SISTEM OPERASI

Praktikum 3: Operasi Input Output

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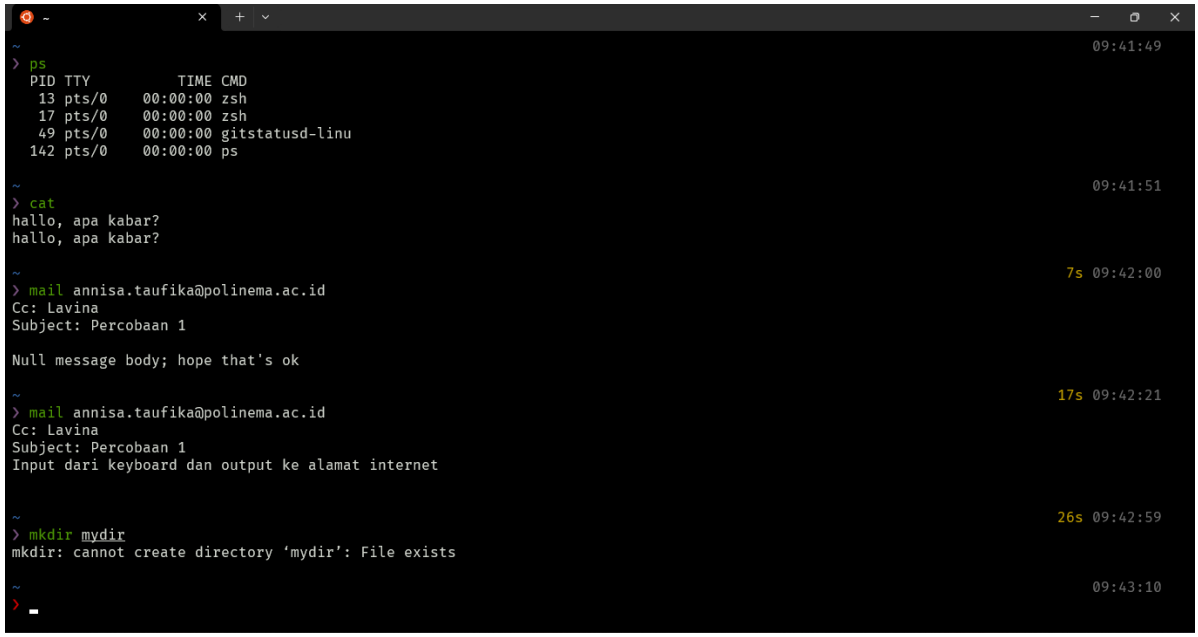
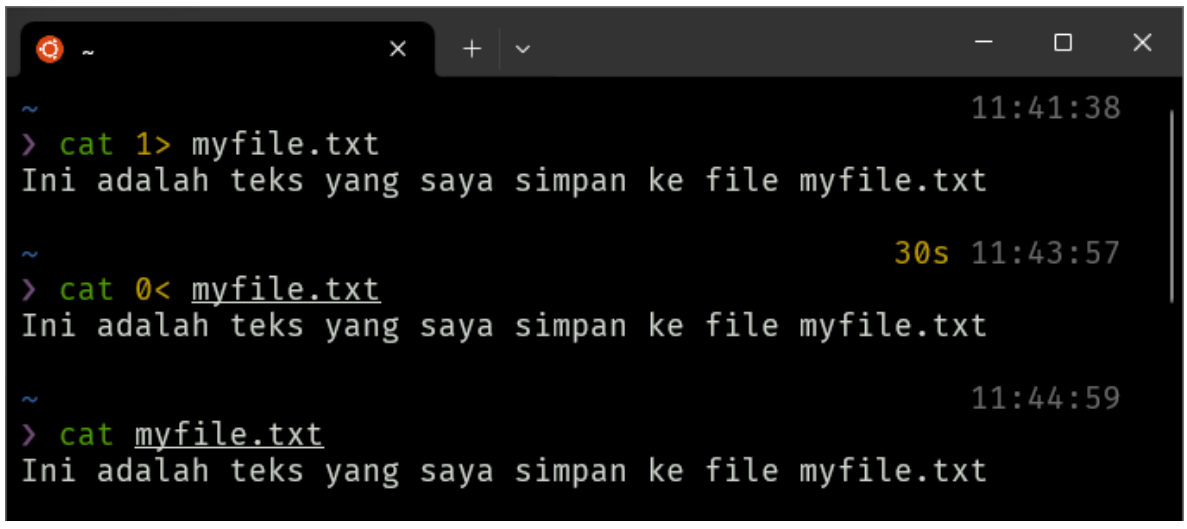
Percobaan 1: File Descriptor



Percobaan 2: Pembelokan (redirection)



```
~                                                    11:45:23
❯ mkdir mydir
mkdir: cannot create directory ‘mydir’: File exists

~                                                    11:45:30
❯ mkdir mydir 2> myerror.txt

~                                                    11:45:46
❯ cat myerror.txt
mkdir: cannot create directory ‘mydir’: File exists

~                                                    11:45:52
❯ ls filebaru
ls: cannot access 'filebaru': No such file or directory

~                                                    11:46:08
❯ ls filebaru 2> out.txt

~                                                    11:46:25
```

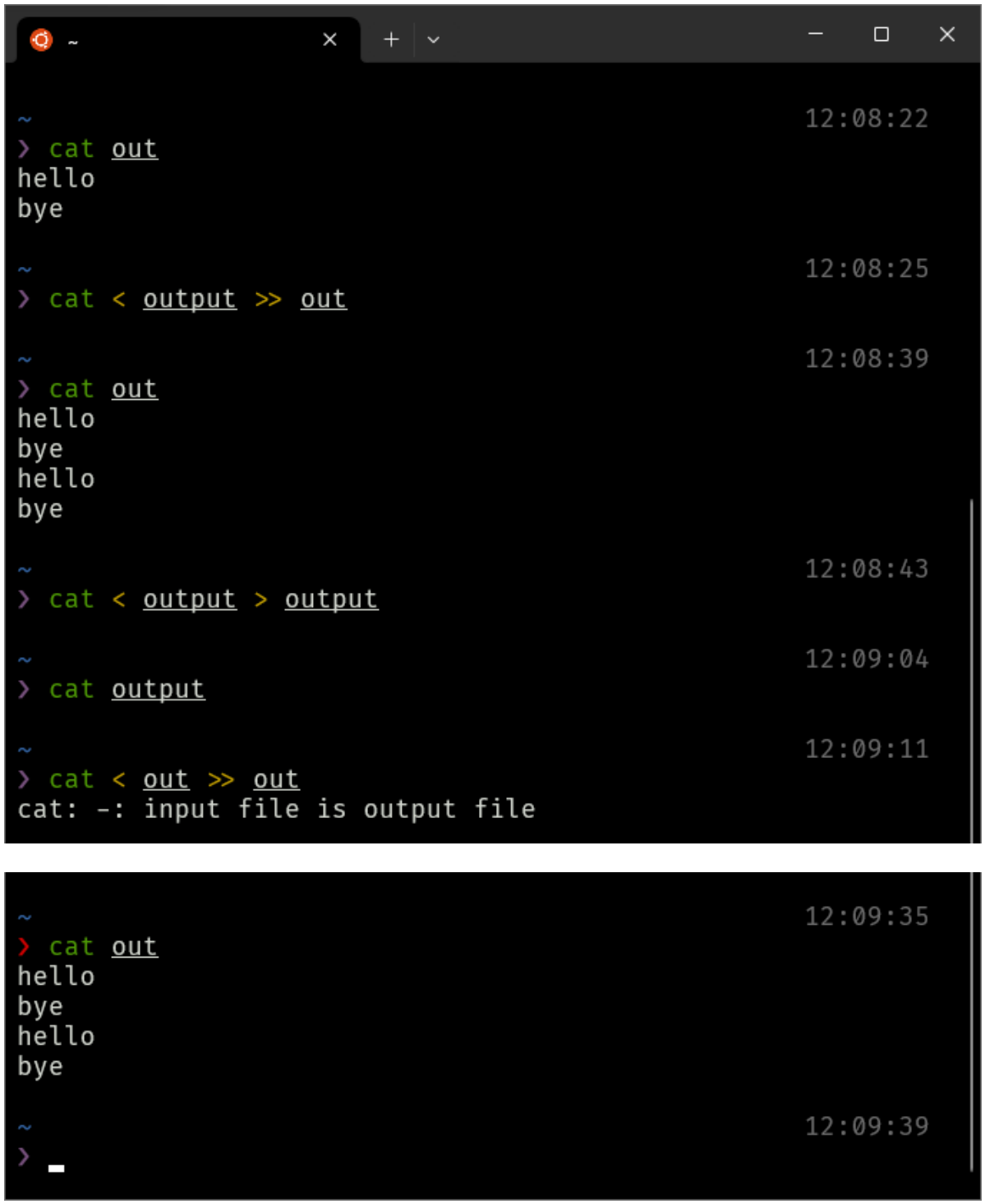
```
~                                                    11:46:25
❯ cat out.txt
ls: cannot access 'filebaru': No such file or directory

~                                                    11:46:31
❯ ls filebaru 2> out.txt 2>&1
ls: cannot access 'filebaru': No such file or directory

~                                                    11:46:58
❯ cat out.txt
ls: cannot access 'filebaru': No such file or directory

~                                                    11:47:09
❯ echo "mencoba menulis file" 1> baru

~                                                    11:50:27
❯ cat filebaru 2> baru 1>&2

~                                                    11:50:52
❯ cat baru
cat: filebaru: No such file or directory
```

```
~                                                    11:50:59
❯ echo "kata pertama" > surat

~                                                    11:51:31
❯ echo "kata kedua" >> surat

~                                                    11:51:44
❯ echo "kata ketiga" >> surat
```

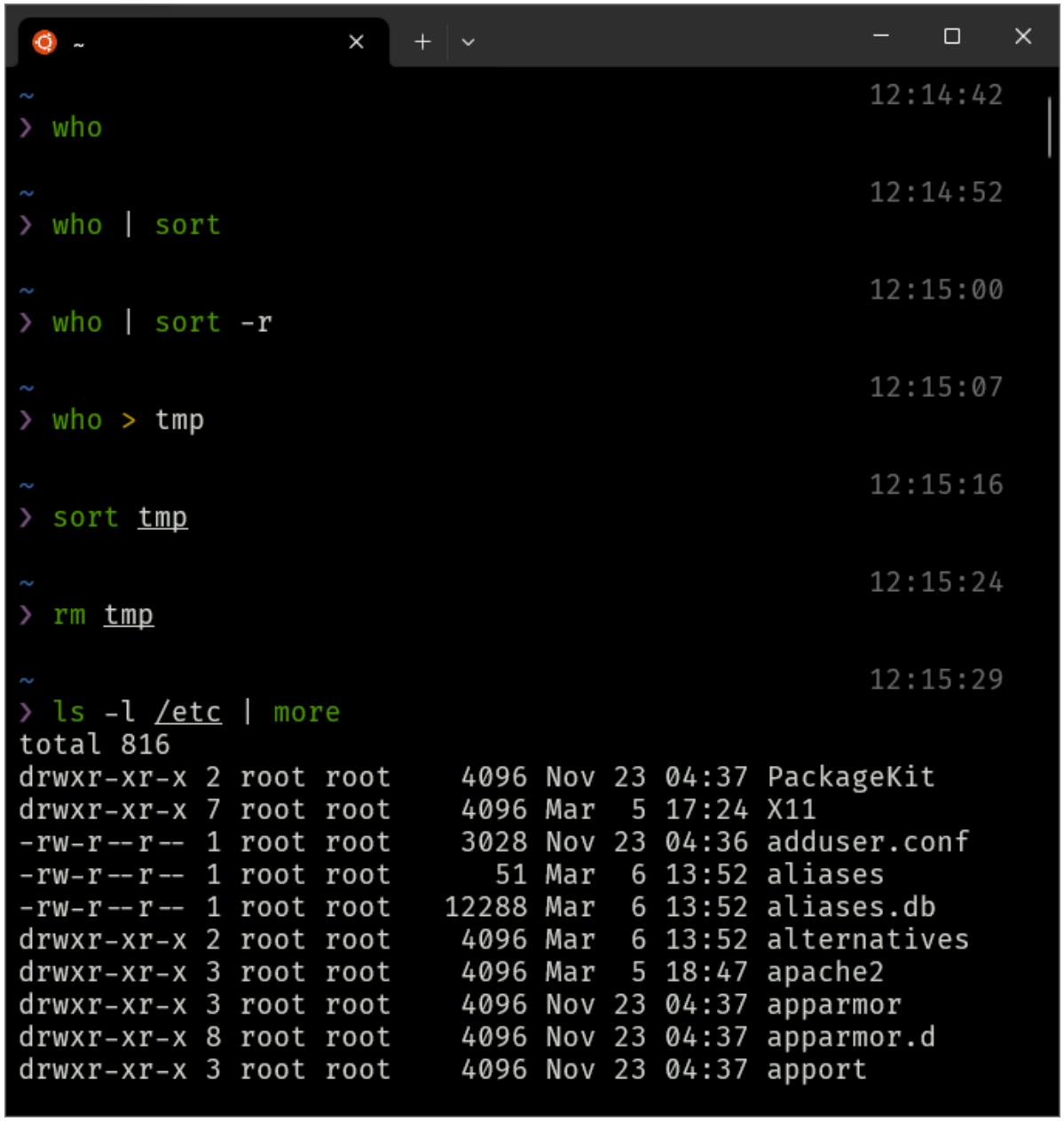
```
~                                                    11:51:44
❯ echo "kata ketiga" >> surat

~                                                    11:51:59
❯ cat surat
kata pertama
kata kedua
kata ketiga

~                                                    11:52:04
❯ echo "kata keempat" > surat

~                                                    11:52:29
❯ cat surat
kata keempat

~                                                    11:52:31
❯ cat <<++
heredoc> Hallo, apa kabar?
heredoc> Baik-baik saja ?
heredoc> Ok !
heredoc> ++
Hallo, apa kabar?
Baik-baik saja ?
Ok !
```

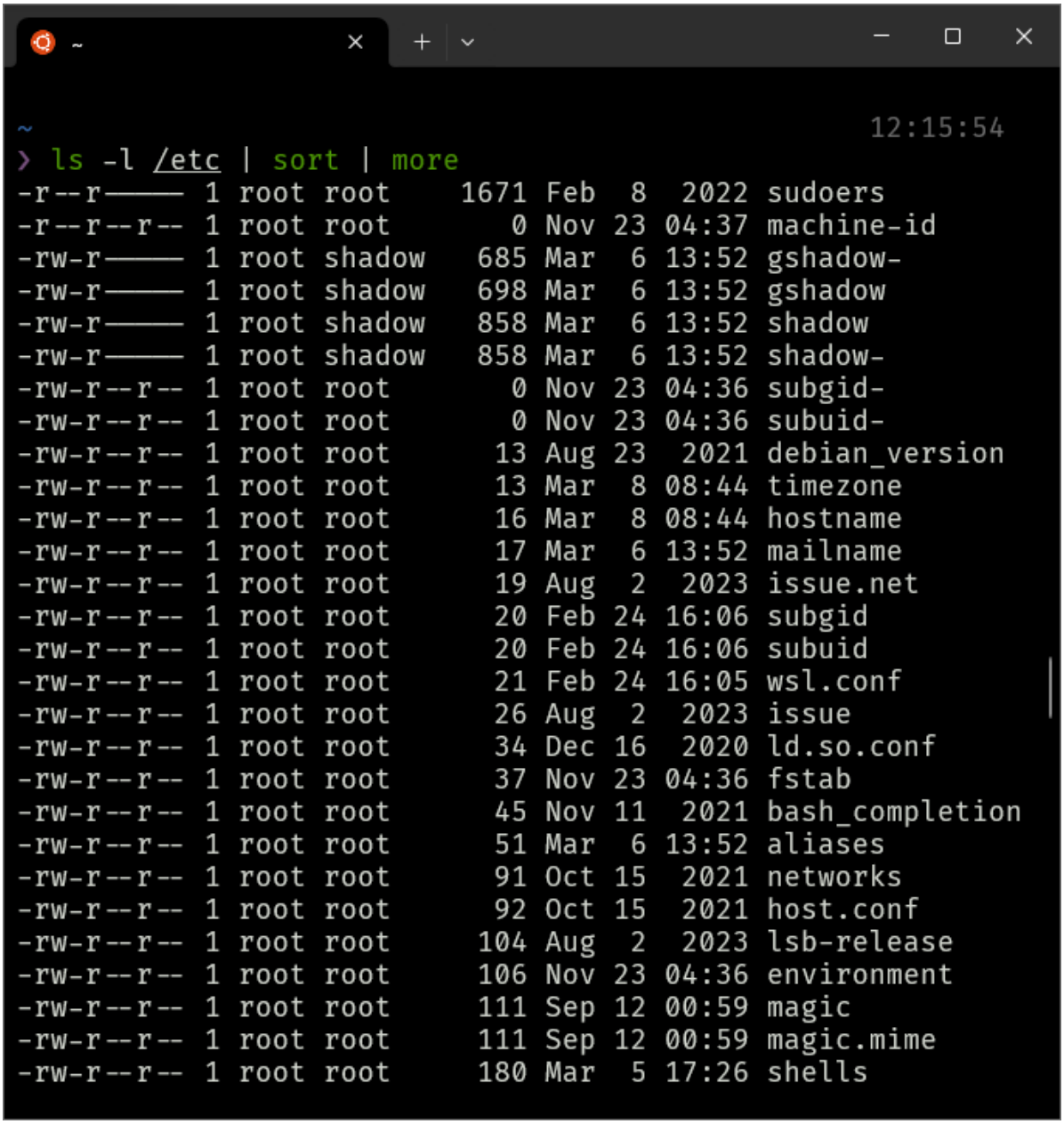
```
~                                                                    11:56:10
❯ cat <<%%%
heredoc> Hallo, apa kabar ?
heredoc> Baik-baik saja ?
heredoc> Ok !
heredoc> %%%
Hallo, apa kabar ?
Baik-baik saja ?
Ok !
```

```
~
                                                                     12:07:10
❯ echo hello
hello

~                                                                    12:07:16
❯ echo hello > output

~                                                                    12:07:24
❯ cat output
hello

~                                                                    12:07:32
❯ echo bye >> output

~                                                                    12:07:42
❯ cat output
hello
bye

~                                                                    12:07:44
❯ cat output
hello
bye

~                                                                    12:07:54
❯ cat < output
hello
bye

~                                                                    12:08:06
❯ cat < output > out
```

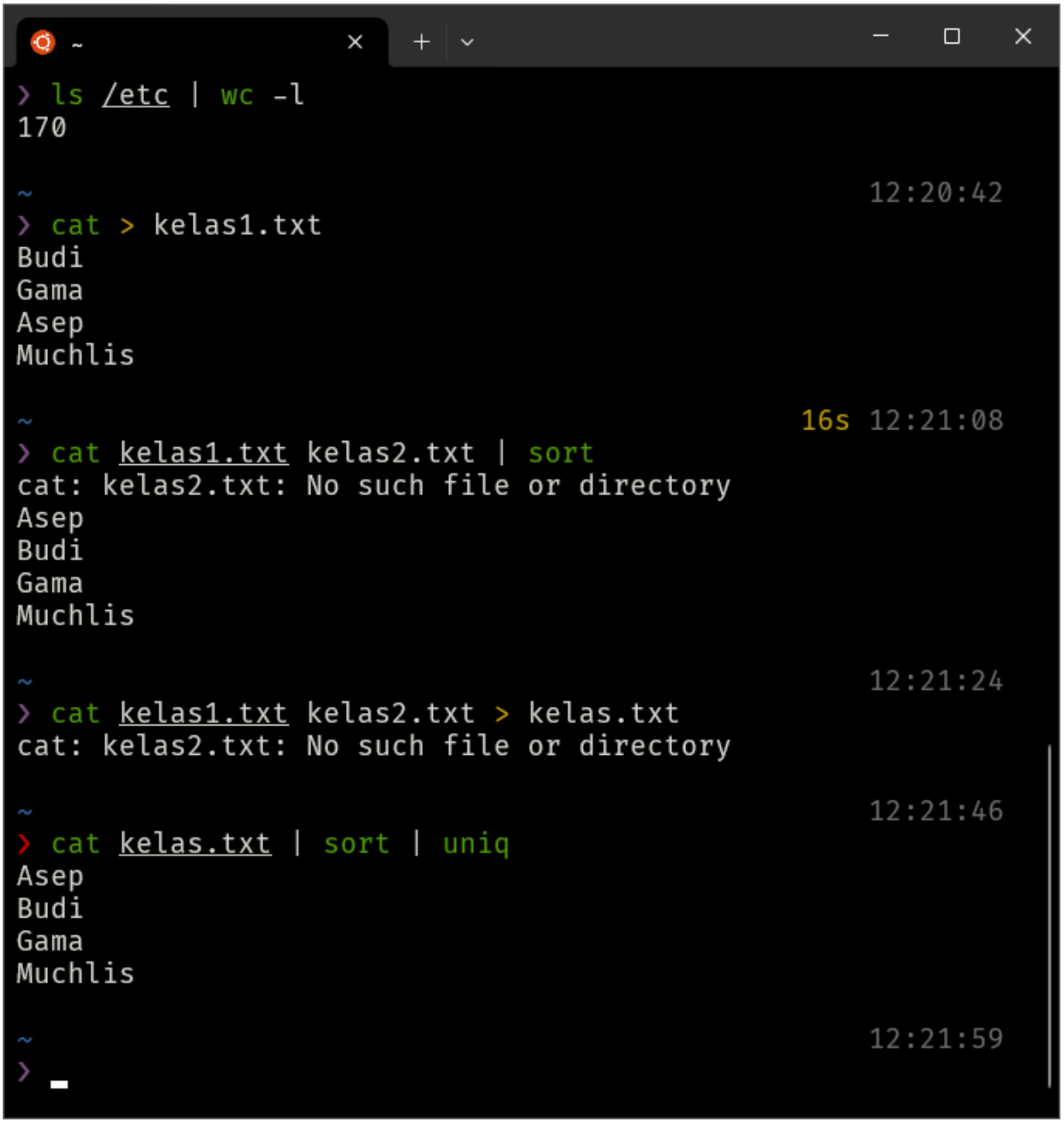

~
12:08:22
cat out
hello
bye
12:08:25
cat < output >> out
12:08:39
cat out
hello
bye
hello
bye
12:08:43
cat < output > output
12:09:04
cat output
12:09:11
cat < out >> out
cat: -: input file is output file
12:09:35
cat out
hello
bye
hello
bye
12:09:39

Percobaan 3: Pipa (pipeline)



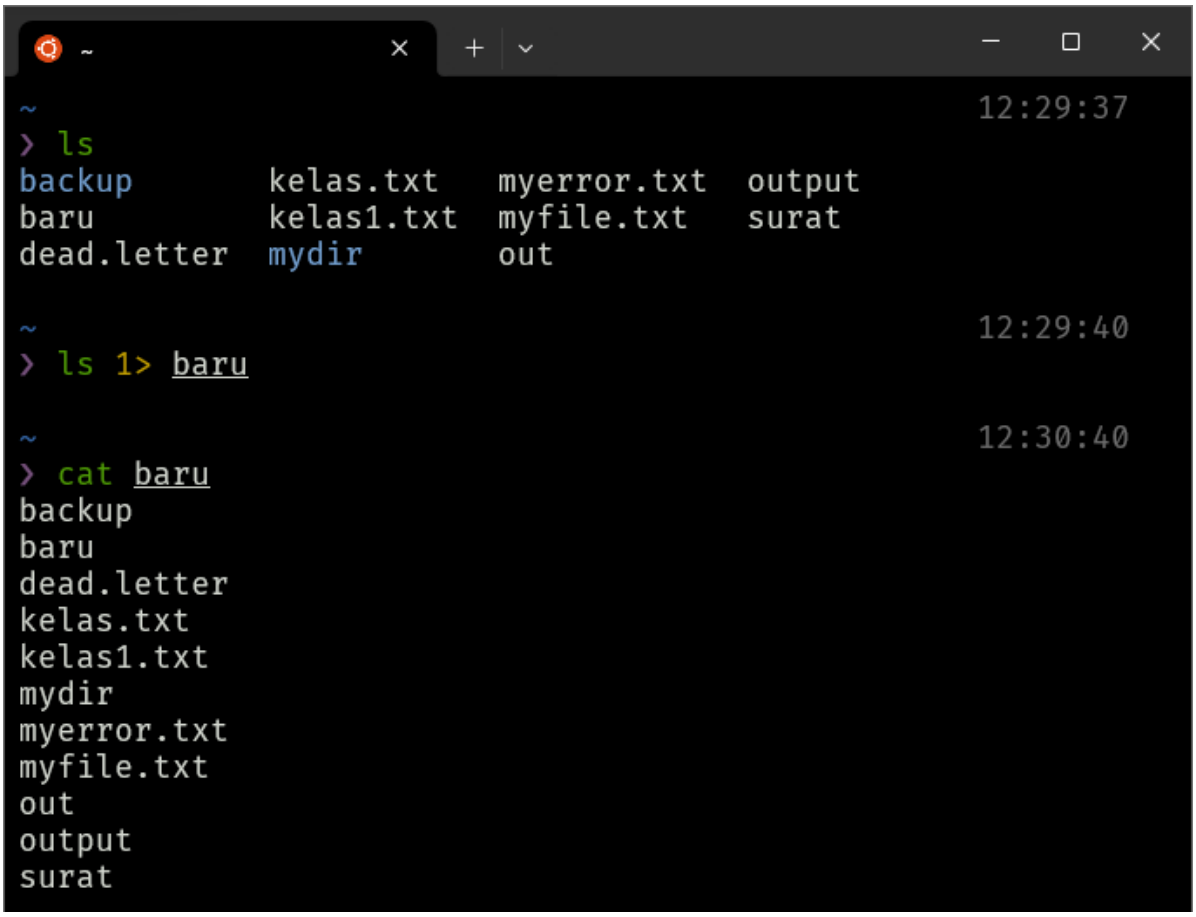


Percobaan 4: Filter

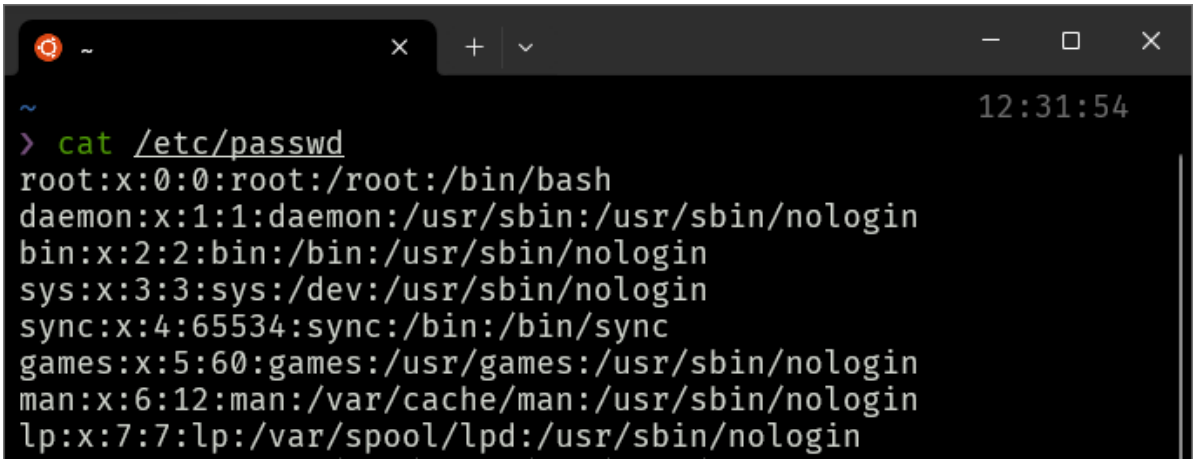

~
❯ ls /etc | wc -l
170
~ 12:20:42
❯ cat > kelas1.txt
Budi
Gama
Asep
Muchlis
~ 16s 12:21:08
❯ cat kelas1.txt kelas2.txt | sort
cat: kelas2.txt: No such file or directory
Asep
Budi
Gama
Muchlis
~ 12:21:24
❯ cat kelas1.txt kelas2.txt > kelas.txt
cat: kelas2.txt: No such file or directory
~ 12:21:46
❯ cat kelas.txt | sort | uniq
Asep
Budi
Gama
Muchlis
~ 12:21:59
❯

LATIHAN:

1. Lihat daftar secara lengkap pada direktori aktif, belokkan tampilan standard output ke file baru.



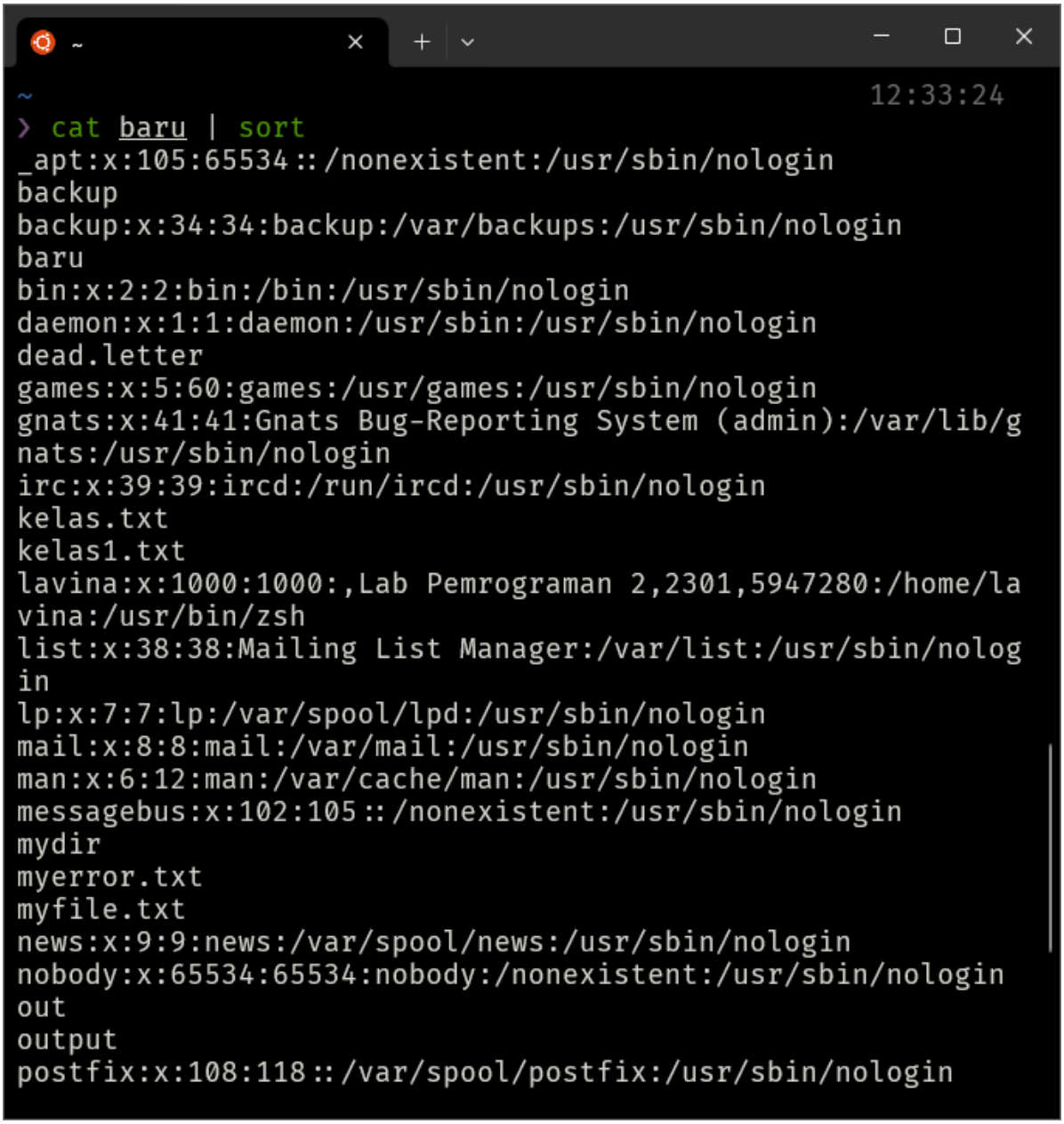
2. Lihat daftar secara lengkap pada direktori /etc/passwd, belokkan tampilan standard output ke file baru tanpa menghapus file baru sebelumnya.



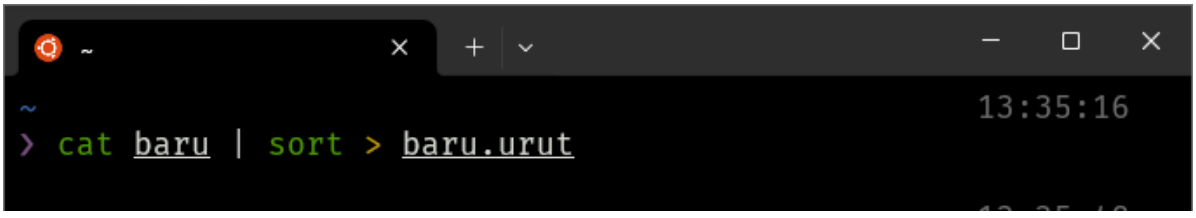
```
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nolog
in
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/g
nats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/ru
n/systemd:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:
/usr/sbin/nologin
```

```
~ ~                                                    12:32:24
❯ cat /etc/passwd 1>> baru

~                                                      12:33:20
❯ cat baru
backup
baru
dead.letter
kelas.txt
kelas1.txt
mydir
myerror.txt
myfile.txt
out
output
surat
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
```

3. Urutkan file baru dengan cara membelokkan standard input.



4. Urutkan file baru dengan cara membelokkan standard input dan standard output ke file baru.urut.



```
~                                                                    13:35:48
❯ cat baru.urut
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
backup
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
baru
bin:x:2:2:bin:/bin:/usr/sbin/nologin
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
dead.letter
games:x:5:60:games:/usr/games:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/g
nats:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
kelas.txt
kelas1.txt
lavina:x:1000:1000:,Lab Pemrograman 2,2301,5947280:/home/la
vina:/usr/bin/zsh
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nolog
in
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
messagebus:x:102:105::/nonexistent:/usr/sbin/nologin
mydir
myerror.txt
myfile.txt
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
```

5. Buatlah direktori latihan2 sebanyak 2 kali dan belokkan standard error ke file rmdirerror.txt.

```
~                                                                    13:35:53
❯ mkdir latihan2

~                                                                    13:37:47
❯ mkdir latihan2
mkdir: cannot create directory ‘latihan2’: File exists

~                                                                    13:37:49
❯ mkdir latihan2 2> rmdirerror.txt

~                                                                    13:38:29
❯ cat rmdirerror.txt
mkdir: cannot create directory ‘latihan2’: File exists
```

6. Urutkan kalimat berikut :

   Jakarta
   Bandung
   Surabaya
   Padang
   Palembang
   Lampung
   Dengan menggunakan notasi here document (<@@@ …@@@)

```
~                                                    13:40:39
❯ sort <<@@@
heredoc> Jakarta
heredoc> Bandung
heredoc> Surabaya
heredoc> Padang
heredoc> Palembang
heredoc> Lampung
heredoc> @@@
Bandung
Jakarta
Lampung
Padang
Palembang
Surabaya
```

7. Hitung jumlah baris, kata dan karakter dari file baru.urut dengan menggunakan filter dan tambahkan data tersebut ke file baru.

```
~                                                    13:46:12
❯ ls baru.urut | wc > baru

~                                                    13:46:42
❯ cat baru
      1       1      10
```

8. Gunakan perintah di bawah ini dan perhatikan hasilnya.

   $ cat > hello.txt
   dog cat
   cat duck

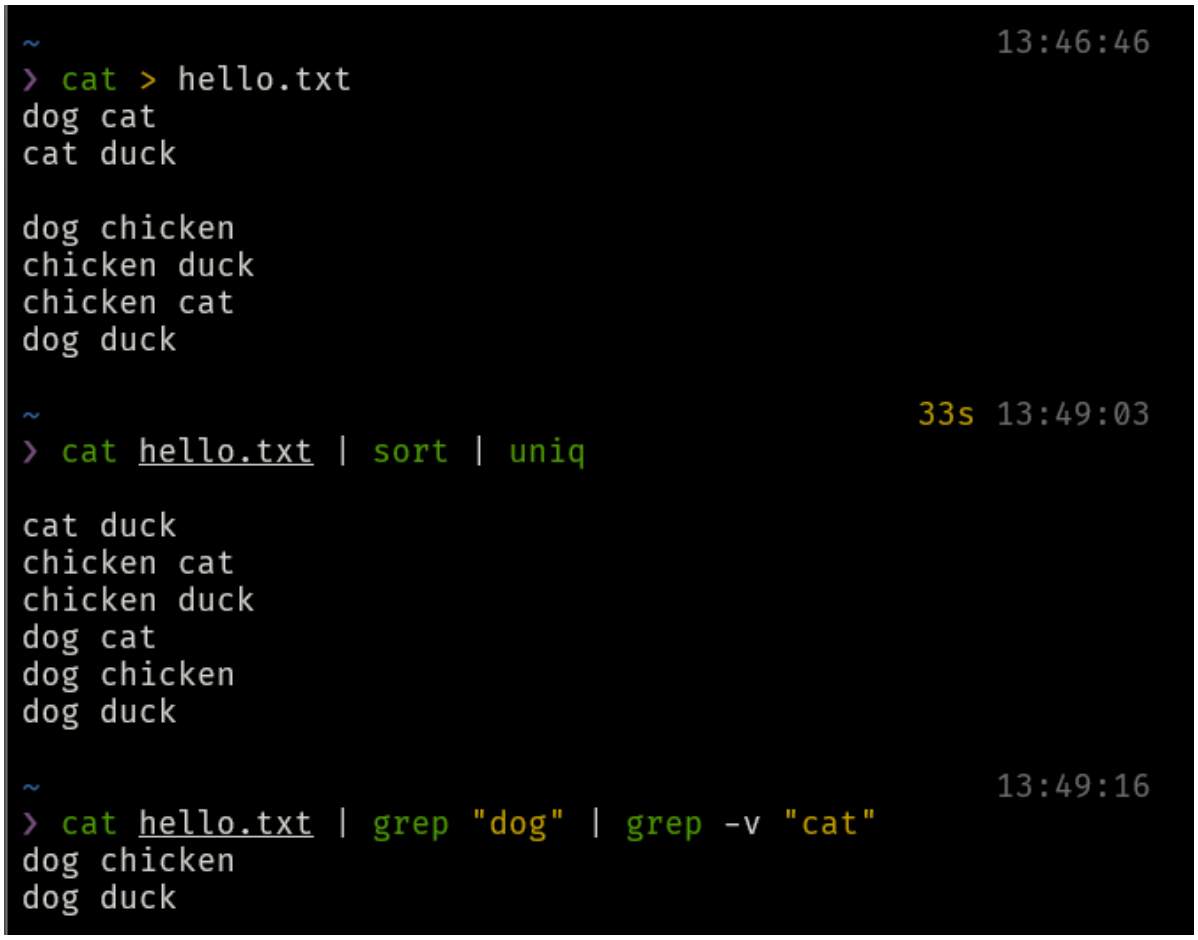
dog chicken

chicken duck

chicken cat

dog duck

[Ctrl-d]

$ cat hello.txt | sort | uniq

$ cat hello.txt | grep “dog” | grep –v “cat”