌄ Tilix: eli@cis106: ~ Q ⌂ ⌄ x  
1: eli@cis106: ~   
eli@cis106:~$ cut -f3 access.log  
2025-02-19 06:24:49 Eren /download FAIL  
2025-07-11 23:48:09 Annie /dashboard SUCCESS  
2025-02-05 03:10:13 Honami /logout FAIL  
2025-01-07 21:03:44 Eren /dashboard FAIL  
2025-07-15 09:45:09 Arisu /404 FAIL  
2025-12-22 12:03:57 Arisu /logout DENIED  
2025-08-20 19:00:52 Edward /login SUCCESS  
2025-12-04 15:50:08 Walter /admin DENIED  
2025-07-07 00:55:13 Arisu /reset SUCCESS  
2025-06-15 15:44:44 Haruka /logout FAIL  
2025-02-06 10:13:55 Eren /reset DENIED  
2025-05-03 14:12:24 Annie /admin SUCCESS  
2025-03-08 06:37:50 Annie /admin FAIL  
2025-11-21 07:26:42 Rize /dashboard DENIED  
2025-11-12 08:53:30 Haruka /admin SUCCESS  
2025-08-06 01:06:25 Seras /settings FAIL  
2025-01-09 10:16:50 Kei /reset SUCCESS  
2025-06-20 00:27:02 Kei /upload DENIED  
2025-03-18 09:02:57 Honami /settings FAIL  
2025-03-18 01:08:49 Shinji /404 SUCCESS  
2025-01-04 09:11:39 Honami /upload DENIED  
2025-10-11 20:41:44 Walter /upload DENIED  
2025-04-14 17:40:12 Honami /admin SUCCESS  
2025-03-03 05:40:35 Rei /404 FAIL  
2025-10-01 04:33:11 Walter /dashboard SUCCESS  
2025-03-12 03:06:47 Julia /settings SUCCESS  
2025-11-13 22:55:31 Touka /404 FAIL  
2025-03-06 22:54:46 Ken /download DENIED  
2025-10-09 23:01:09 Spike /settings SUCCESS  
2025-11-09 05:47:47 Annie /upload FAIL  
2025-11-15 10:04:30 Haruka /settings DENIED  
2025-12-20 01:09:59 Rize /settings DENIED  
2025-03-12 02:22:04 Rei /dashboard FAIL  
2025-03-24 15:49:34 Ein /download FAIL  
2025-09-05 07:04:45 Rize /download DENIED
```

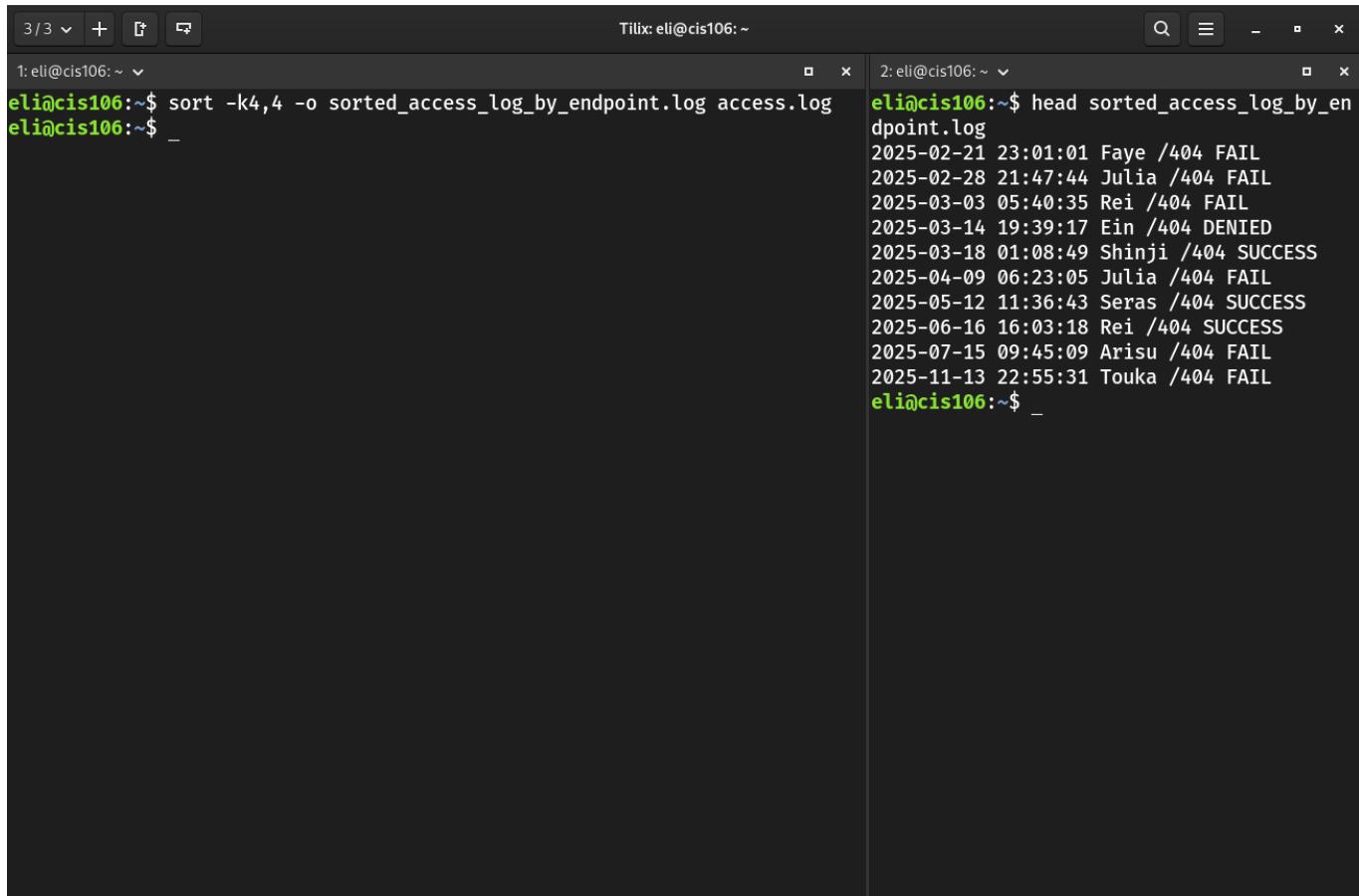
q2.7



```
1: eli@cis106: ~
elis@cis106:~$ sort -k3,3 -o sorted_access_log_by_uname.log access.log
log
eli@cis106:~$ _
```

```
2: eli@cis106: ~
elis@cis106:~$ head sorted_access_log_by_uname.log
2025-03-08 06:37:50 Annie /admin FAIL
2025-05-03 14:12:24 Annie /admin SUCCESS
2025-05-21 06:29:34 Annie /settings SUCCESS
2025-07-11 23:48:09 Annie /dashboard SUCCESS
2025-09-15 23:12:20 Annie /dashboard SUCCESS
2025-11-09 05:47:47 Annie /upload FAIL
2025-12-14 23:42:33 Annie /admin DENIED
2025-07-07 00:55:13 Arisu /reset SUCCESS
2025-07-15 09:45:09 Arisu /404 FAIL
2025-07-21 11:37:16 Arisu /settings SUCCESS
eli@cis106:~$ _
```

## q2.8



```
1: eli@cis106: ~
elis@cis106:~$ sort -k4,4 -o sorted_access_log_by_endpoint.log access.log
eli@cis106:~$ _
```

```
2: eli@cis106: ~
elis@cis106:~$ head sorted_access_log_by_endpoint.log
2025-02-21 23:01:01 Faye /404 FAIL
2025-02-28 21:47:44 Julia /404 FAIL
2025-03-03 05:40:35 Rei /404 FAIL
2025-03-14 19:39:17 Ein /404 DENIED
2025-03-18 01:08:49 Shinji /404 SUCCESS
2025-04-09 06:23:05 Julia /404 FAIL
2025-05-12 11:36:43 Seras /404 SUCCESS
2025-06-16 16:03:18 Rei /404 SUCCESS
2025-07-15 09:45:09 Arisu /404 FAIL
2025-11-13 22:55:31 Touka /404 FAIL
eli@cis106:~$ _
```

## q2.9

```
3 / 3 + ⌂ ⌂ Tilix: eli@cis106: ~
1: eli@cis106: ~
eli@cis106:~$ cut -d' ' -f3,4 --output-delimiter=" accessed: " access.log
Eren accessed: /download
Annie accessed: /dashboard
Honami accessed: /logout
Eren accessed: /dashboard
Arisu accessed: /404
Arisu accessed: /logout
Edward accessed: /login
Walter accessed: /admin
Arisu accessed: /reset
Haruka accessed: /logout
Eren accessed: /reset
Annie accessed: /admin
Annie accessed: /admin
Rize accessed: /dashboard
Haruka accessed: /admin
Seras accessed: /settings
Kei accessed: /reset
Kei accessed: /upload
Honami accessed: /settings
Shinji accessed: /404
Honami accessed: /upload
Walter accessed: /upload
Honami accessed: /admin
Rei accessed: /404
Walter accessed: /dashboard
Julia accessed: /settings
Touka accessed: /404
Ken accessed: /download
Spike accessed: /settings
Annie accessed: /upload
Haruka accessed: /settings
Rize accessed: /settings
```