

Lab 8

Q1

Practice 1

```

1: map@cis106: ~
map@cis106:~$ cat /etc/passwd
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:5:0: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
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/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
_apt:x:42:65534::/nonexistent:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:998:998:systemd Network Management:/:/usr/sbin/nologin
dhpcd:x:100:65534:DHCP Client Daemon:/usr/lib/dhpcd:/bin/false
tss:x:101:103:TPM software stack:/var/lib/tpm:/bin/false
systemd-timesync:x:991:991:systemd Time Synchronization:/:/usr/sbin/nologin
messagebus:x:990:990:System Message Bus:/nonexistent:/usr/sbin/nologin
dnsmasq:x:999:65534:dnsmasq:/var/lib/misc:/usr/sbin/nologin
avahi:x:102:107:Avahi mDNS daemon:/run/avahi-daemon:/usr/sbin/nologin
speech-dispatcher:x:103:29:Speech Dispatcher:/run/speech-dispatcher:/bin/false
usbmux:x:104:46:usbmux daemon:/var/lib/usbmux:/usr/sbin/nologin
cups-pk-helper:x:105:108:user for cups-pk-helper service:/nonexistent:/usr/sbin/nologin
fwupd-refresh:x:989:989:Firmware update daemon:/var/lib/fwupd:/usr/sbin/nologin
geoclue:x:106:110::/var/lib/geoclue:/usr/sbin/nologin
gnome-remote-desktop:x:988:988:GNOME Remote Desktop:/var/lib/gnome-remote-desktop:/usr/sbin/nologin
saned:x:107:111::/var/lib/saned:/usr/sbin/nologin
polkitd:x:987:987:User for polkitd:/:/usr/sbin/nologin
rtkit:x:108:112:RealtimeKit:/proc:/usr/sbin/nologin
colord:x:109:113:colord colour management daemon:/var/lib/colord:/usr/sbin/nologin
Debian-gdm:x:110:114:Gnome Display Manager:/var/lib/gdm3:/bin/false
map:x:1000:1000:Miguel Ponce,,,:/home/map:/bin/bash
flatpak:x:111:115:Flatpak system-wide installation helper:/nonexistent:/usr/sbin/nologin

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1: map@cis106: ~
vboxadd:x:997:1::/var/run/vboxadd:/bin/false
map@cis106:~$ tac /etc/passwd
vboxadd:x:997:1::/var/run/vboxadd:/bin/false
_flatpak:x:111:115:Flatpak system-wide installation helper:/nonexistent:/usr/sbin/nologin
map:x:1000:1000:Miguel Ponce,,,:/home/map:/bin/bash
Debian-gdm:x:110:114:Gnome Display Manager:/var/lib/gdm3:/bin/false
colord:x:109:113:colord colour management daemon:/var/lib/colord:/usr/sbin/nologin
rtkit:x:108:112:RealtimeKit:/proc:/usr/sbin/nologin
polkitd:x:987:987:User for polkitd:/:/usr/sbin/nologin
saned:x:107:111::/var/lib/saned:/usr/sbin/nologin
gnome-remote-desktop:x:988:988:GNOME Remote Desktop:/var/lib/gnome-remote-desktop:/usr/sbin/nologin
geoclue:x:106:110::/var/lib/geoclue:/usr/sbin/nologin
fwupd-refresh:x:989:989:Firmware update daemon:/var/lib/fwupd:/usr/sbin/nologin
cups-pk-helper:x:105:108:user for cups-pk-helper service:/nonexistent:/usr/sbin/nologin
usbmux:x:104:46:usbmux daemon:/var/lib/usbmux:/usr/sbin/nologin
speech-dispatcher:x:103:29:Speech Dispatcher:/run/speech-dispatcher:/bin/false
avahi:x:102:107:Avahi mDNS daemon:/run/avahi-daemon:/usr/sbin/nologin
dnsmasq:x:999:65534:dnsmasq:/var/lib/misc:/usr/sbin/nologin
messagebus:x:990:990:System Message Bus:/nonexistent:/usr/sbin/nologin
systemd-timesync:x:991:991:systemd Time Synchronization:/:/usr/sbin/nologin
tss:x:101:103:TPM software stack:/var/lib/tpm:/bin/false
dhpcd:x:100:65534:DHCP Client Daemon:/usr/lib/dhpcd:/bin/false
systemd-network:x:998:998:systemd Network Management:/:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin

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nobody:x:0:0::nobody:/nonexistent:/usr/sbin/nologin
_apt:x:42:65534::/nonexistent:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
games:x:5:60:games:/usr/games:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin-sync
sys:x:3:3:sys:/dev:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
```

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1/1 + ⌂ ⌂ Tilix: map@cis106: ~
1: map@cis106: ~
bin:x:2:2:bin:/bin:/usr/sbin/nologin
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
root:x:0:0:root:/root:/bin/bash
map@cis106:~$ cat -nE /etc/passwd
 1  root:x:0:0:root:/root:/bin/bash$
 2  daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin$
 3  bin:x:2:2:bin:/bin:/usr/sbin/nologin$
 4  sys:x:3:3:sys:/dev:/usr/sbin/nologin$
 5  sync:x:4:65534:sync:/bin:/bin-sync$
 6  games:x:5:60:games:/usr/games:/usr/sbin/nologin$
 7  man:x:6:12:man:/var/cache/man:/usr/sbin/nologin$
 8  lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin$
 9  mail:x:8:8:mail:/var/mail:/usr/sbin/nologin$
10  news:x:9:9:news:/var/spool/news:/usr/sbin/nologin$
11  uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin$
12  proxy:x:13:13:proxy:/bin:/usr/sbin/nologin$
13  www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin$
14  backup:x:34:34:backup:/var/backups:/usr/sbin/nologin$
15  list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin$
16  irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin$
17  _apt:x:42:65534::/nonexistent:/usr/sbin/nologin$
18  nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin$
19  systemd-network:x:998:998:systemd Network Management:/:/usr/sbin/nologin$
20  dhcpcd:x:100:65534:DHCP Client Daemon:/usr/lib/dhcpcd:/bin/false$
21  tss:x:101:103:TPM software stack:/var/lib/tpm:/bin/false$
22  systemd-timesync:x:991:991:systemd Time Synchronization:/:/usr/sbin/nologin$
23  messagebus:x:990:990:System Message Bus:/nonexistent:/usr/sbin/nologin$
24  dnsmasq:x:999:65534:dnsmasq:/var/lib/misc:/usr/sbin/nologin$
25  avahi:x:102:107:Avahi mDNS daemon:/run/avahi-daemon:/usr/sbin/nologin$
26  speech-dispatcher:x:103:29:Speech Dispatcher:/run/speech-dispatcher:/bin/false$
27  usbmux:x:104:46:usbmux daemon:/var/lib/usbmux:/usr/sbin/nologin$
28  cups-pk-helper:x:105:108:user for cups-pk-helper service:/nonexistent:/usr/sbin/nologin
$ 
29  fwupd-refresh:x:989:989:Firmware update daemon:/var/lib/fwupd:/usr/sbin/nologin$
30  geoclue:x:106:110::/var/lib/geoclue:/usr/sbin/nologin$
31  gnome-remote-desktop:x:988:988:GNOME Remote Desktop:/var/lib/gnome-remote-desktop:/usr/
sbin/nologin$
32  saned:x:107:111::/var/lib/saned:/usr/sbin/nologin$
33  polkittd:x:987:987:User for polkittd:/:/usr/sbin/nologin$
34  rtkit:x:108:112:RealtimeKit:/proc:/usr/sbin/nologin$
```

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1/1 ▾ + ⌂ ⌂ Tilix: map@cis106: ~
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1: map@cis106: ~ ↴
11 uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin$
12 proxy:x:13:13:proxy:/bin:/usr/sbin/nologin$
13 www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin$
14 backup:x:34:34:backup:/var/backups:/usr/sbin/nologin$
15 list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin$
16 irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin$
17 _apt:x:42:65534::/nonexistent:/usr/sbin/nologin$
18 nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin$
19 systemd-network:x:998:998:systemd Network Management:/:/usr/sbin/nologin$
20 dhcpcd:x:100:65534:DHCP Client Daemon:/usr/lib/dhcpcd:/bin/false$
```

21 tss:x:101:103:TPM software stack:/var/lib/tpm:/bin/false\$

22 systemd-timesync:x:991:991:systemd Time Synchronization:/:/usr/sbin/nologin\$

23 messagebus:x:990:990:System Message Bus:/nonexistent:/usr/sbin/nologin\$

24 dnsmasq:x:999:65534:dnsmasq:/var/lib/misc:/usr/sbin/nologin\$

25 avahi:x:102:107:Avahi mDNS daemon:/run/avahi-daemon:/usr/sbin/nologin\$

26 speech-dispatcher:x:103:29:Speech Dispatcher:/run/speech-dispatcher:/bin/false\$

27 usbmux:x:104:46:usbmux daemon:/var/lib/usbmux:/usr/sbin/nologin\$

28 cups-pk-helper:x:105:108:user for cups-pk-helper service:/nonexistent:/usr/sbin/nologin\$

29 fwupd-refresh:x:989:989:Firmware update daemon:/var/lib/fwupd:/usr/sbin/nologin\$

30 geoclue:x:106:110::/var/lib/geoclue:/usr/sbin/nologin\$

31 gnome-remote-desktop:x:988:988:GNOME Remote Desktop:/var/lib/gnome-remote-desktop:/usr/sbin/nologin\$

32 saned:x:107:111::/var/lib/saned:/usr/sbin/nologin\$

33 polkitd:x:987:987:User for polkitd:/:/usr/sbin/nologin\$

34 rtkit:x:108:112:RealtimeKit:/proc:/usr/sbin/nologin\$

35 colord:x:109:113:colord colour management daemon:/var/lib/colord:/usr/sbin/nologin\$

36 Debian-gdm:x:110:114:Gnome Display Manager:/var/lib/gdm3:/bin/false\$

37 map:x:1000:1000:Miguel Ponce,,,,:/home/map:/bin/bash\$

38 _flatpak:x:111:115:Flatpak system-wide installation helper:/nonexistent:/usr/sbin/nologin\$

39 vboxadd:x:997:1::/var/run/vboxadd:/bin/false\$

```
map@cis106:~$ head -n 5 /etc/passwd
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
map@cis106:~$ _
```

```
1/1 ▾ + ⌂ ⌂ Tilix: map@cis106: ~ Q ⌂ - ⌂ x
1: map@cis106: ~ ▾
17 _apt:x:42:65534::/nonexistent:/usr/sbin/nologin$
18 nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin$
19 systemd-network:x:998:998:systemd Network Management:/:/usr/sbin/nologin$
20 dhcpcd:x:100:65534:DHCP Client Daemon:/usr/lib/dhcpcd:/bin/false$
21 tss:x:101:103:TPM software stack:/var/lib/tpm:/bin/false$
22 systemd-timesync:x:991:991:systemd Time Synchronization:/:/usr/sbin/nologin$
23 messagebus:x:990:990:System Message Bus:/nonexistent:/usr/sbin/nologin$
24 dnsmasq:x:999:65534:dnsmasq:/var/lib/misc:/usr/sbin/nologin$
25 avahi:x:102:107:Avahi mDNS daemon:/run/avahi-daemon:/usr/sbin/nologin$
26 speech-dispatcher:x:103:29:Speech Dispatcher:/run/speech-dispatcher:/bin/false$
27 usbmux:x:104:46:usbmux daemon:/var/lib/usbmux:/usr/sbin/nologin$
28 cups-pk-helper:x:105:108:user for cups-pk-helper service:/nonexistent:/usr/sbin/nologin
$ 29 fwupd-refresh:x:989:989:Firmware update daemon:/var/lib/fwupd:/usr/sbin/nologin$
30 geoclue:x:106:110::/var/lib/geoclue:/usr/sbin/nologin$
31 gnome-remote-desktop:x:988:988:GNOME Remote Desktop:/var/lib/gnome-remote-desktop:/usr/
sbin/nologin$
32 saned:x:107:111::/var/lib/saned:/usr/sbin/nologin$
33 polkitd:x:987:987:User for polkitd:/:/usr/sbin/nologin$
34 rtkit:x:108:112:RealtimeKit:/proc:/usr/sbin/nologin$
35 colord:x:109:113:colord colour management daemon:/var/lib/colord:/usr/sbin/nologin$
36 Debian-gdm:x:110:114:Gnome Display Manager:/var/lib/gdm3:/bin/false$
37 map:x:1000:1000:Miguel Ponce,,,,:/home/map:/bin/bash$
38 _flatpak:x:111:115:Flatpak system-wide installation helper:/nonexistent:/usr/sbin/nolog
in$
39 vboxadd:x:997:1::/var/run/vboxadd:/bin/false$
map@cis106:~$ head -n 5 /etc/passwd
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
map@cis106:~$ tail -n 5 /etc/passwd
colord:x:109:113:colord colour management daemon:/var/lib/colord:/usr/sbin/nologin
Debian-gdm:x:110:114:Gnome Display Manager:/var/lib/gdm3:/bin/false
map:x:1000:1000:Miguel Ponce,,,,:/home/map:/bin/bash
_flatpak:x:111:115:Flatpak system-wide installation helper:/nonexistent:/usr/sbin/nologin
vboxadd:x:997:1::/var/run/vboxadd:/bin/false
map@cis106:~$ _
```

```
1/1 + ⌂ ⌂ Tilix: map@cis106: ~ Q ⌂ x
1: map@cis106: ~
19  systemd-network:x:998:998:systemd Network Management:/usr/sbin/nologin$
20  dhcpcd:x:100:65534:DHCP Client Daemon:/usr/lib/dhcpcd:/bin/false$
21  tss:x:101:103:TPM software stack:/var/lib/tpm:/bin/false$
22  systemd-timesync:x:991:991:systemd Time Synchronization:/usr/sbin/nologin$
23  messagebus:x:990:990:System Message Bus:/nonexistent:/usr/sbin/nologin$
24  dnsmasq:x:999:65534:dnsmasq:/var/lib/misc:/usr/sbin/nologin$
25  avahi:x:102:107:Avahi mDNS daemon:/run/avahi-daemon:/usr/sbin/nologin$
26  speech-dispatcher:x:103:29:Speech Dispatcher:/run/speech-dispatcher:/bin/false$
27  usbmux:x:104:46:usbmux daemon:/var/lib/usbmux:/usr/sbin/nologin$
28  cups-pk-helper:x:105:108:user for cups-pk-helper service:/nonexistent:/usr/sbin/nologin
$  fwupd-refresh:x:989:989:Firmware update daemon:/var/lib/fwupd:/usr/sbin/nologin$
30  geoclue:x:106:110::/var/lib/geoclue:/usr/sbin/nologin$
31  gnome-remote-desktop:x:988:988:GNOME Remote Desktop:/var/lib/gnome-remote-desktop:/usr/
sbin/nologin$
32  saned:x:107:111:/var/lib/saned:/usr/sbin/nologin$
33  polkitd:x:987:987:User for polkitd:/usr/sbin/nologin$
34  rtkit:x:108:112:RealtimeKit:/proc:/usr/sbin/nologin$
35  colord:x:109:113:colord colour management daemon:/var/lib/colord:/usr/sbin/nologin$
36  Debian-gdm:x:110:114:Gnome Display Manager:/var/lib/gdm3:/bin/false$
37  map:x:1000:1000:Miguel Ponce,,,:/home/map:/bin/bash$
38  _flatpak:x:111:115:Flatpak system-wide installation helper:/nonexistent:/usr/sbin/nolog
in$
39  vboxadd:x:997:1::/var/run/vboxadd:/bin/false$
map@cis106:~$ head -n 5 /etc/passwd
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
map@cis106:~$ tail -n 5 /etc/passwd
colord:x:109:113:colord colour management daemon:/var/lib/colord:/usr/sbin/nologin
Debian-gdm:x:110:114:Gnome Display Manager:/var/lib/gdm3:/bin/false
map:x:1000:1000:Miguel Ponce,,,:/home/map:/bin/bash
_flatpak:x:111:115:Flatpak system-wide installation helper:/nonexistent:/usr/sbin/nologin
vboxadd:x:997:1::/var/run/vboxadd:/bin/false
map@cis106:~$ tail -1 /etc/passwd
vboxadd:x:997:1::/var/run/vboxadd:/bin/false
map@cis106:~$ _
```

```
1/1 ▾ + ⌂ ⌂ Tilix: map@cis106: ~ Q ⌂ - ⌂ x
1: map@cis106: ~
21 tss:x:101:103:TPM software stack:/var/lib/tpm:/bin/false$
22 systemd-timesync:x:991:991:systemd Time Synchronization:/usr/sbin/nologin$
23 messagebus:x:990:990:System Message Bus:/nonexistent:/usr/sbin/nologin$
24 dnsmasq:x:999:65534:dnsmasq:/var/lib/misc:/usr/sbin/nologin$
25 avahi:x:102:107:Avahi mDNS daemon:/run/avahi-daemon:/usr/sbin/nologin$
26 speech-dispatcher:x:103:29:Speech Dispatcher:/run/speech-dispatcher:/bin/false$
27 usbmux:x:104:46:usbmux daemon:/var/lib/usbmux:/usr/sbin/nologin$
28 cups-pk-helper:x:105:108:user for cups-pk-helper service:/nonexistent:/usr/sbin/nologin
$ 29 fwupd-refresh:x:989:989:Firmware update daemon:/var/lib/fwupd:/usr/sbin/nologin$
30 geoclue:x:106:110::/var/lib/geoclue:/usr/sbin/nologin$
31 gnome-remote-desktop:x:988:988:GNOME Remote Desktop:/var/lib/gnome-remote-desktop:/usr/
sbin/nologin$
32 saned:x:107:111::/var/lib/saned:/usr/sbin/nologin$
33 polkitd:x:987:987:User for polkitd:/usr/sbin/nologin$
34 rtkit:x:108:112:RealtimeKit:/proc:/usr/sbin/nologin$
35 colord:x:109:113:colord colour management daemon:/var/lib/colord:/usr/sbin/nologin$
36 Debian-gdm:x:110:114:Gnome Display Manager:/var/lib/gdm3:/bin/false$
37 map:x:1000:1000:Miguel Ponce,,,,:/home/map:/bin/bash$
38 _flatpak:x:111:115:Flatpak system-wide installation helper:/nonexistent:/usr/sbin/nolog
in$
39 vboxadd:x:997:1::/var/run/vboxadd:/bin/false$
map@cis106:~$ head -n 5 /etc/passwd
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
map@cis106:~$ tail -n 5 /etc/passwd
colord:x:109:113:colord colour management daemon:/var/lib/colord:/usr/sbin/nologin
Debian-gdm:x:110:114:Gnome Display Manager:/var/lib/gdm3:/bin/false
map:x:1000:1000:Miguel Ponce,,,,:/home/map:/bin/bash
_flatpak:x:111:115:Flatpak system-wide installation helper:/nonexistent:/usr/sbin/nologin
vboxadd:x:997:1::/var/run/vboxadd:/bin/false
map@cis106:~$ tail -1 /etc/passwd
vboxadd:x:997:1::/var/run/vboxadd:/bin/false
map@cis106:~$ head -1 /etc/passwd
root:x:0:0:root:/root:/bin/bash
map@cis106:~$ _
```

```
1/1 + ⌂ ⌄ Tilix: map@cis106: ~ Q ⌄ x
1: map@cis106: ~
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
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15844
15845
map@cis106:~$ _
```

Practice 2

```
1: map@cis106: ~ ↴  
Tilix: map@cis106: ~  
  
map@cis106:~$ cut -d":" -f1 /etc/passwd  
root  
daemon  
bin  
sys  
sync  
games  
man  
lp  
mail  
news  
uucp  
proxy  
www-data  
backup  
list  
irc  
_apt  
nobody  
systemd-network  
dhpcd  
tss  
systemd-timesync  
messagebus  
dnsmasq  
avahi  
speech-dispatcher  
usbmux  
cups-pk-helper  
fwupd-refresh  
geoclue  
gnome-remote-desktop  
saned  
polkitd  
rtkit  
colord  
Debian-gdm  
map  
_flatpak  
vboxadd
```

```
1: map@cis106: ~ ↴  
Tilix: map@cis106: ~  
  
_flatpak  
vboxadd  
map@cis106:~$ cut -d":" -f1,6 /etc/passwd  
root:/root  
daemon:/usr/sbin  
bin:/bin  
sys:/dev  
sync:/bin  
games:/usr/games  
man:/var/cache/man  
lp:/var/spool/lpd  
mail:/var/mail  
news:/var/spool/news  
uucp:/var/spool/uucp  
proxy:/bin  
www-data:/var/www  
backup:/var/backups  
list:/var/list  
irc:/run/ircd  
_apt:/nonexistent  
nobody:/nonexistent  
systemd-network:/  
dhpcd:/usr/lib/dhpcd  
tss:/var/lib/tpm  
systemd-timesync:/
```

```
systemd-timesyncd  
messagebus:/nonexistent  
dnsmasq:/var/lib/misc  
avahi:/run/avahi-daemon  
speech-dispatcher:/run/speech-dispatcher  
usbmux:/var/lib/usbmux  
cups-pk-helper:/nonexistent  
fwupd-refresh:/var/lib/fwupd  
geoclue:/var/lib/geoclue  
gnome-remote-desktop:/var/lib/gnome-remote-desktop  
saned:/var/lib/saned  
polkitd:/  
rtkit:/proc  
colord:/var/lib/colord  
Debian-gdm:/var/lib/gdm3  
map:/home/map
```

Tilix: map@cis106: ~

```
1: map@cis106: ~   
  
map@cis106:~$ cut -d ":" -f 1,6,7 --output-delimiter=" " > "/etc/passwd  
root > /root > /bin/bash  
daemon > /usr/sbin > /usr/sbin/nologin  
bin > /bin > /usr/sbin/nologin  
sys > /dev > /usr/sbin/nologin  
sync > /bin > /bin/sync  
games > /usr/games > /usr/sbin/nologin  
man > /var/cache/man > /usr/sbin/nologin  
lp > /var/spool/lpd > /usr/sbin/nologin  
mail > /var/mail > /usr/sbin/nologin  
news > /var/spool/news > /usr/sbin/nologin  
uucp > /var/spool/uucp > /usr/sbin/nologin  
proxy > /bin > /usr/sbin/nologin  
www-data > /var/www > /usr/sbin/nologin  
backup > /var/backups > /usr/sbin/nologin  
list > /var/list > /usr/sbin/nologin  
irc > /run/ircd > /usr/sbin/nologin  
_apt > /nonexistent > /usr/sbin/nologin  
nobody > /nonexistent > /usr/sbin/nologin  
systemd-network > / > /usr/sbin/nologin  
dhcpcd > /usr/lib/dhcpcd > /bin/false  
tss > /var/lib/tpm > /bin/false  
systemd-timesync > / > /usr/sbin/nologin  
messagebus > /nonexistent > /usr/sbin/nologin  
dnsmasq > /var/lib/misc > /usr/sbin/nologin  
avahi > /run/avahi-daemon > /usr/sbin/nologin  
speech-dispatcher > /run/speech-dispatcher > /bin/false  
usbmux > /var/lib/usbmux > /usr/sbin/nologin  
cups-pk-helper > /nonexistent > /usr/sbin/nologin  
fwupd-refresh > /var/lib/fwupd > /usr/sbin/nologin  
geoclue > /var/lib/geoclue > /usr/sbin/nologin  
gnome-remote-desktop > /var/lib/gnome-remote-desktop > /usr/sbin/nologin  
saned > /var/lib/saned > /usr/sbin/nologin  
polkitd > / > /usr/sbin/nologin  
rtkit > /proc > /usr/sbin/nologin  
colord > /var/lib/colord > /usr/sbin/nologin  
Debian-gdm > /var/lib/gdm3 > /bin/false  
map > /home/map > /bin/bash  
_flatpak > /nonexistent > /usr/sbin/nologin  
vboxadd > /var/run/vboxadd > /bin/false
```

```
1: map@cis106: ~
map@cis106:~$ cut -d";" -f1 ~/Documents/sample_files/Csv/cereal.csv
name
String
100% Bran
100% Natural Bran
All-Bran
All-Bran with Extra Fiber
Almond Delight
Apple Cinnamon Cheerios
Apple Jacks
Basic 4
Bran Chex
Bran Flakes
Cap'n'Crunch
Cheerios
Cinnamon Toast Crunch
Clusters
Cocoa Puffs
Corn Chex
Corn Flakes
Corn Pops
Count Chocula
Cracklin' Oat Bran
Cream of Wheat (Quick)
Crispix
Crispy Wheat & Raisins
Double Chex
Froot Loops
Frosted Flakes
Frosted Mini-Wheats
Fruit & Fibre Dates, Walnuts, and Oats
Fruitful Bran
Fruity Pebbles
Golden Crisp
Golden Grahams
Grape Nuts Flakes
Grape-Nuts
Great Grains Pecan
Honey Graham Ohs
```

```
1: map@cis106: ~
map@cis106:~$ cut -d";" -f1,4 --output-delimiter=" calories = " ~/Documents/sample_files/Csv/cereal.csv
name calories = calories
String calories = Int
100% Bran calories = 70
100% Natural Bran calories = 120
All-Bran calories = 70
All-Bran with Extra Fiber calories = 50
Almond Delight calories = 110
Apple Cinnamon Cheerios calories = 110
Apple Jacks calories = 110
Basic 4 calories = 130
Bran Chex calories = 90
Bran Flakes calories = 90
Cap'n'Crunch calories = 120
Cheerios calories = 110
Cinnamon Toast Crunch calories = 120
Clusters calories = 110
Cocoa Puffs calories = 110
Corn Chex calories = 110
Corn Flakes calories = 100
Corn Pops calories = 110
Count Chocula calories = 110
Cracklin' Oat Bran calories = 110
Cream of Wheat (Quick) calories = 100
```

Practice 3

```
1/1 + ⌂ Tilix: map@cis106: ~/Documents/sample_files/Csv
1: map@cis106: ~/Documents/sample_files/Csv ~
map@cis106:~/Documents/sample_files/Csv$ sort cars.csv
AMC Ambassador Brougham;13.0;8;360.0;175.0;3821.;11.0;73;US
AMC Ambassador DPL;15.0;8;390.0;190.0;3850.;8.5;70;US
AMC Ambassador SST;17.0;8;304.0;150.0;3672.;11.5;72;US
AMC Concord;19.4;6;232.0;90.00;3210.;17.2;78;US
AMC Concord;24.3;4;151.0;90.00;3003.;20.1;80;US
AMC Concord d/L;18.1;6;258.0;120.0;3410.;15.1;78;US
AMC Concord DL;23.0;4;151.0;0;3035.;20.5;82;US
AMC Concord DL 6;20.2;6;232.0;90.00;3265.;18.2;79;US
AMC Gremlin;18.0;6;232.0;100.0;2789.;15.0;73;US
AMC Gremlin;19.0;6;232.0;100.0;2634.;13.0;71;US
AMC Gremlin;20.0;6;232.0;100.0;2914.;16.0;75;US
AMC Gremlin;21.0;6;199.0;90.00;2648.;15.0;70;US
AMC Hornet;18.0;6;199.0;97.00;2774.;15.5;70;US
AMC Hornet;18.0;6;232.0;100.0;2945.;16.0;73;US
AMC Hornet;19.0;6;232.0;100.0;2901.;16.0;74;US
AMC Hornet;22.5;6;232.0;90.00;3085.;17.6;76;US
AMC Hornet Sportabout (sw);18.0;6;258.0;110.0;2962.;13.5;71;US
AMC Matador;14.0;8;304.0;150.0;3672.;11.5;73;US
AMC Matador;15.0;6;258.0;110.0;3730.;19.0;75;US
AMC Matador;15.5;8;304.0;120.0;3962.;13.9;76;US
AMC Matador;16.0;6;258.0;110.0;3632.;18.0;74;US
AMC Matador;18.0;6;232.0;100.0;3288.;15.5;71;US
AMC Matador (sw);14.0;8;304.0;150.0;4257.;15.5;74;US
```

```
1/1 + ⌂ Tilix: map@cis106: ~/Documents/sample_files/Csv
1: map@cis106: ~/Documents/sample_files/Csv ~
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;31.9;4;89.00;71.00;1925.;14.0;79;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 17;0;4;97.00;48.00;1978.;20.0;71;Europe
Volkswagen Super Beetle;26.0;4;97.00;46.00;1950.;21.0;73;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;3160.;19.6;81;Europe
map@cis106:~/Documents/sample_files/Csv$ sort -o sorted_cars.csv cars.csv
map@cis106:~/Documents/sample_files/Csv$ ls
cars.csv cereal.csv contacts.csv country.csv fake_users.csv sorted_cars.csv users_and_ips.csv
map@cis106:~/Documents/sample_files/Csv$ wc -l sorted_cars.csv
408 sorted_cars.csv
map@cis106:~/Documents/sample_files/Csv$ wc -m sorted_cars.csv
22663 sorted_cars.csv
map@cis106:~/Documents/sample_files/Csv$ _
```

Q2

```
1/1 ~ Tilix map@cis106:~ + - x
1.map@cis106:~ 
map@cis106:~ $ curl -s https://cis106.com/assets/scripts/chal8.sh | bash
[INFO] Generating 100 log entries in access.log...
[SUCCESS] Access.log created sucessfully. Location: /home/map/access.log
map@cis106:~ $ wc -l access.log
100 access.log
map@cis106:~ $ head -n 1 access.log
2025-09-09 07:46:12 Julia /upload FAIL
map@cis106:~ $ tail -n 1 access.log
2025-07-05 06:35:32 Jet /download SUCCESS
map@cis106:~ $ head -n 15 -v access.log
=> access.log <=
2025-09-09 07:46:12 Julia /upload FAIL
2025-08-19 01:08:17 Faye /dashboard DENIED
2025-05-10 17:51:35 Julia /settings FAIL
2025-10-07 11:03:45 Julia /download FAIL
2025-09-19 00:05:07 Annie /reset DENIED
2025-12-12 13:16:16 Spike /logout FAIL
2025-02-28 16:13:13 Erek /logout SUCCESS
2025-06-07 21:04:35 Rize /dashboard DENIED
2025-12-08 00:40:12 Ken /settings SUCCESS
2025-08-26 19:48:48 Eren /upload FAIL
2025-11-04 14:14:10 Seras /dashboard FAIL
2025-01-16 01:09:04 Ein /upload DENIED
2025-01-09 02:46:28 Kei /download DENIED
2025-07-14 08:36:03 Ein /settings SUCCESS
2025-04-19 17:04:40 Ken /dashboard DENIED
map@cis106:~ $ tail -n 15 -v access.log
=> access.log <=
2025-01-06 21:31:40 Kei /settings DENIED
2025-06-20 15:35:44 Julia /login SUCCESS
2025-09-13 00:36:23 Touka /admin FAIL
2025-01-18 19:57:49 Arisu /upload DENIED
2025-04-20 06:07:29 Eren /download FAIL
2025-02-26 16:00:37 Seras /dashboard SUCCESS
2025-09-25 06:11:41 Eren /upload FAIL
2025-04-07 19:09:31 Rei /settings DENIED
2025-04-05 19:17:05 Ein /dashboard SUCCESS
2025-06-28 18:31:57 Seras /dashboard FAIL
2025-10-06 14:52:33 Faye /404 FAIL
2025-06-05 10:33:40 Jet /admin SUCCESS

1/1 ~ Tilix map@cis106:~ + - x
1.map@cis106:~ 
2025-06-05 10:33:40 Jet /admin SUCCESS
2025-10-08 04:19:23 Touka /upload DENIED
2025-07-09 10:10:03 Eren /reset FAIL
2025-07-05 06:35:32 Jet /download SUCCESS
map@cis106:~ $ cut -f3 access.log
2025-09-09 07:46:12 Julia /upload FAIL
2025-08-19 01:08:17 Faye /dashboard DENIED
2025-05-10 17:51:35 Julia /settings FAIL
2025-10-07 11:03:45 Julia /download FAIL
2025-09-19 00:05:07 Annie /reset DENIED
2025-12-12 13:16:16 Spike /logout FAIL
2025-02-28 16:13:13 Erek /logout SUCCESS
2025-06-07 21:04:35 Rize /dashboard DENIED
2025-12-08 00:40:12 Ken /settings SUCCESS
2025-08-26 19:48:48 Eren /upload FAIL
2025-11-04 14:14:10 Seras /dashboard FAIL
2025-01-16 01:09:04 Ein /upload DENIED
2025-01-09 02:46:28 Kei /download DENIED
2025-07-14 08:36:03 Ein /settings SUCCESS
2025-04-19 17:04:40 Ken /dashboard DENIED
2025-08-25 16:51:12 Seras /reset FAIL
2025-02-03 02:02:37 Ein /upload DENIED
2025-06-17 09:58:52 Spike /download DENIED
2025-05-08 03:57:06 Touka /dashboard FAIL
2025-12-10 18:34:15 Seras /admin FAIL
2025-01-14 03:21:35 Edward /Login FAIL
2025-03-28 21:30:26 Edward /settings FAIL
2025-07-09 15:10:49 Asimo /settings FAIL
2025-10-20 07:07:57 Jet /dashboard FAIL
2025-04-01 02:57:39 Ken /admin DENIED
2025-06-13 09:54:01 Rei /login DENIED
2025-05-22 20:24:59 Seras /reset SUCCESS
2025-04-24 20:57:15 Jet /admin FAIL
2025-09-27 19:18:57 Ein /settings DENIED
2025-02-26 20:40:40 Kei /download FAIL
2025-09-25 07:05:50 Rei /login SUCCESS
2025-08-19 05:20:40 Edward /Login SUCCESS
2025-11-27 20:52:32 Haruka /404 DENIED
2025-08-10 21:19:39 Rei /logout FAIL
=> access.log <=
```

```
1/1 + ↻ Tilix map@cis106:~
1.map@cis106:~
2025-03-01 15:06:59 Eren /admin DENIED
2025-10-05 06:48:10 Haruka /upload DENIED
2025-03-18 01:21:52 Julia /dashboard DENIED
2025-11-11 09:20:34 Edward /download DENIED
2025-06-25 20:24:28 Jet /admin FAIL
2025-12-14 05:01:55 Edward /404 SUCCESS
2025-04-10 15:24:41 Eren /login SUCCESS
2025-07-26 12:33:40 Haruka /upload SUCCESS
2025-06-28 15:32:05 Eren /settings FAIL
2025-09-16 01:55:04 Walter /reset FAIL
2025-04-21 03:14:17 Walter /login FAIL
2025-06-04 18:42:59 Rei /admin FAIL
2025-05-05 08:34:20 Kei /admin FAIL
2025-03-05 02:37:14 Touka /logout FAIL
2025-02-17 21:24:50 Seras /logout SUCCESS
2025-12-26 05:32:30 Julia /404 DENIED
2025-11-23 17:49:32 Seras /upload SUCCESS
2025-11-22 13:35:44 Julia /reset FAIL
2025-01-01 08:55:27 Edward /logout DENIED
2025-03-19 03:36:04 Edward /settings SUCCESS
2025-09-25 23:12:46 Annie /404 FAIL
2025-08-09 20:55:44 Spike /404 FAIL
2025-02-10 15:35:56 Asimov /dashboard SUCCESS
2025-05-26 11:47:31 Walter /login FAIL
2025-05-02 00:00:56 Edward /dashboard FAIL
2025-08-14 12:10:26 Rize /dashboard DENIED
2025-07-13 22:44:10 Haruka /reset DENIED
2025-06-07 14:53:13 Jet /dashboard SUCCESS
2025-10-05 13:01:13 Touka /reset SUCCESS
2025-11-13 02:33:43 Shinji /logout DENIED
2025-11-27 02:23:12 Edward /admin FAIL
2025-05-20 13:46:40 Honami /login FAIL
2025-05-21 20:12:29 Ken /dashboard SUCCESS
2025-02-28 06:17:26 Asimov /dashboard FAIL
2025-10-28 14:45:44 Haruka /reset DENIED
2025-06-21 04:56:31 Rize /dashboard SUCCESS
2025-01-18 23:30:23 Rize /download DENIED
2025-07-09 01:11:08 Eren /dashboard SUCCESS
2025-08-20 18:53:48 Julia /admin FAIL
2025-06-06 12:04:37 Honami /reset FAIL
2025-12-07 14:11:43 Ein /login DENIED
2025-08-22 14:15:48 Julia /settings FAIL
2025-11-24 15:38:10 Eren /upload SUCCESS
2025-09-27 03:42:22 Jet /upload DENIED
2025-07-21 06:52:22 Touka /upload DENIED
2025-07-28 10:23:28 Annie /admin DENIED
2025-09-02 11:57:18 Spike /settings FAIL
2025-09-07 19:39:13 Edward /download FAIL
2025-10-19 11:11:29 Jet /settings DENIED
2025-06-15 06:46:23 Spike /404 FAIL
2025-02-24 22:57:08 Jet /logout FAIL
2025-01-08 21:31:40 Kei /settings DENIED
2025-06-20 15:35:44 Julia /login SUCCESS
2025-09-13 09:36:23 Touka /admin FAIL
2025-01-18 19:57:49 Arisu /upload DENIED
2025-04-20 06:07:29 Eren /download FAIL
2025-02-26 16:00:37 Seras /dashboard SUCCESS
2025-09-25 06:17:41 Eren /upload FAIL
2025-04-07 19:09:31 Rei /settings DENIED
2025-04-05 19:11:05 Ein /dashboard SUCCESS
2025-06-28 18:11:57 Seras /dashboard FAIL
2025-10-06 14:52:53 Faye /404 FAIL
2025-06-05 10:35:40 Jet /admin SUCCESS
2025-10-08 04:19:23 Touka /upload DENIED
2025-07-09 10:10:03 Eren /reset FAIL
2025-07-05 06:35:32 Jet /download SUCCESS
map@cis106:~$ sort -k3 access.log -o sorted_access_log_by_uname.log
map@cis106:~$ sort -k4,4 access.log -o sorted_access_log_by_endpoint.log
map@cis106:~$ cut -f3,4 -output-delimiter=' ' accessed: ' access.log
2025-09-09 07:46:12 Julia /upload FAIL
2025-08-19 01:08:17 Faye /dashboard DENIED
2025-05-10 17:51:35 Julia /settings FAIL
2025-10-07 11:03:45 Julia /download FAIL
2025-09-19 00:05:07 Annie /reset DENIED
2025-12-12 13:10:16 Spike /logout FAIL
2025-02-28 16:13:13 Eren /logout SUCCESS
2025-06-07 21:04:35 Rize /dashboard DENIED
2025-12-08 00:40:12 Ken /settings SUCCESS
2025-06-06 12:04:37 Honami /reset FAIL
```