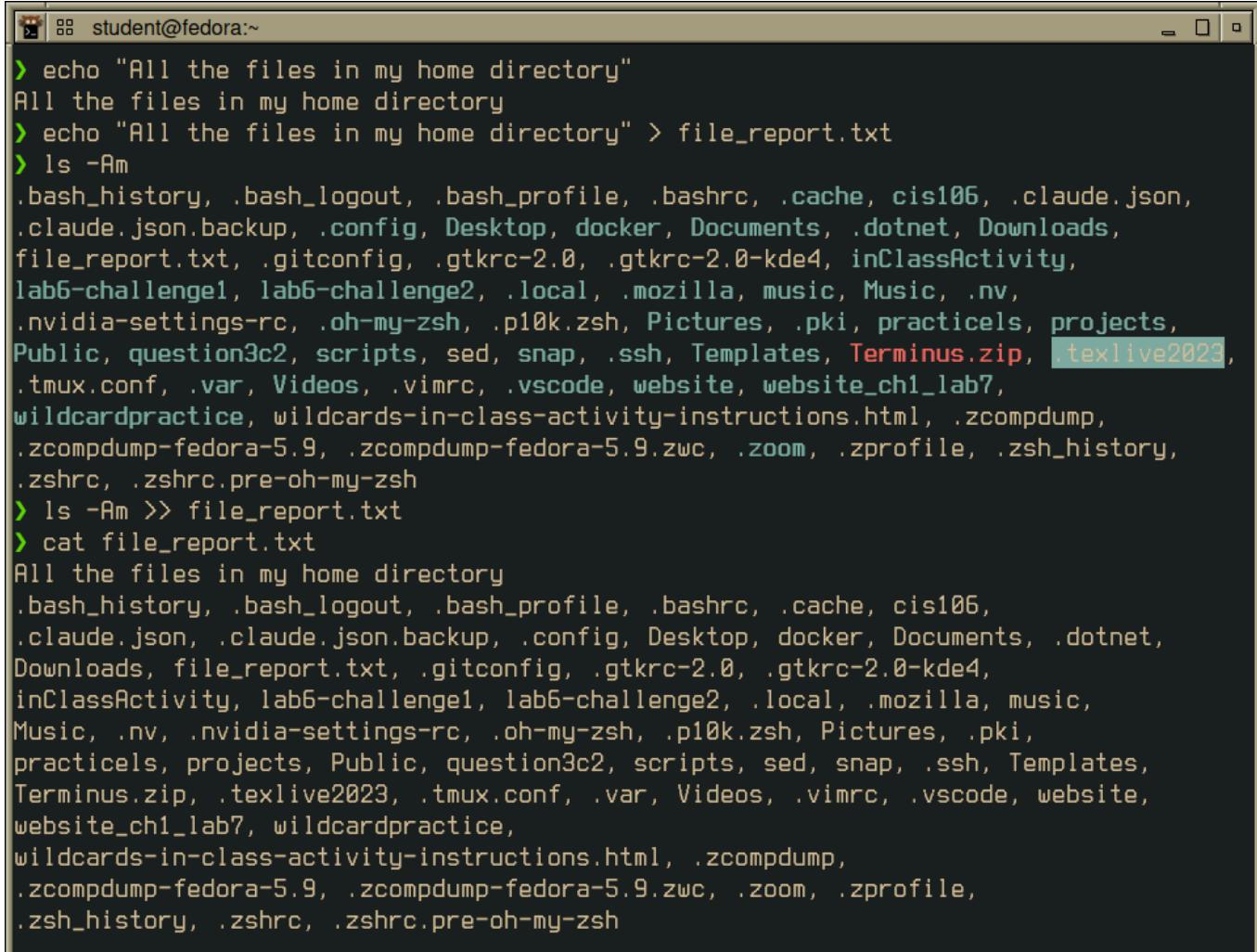# Lab 9

Handling Text Files Part 2

Question 1

Creating a home dir file report


```
  student@fedora:~                                                          _ □ ▫

❯ echo "All the files in my home directory"
All the files in my home directory
❯ echo "All the files in my home directory" > file_report.txt
❯ ls -Am
.bash_history, .bash_logout, .bash_profile, .bashrc, .cache, cis106, .claude.json,
.claude.json.backup, .config, Desktop, docker, Documents, .dotnet, Downloads,
file_report.txt, .gitconfig, .gtkrc-2.0, .gtkrc-2.0-kde4, inClassActivity,
lab6-challenge1, lab6-challenge2, .local, .mozilla, music, Music, .nv,
.nvidia-settings-rc, .oh-my-zsh, .p10k.zsh, Pictures, .pki, practicels, projects,
Public, question3c2, scripts, sed, snap, .ssh, Templates, Terminus.zip, .texlive2023,
.tmux.conf, .var, Videos, .vimrc, .vscode, website, website_ch1_lab7,
wildcardpractice, wildcards-in-class-activity-instructions.html, .zcompdump,
.zcompdump-fedora-5.9, .zcompdump-fedora-5.9.zwc, .zoom, .zprofile, .zsh_history,
.zshrc, .zshrc.pre-oh-my-zsh
❯ ls -Am >> file_report.txt
❯ cat file_report.txt
All the files in my home directory
.bash_history, .bash_logout, .bash_profile, .bashrc, .cache, cis106,
.claude.json, .claude.json.backup, .config, Desktop, docker, Documents, .dotnet,
Downloads, file_report.txt, .gitconfig, .gtkrc-2.0, .gtkrc-2.0-kde4,
inClassActivity, lab6-challenge1, lab6-challenge2, .local, .mozilla, music,
Music, .nv, .nvidia-settings-rc, .oh-my-zsh, .p10k.zsh, Pictures, .pki,
practicels, projects, Public, question3c2, scripts, sed, snap, .ssh, Templates,
Terminus.zip, .texlive2023, .tmux.conf, .var, Videos, .vimrc, .vscode, website,
website_ch1_lab7, wildcardpractice,
wildcards-in-class-activity-instructions.html, .zcompdump,
.zcompdump-fedora-5.9, .zcompdump-fedora-5.9.zwc, .zoom, .zprofile,
.zsh_history, .zshrc, .zshrc.pre-oh-my-zsh
```

Question 2

Number of files in home directory

```
    student@fedora:~                                                    _ □ ▫
> echo "Total number of files in my home directory"
Total number of files in my home directory
> echo "Total number of files in my home directory" >> file_report.txt
> ls -lA | grep -v "dr" | wc -l >> file_report.txt
> echo "Total number of directories in my home directory" >> file_report.txt
> ls -lA | grep "dr" | wc -l >> file_report.txt
> tail file_report.txt
practicels, projects, Public, question3c2, scripts, sed, snap, .ssh, Templates,
Terminus.zip, .texlive2023, .tmux.conf, .var, Videos, .vimrc, .vscode, website,
website_ch1_lab7, wildcardpractice,
wildcards-in-class-activity-instructions.html, .zcompdump,
.zcompdump-fedora-5.9, .zcompdump-fedora-5.9.zwc, .zoom, .zprofile,
.zsh_history, .zshrc, .zshrc.pre-oh-my-zsh
Total number of files in my home directory
25
Total number of directories in my home directory
35
```

> Appending `echo` , linecount `wc -l` for inversion of grep of `dr` for directories
> linecount for directories using regular `grep`

Question 3

Account field from `/etc/passwd` file

```
    student@fedora:~                                                    _ □ ▫
> awk -F':' '{print $1}' /etc/passwd
root
bin
daemon
adm
lp
sync
shutdown
halt
mail
operator
games
ftp
nobody
tss
dbus
systemd-oom
polkitd
systemd-coredump
systemd-timesync
```

Account and shell fields

```
student@fedora:~

❯ awk -F':' '{print $1, $7}' /etc/passwd
root /bin/bash
bin /usr/sbin/nologin
daemon /usr/sbin/nologin
adm /usr/sbin/nologin
lp /usr/sbin/nologin
sync /bin/sync
shutdown /sbin/shutdown
halt /sbin/halt
mail /usr/sbin/nologin
operator /usr/sbin/nologin
games /usr/sbin/nologin
ftp /usr/sbin/nologin
nobody /usr/sbin/nologin
tss /usr/bin/nologin
dbus /usr/bin/nologin
systemd-oom /usr/bin/nologin
polkitd /sbin/nologin
systemd-coredump /usr/bin/nologin
systemd-timesync /usr/bin/nologin
chrony /sbin/nologin
systemd-network /usr/bin/nologin
systemd-resolve /usr/bin/nologin
```

Account, shell, and home fields

```
student@fedora:~

❯ awk -F':' '{print $1, $7, $6}' /etc/passwd
root /bin/bash /root
bin /usr/sbin/nologin /bin
daemon /usr/sbin/nologin /sbin
adm /usr/sbin/nologin /var/adm
lp /usr/sbin/nologin /var/spool/lpd
sync /bin/sync /sbin
shutdown /sbin/shutdown /sbin
halt /sbin/halt /sbin
mail /usr/sbin/nologin /var/spool/mail
operator /usr/sbin/nologin /root
games /usr/sbin/nologin /usr/games
ftp /usr/sbin/nologin /var/ftp
nobody /usr/sbin/nologin /
tss /usr/bin/nologin /
dbus /usr/bin/nologin /
systemd-oom /usr/bin/nologin /
polkitd /sbin/nologin /
systemd-coredump /usr/bin/nologin /
systemd-timesync /usr/bin/nologin /
chrony /sbin/nologin /var/lib/chrony
systemd-network /usr/bin/nologin /
systemd-resolve /usr/bin/nologin /
avahi /sbin/nologin /var/run/avahi-daemon
unbound /sbin/nologin /var/lib/unbound
geoclue /sbin/nologin /var/lib/geoclue
```

Separated with labels

```
student@fedora:~

> awk -F':' '{print "The user:", $1, "logs in with:", $7, "and home dir is: " $6}' /et
c/passwd
The user: root logs in with: /bin/bash and home dir is: /root
The user: bin logs in with: /usr/sbin/nologin and home dir is: /bin
The user: daemon logs in with: /usr/sbin/nologin and home dir is: /sbin
The user: adm logs in with: /usr/sbin/nologin and home dir is: /var/adm
The user: lp logs in with: /usr/sbin/nologin and home dir is: /var/spool/lpd
The user: sync logs in with: /bin/sync and home dir is: /sbin
The user: shutdown logs in with: /sbin/shutdown and home dir is: /sbin
The user: halt logs in with: /sbin/halt and home dir is: /sbin
The user: mail logs in with: /usr/sbin/nologin and home dir is: /var/spool/mail
The user: operator logs in with: /usr/sbin/nologin and home dir is: /root
The user: games logs in with: /usr/sbin/nologin and home dir is: /usr/games
The user: ftp logs in with: /usr/sbin/nologin and home dir is: /var/ftp
The user: nobody logs in with: /usr/sbin/nologin and home dir is: /
The user: tss logs in with: /usr/bin/nologin and home dir is: /
The user: dbus logs in with: /usr/bin/nologin and home dir is: /
The user: systemd-oom logs in with: /usr/bin/nologin and home dir is: /
The user: polkitd logs in with: /sbin/nologin and home dir is: /
The user: systemd-coredump logs in with: /usr/bin/nologin and home dir is: /
The user: systemd-timesync logs in with: /usr/bin/nologin and home dir is: /
The user: chrony logs in with: /sbin/nologin and home dir is: /var/lib/chrony
The user: systemd-network logs in with: /usr/bin/nologin and home dir is: /
The user: systemd-resolve logs in with: /usr/bin/nologin and home dir is: /
The user: avahi logs in with: /sbin/nologin and home dir is: /var/run/avahi-daemon
The user: unbound logs in with: /sbin/nologin and home dir is: /var/lib/unbound
The user: geoclue logs in with: /sbin/nologin and home dir is: /var/lib/geoclue
```

Extracting

```
student@fedora:~

> grep -e "/bin/bash" -e "/usr/bin/zsh" /etc/passwd
root:x:0:0:Super User:/root:/bin/bash
student:x:1001:1001::/home/student:/usr/bin/zsh
user:x:1000:1000:user:/home/koishi:/usr/bin/zsh
> grep -e "/bin/bash" -e "/usr/bin/zsh" /etc/passwd | awk -F':' '{print $1, "=", $7}'
root = /bin/bash
student = /usr/bin/zsh
user = /usr/bin/zsh
> grep -e "/bin/bash" -e "/usr/bin/zsh" /etc/passwd | awk -F':' '{print $1, "=", $7}'
>> report_users.txt
```

Includes `/usr/bin/zsh` to account for user assigned shell

Report users check

```
 student@fedora:~
> head -5 report_users.txt && echo -e "\n" && tail -5 report_users.txt
The user: root logs in with: /bin/bash and home dir is: /root
The user: bin logs in with: /usr/sbin/nologin and home dir is: /bin
The user: daemon logs in with: /usr/sbin/nologin and home dir is: /sbin
The user: adm logs in with: /usr/sbin/nologin and home dir is: /var/adm
The user: lp logs in with: /usr/sbin/nologin and home dir is: /var/spool/lpd


The user: student logs in with: /usr/bin/zsh and home dir is: /home/student
The user: user logs in with: /usr/bin/zsh and home dir is: /home/koishi
root = /bin/bash
student = /usr/bin/zsh
user = /usr/bin/zsh
```

Question 4

Creating honda1.csv

```
~/Documents/sample_files/Csv
> head -1 cars.csv > honda1.csv
```

Check honda1.csv header

```
 student@fedora:~
> cat Documents/sample_files/Csv/honda1.csv
Car;MPG;Cylinders;Displacement;Horsepower;Weight;Acceleration;Model;Origin
```

Move all containing "honda"

```
 student@fedora:~/Documents/sample_files/Csv
~/Documents/sample_files/Csv
> grep -i "honda" cars.csv >> honda1.csv
```

> case insensitive `-i`

Check honda1.csv

```
 student@fedora:~/Documents/sample_files/Csv
> head -5 honda1.csv
Car;MPG;Cylinders;Displacement;Horsepower;Weight;Acceleration;Model;Origin
Honda Civic;24.0;4;120.0;97.00;2489.;15.0;74;Japan
Honda Civic CVCC;33.0;4;91.00;53.00;1795.;17.5;75;Japan
Honda Civic;33.0;4;91.00;53.00;1795.;17.4;76;Japan
Honda Accord CVCC;31.5;4;98.00;68.00;2045.;18.5;77;Japan
```

Replace ; with , and check

```
student@fedora:~/Documents/sample_files/Csv                          _ □ ▫
~/Documents/sample_files/Csv                                    12:24:46
> sed 's/;/,/g' honda1.csv > honda2.csv

~/Documents/sample_files/Csv                                    12:24:57
> head -5 honda2.csv
Car,MPG,Cylinders,Displacement,Horsepower,Weight,Acceleration,Model,Origin
Honda Civic,24.0,4,120.0,97.00,2489.,15.0,74,Japan
Honda Civic CVCC,33.0,4,91.00,53.00,1795.,17.5,75,Japan
Honda Civic,33.0,4,91.00,53.00,1795.,17.4,76,Japan
Honda Accord CVCC,31.5,4,98.00,68.00,2045.,18.5,77,Japan
```

Initialize honda3.csv with header

```
student@fedora:~/Documents/sample_files/Csv
~/Documents/sample_files/Csv
> echo "model,cylinders,hp" > honda3.csv
```

Pipe without 1st line, print comma separated fields

```
student@fedora:~/Documents/sample_files/Csv
~/Documents/sample_files/Csv
> sed '1d' honda2.csv | awk -F',' '{print $1, ",", $3, ",", $5}'
Honda Civic , 4 , 97.00
Honda Civic CVCC , 4 , 53.00
Honda Civic , 4 , 53.00
Honda Accord CVCC , 4 , 68.00
Honda Civic CVCC , 4 , 60.00
Honda Accord LX , 4 , 68.00
Honda Civic 1500 gl , 4 , 67.00
Honda Accord , 4 , 72.00
Honda Civic 1300 , 4 , 60.00
Honda Prelude , 4 , 75.00
Honda Accord , 4 , 75.00
Honda Civic , 4 , 67.00
Honda Civic (auto) , 4 , 67.00
```

Delete spaces

```
student@fedora:~/Documents/sample_files/Csv                                    _ □ ▫
~/Documents/sample_files/Csv                                              15:02:03
❯ sed '1d' honda2.csv | awk -F',' '{print $1, ",", $3, ",", $5}' | sed 's/ * , */,/g'
Honda Civic,4,97.00
Honda Civic CVCC,4,53.00
Honda Civic,4,53.00
Honda Accord CVCC,4,68.00
Honda Civic CVCC,4,60.00
Honda Accord LX,4,68.00
Honda Civic 1500 gl,4,67.00
Honda Accord,4,72.00
Honda Civic 1300,4,60.00
Honda Prelude,4,75.00
Honda Accord,4,75.00
Honda Civic,4,67.00
Honda Civic (auto),4,67.00
```

> Uses `*` to match preceding item

Replace `Honda` with `Honda_`

```
student@fedora:~/Documents/sample_files/Csv                                    _ □ ▫
~/Documents/sample_files/Csv                                              15:02:49
❯ sed '1d' honda2.csv | awk -F',' '{print $1, ",", $3, ",", $5}' | sed 's/ * , */,/g' | sed
 's/Honda /Honda_/g'
Honda_Civic,4,97.00
Honda_Civic CVCC,4,53.00
Honda_Civic,4,53.00
Honda_Accord CVCC,4,68.00
Honda_Civic CVCC,4,60.00
Honda_Accord LX,4,68.00
Honda_Civic 1500 gl,4,67.00
Honda_Accord,4,72.00
Honda_Civic 1300,4,60.00
Honda_Prelude,4,75.00
Honda_Accord,4,75.00
Honda_Civic,4,67.00
Honda_Civic (auto),4,67.00
```

Append to honda3.csv

```
~/Documents/sample_files/Csv                                              15:03:47
❯ sed '1d' honda2.csv | awk -F',' '{print $1, ",", $3, ",", $5}' | sed 's/ * , */,/g' | sed
 's/Honda /Honda_/g' >> honda3.csv
```

Install `bat`

```
    ⊡ ⊞  student@fedora:~/Documents/sample_files/Csv                    _ ☐ ▫
   bat                        x86_64   0.25.0-6.fc42              updates          5.6 MiB

  Transaction Summary:
   Installing:            1 package

  Total size of inbound packages is 3 MiB. Need to download 3 MiB.
  After this operation, 6 MiB extra will be used (install 6 MiB, remove 0 B).
  Is this ok [y/N]: y
  [1/1] bat-0:0.25.0-6.fc42.x86_64              100% |    1.4 MiB/s |    2.6 MiB |  00m02s
  --------------------------------------------------------------------------------------
  [1/1] Total                                   100% |    1.1 MiB/s |    2.6 MiB |  00m02s
  Running transaction
  [1/3] Verify package files                    100% |  76.0    B/s |    1.0    B |  00m00s
  [2/3] Prepare transaction                     100% |   1.0    B/s |    1.0    B |  00m01s
  [3/3] Installing bat-0:0.25.0-6.fc42.x86 100% |   8.8 MiB/s |    5.6 MiB |  00m01s
  Complete!

  ~/Documents/sample_files/Csv                                         11s 15:05:49
  ⟩
```

Check with `bat`

```
    ⊡ ⊞  student@fedora:~/Documents/sample_files/Csv                    _ ☐ ▫
  ~/Documents/sample_files/Csv                                          15:06:38
  ⟩ bat honda3.csv

          File: honda3.csv
  ────────────────────────────────────────
     1      model,cylinders,hp
     2      Honda_Civic,4,97.00
     3      Honda_Civic CVCC,4,53.00
     4      Honda_Civic,4,53.00
     5      Honda_Accord CVCC,4,68.00
     6      Honda_Civic CVCC,4,60.00
     7      Honda_Accord LX,4,68.00
     8      Honda_Civic 1500 gl,4,67.00
     9      Honda_Accord,4,72.00
    10      Honda_Civic 1300,4,60.00
    11      Honda_Prelude,4,75.00
    12      Honda_Accord,4,75.00
    13      Honda_Civic,4,67.00
    14      Honda_Civic (auto),4,67.00
```

Challenge Question

grep for href= and src=

```
student@fedora:~/Documents/broken

~/Documents/broken                                                    15:10:07
❯ grep -e "href=" -e "src=" index.html
        <link rel="icon" type="image/x-icon" href="assets/favicon.ico" />
        <link rel="preconnect" href="https://fonts.googleapis.com" />
        <link rel="preconnect" href="https://fonts.gstatic.com" crossorigin />
        <link href="https://fonts.googleapis.com/css2?family=Plus+Jakarta+Sans:wght@100;20
0;300;400;500;600;700;800;900&amp;display=swap" rel="stylesheet" />
        <link href="https://cdn.jsdelivr.net/npm/bootstrap-icons@1.8.1/font/bootstrap-icon
s.css" rel="stylesheet" />
        <link href="css/styles.css" rel="stylesheet" />
                    <a class="navbar-brand" href="index.html"><span class="fw-bolder text-
primary">Start Bootstrap</span></a>
                        <li class="nav-item"><a class="nav-link" href="index.html">Hom
e</a></li>
                        <li class="nav-item"><a class="nav-link" href="resume.html">Re
sume</a></li>
                        <li class="nav-item"><a class="nav-link" href="projects.html">
Projects</a></li>
                        <li class="nav-item"><a class="nav-link" href="contact.html">C
ontact</a></li>
                            <a class="btn btn-primary btn-lg px-5 py-3 me-sm-3 fs-
6 fw-bolder" href="resume.html">Resume</a>
                            <a class="btn btn-outline-dark btn-lg px-5 py-3 fs-6 f
w-bolder" href="projects.html">Projects</a>
                            <img class="profile-img" src="assets/profile.png" alt=
"..." />
                            <a class="text-gradient" href="#!"><i class="bi bi-twi
tter"></i></a>
                            <a class="text-gradient" href="#!"><i class="bi bi-lin
kedin"></i></a>
                            <a class="text-gradient" href="#!"><i class="bi bi-git
hub"></i></a>
                        <a class="small" href="#!">Privacy</a>
                        <a class="small" href="#!">Terms</a>
                        <a class="small" href="#!">Contact</a>
        <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.2.3/dist/js/bootstrap.bundle
.min.js"></script>
        <script src="js/scripts.js"></script>
```

Filter placeholders and http links

```
~/Documents/broken                                          15:18:14
> grep -e "href=" -e "src=" index.html | sed '/http/d' | sed '/#/d' | grep -e "href=" -e "
src="
        <link rel="icon" type="image/x-icon" href="assets/favicon.ico" />
        <link href="css/styles.css" rel="stylesheet" />
                    <a class="navbar-brand" href="index.html"><span class="fw-bolder text-
primary">Start Bootstrap</span></a>
                            <li class="nav-item"><a class="nav-link" href="index.html">Hom
e</a></li>
                            <li class="nav-item"><a class="nav-link" href="resume.html">Re
sume</a></li>
                            <li class="nav-item"><a class="nav-link" href="projects.html">
Projects</a></li>
                            <li class="nav-item"><a class="nav-link" href="contact.html">C
ontact</a></li>
                                    <a class="btn btn-primary btn-lg px-5 py-3 me-sm-3 fs-
6 fw-bolder" href="resume.html">Resume</a>
                                    <a class="btn btn-outline-dark btn-lg px-5 py-3 fs-6 f
w-bolder" href="projects.html">Projects</a>
                                    <img class="profile-img" src="assets/profile.png" alt=
"..." />
        <script src="js/scripts.js"></script>
```

File reconnaissance


```
~/Documents/broken
> tree
.
├── contact.html
├── favicon.ico
├── index.html
├── profile.png
├── projects.html
├── resume.html
├── scripts.js
└── styles.css

1 directory, 8 files
```

Creating directories and moving files to proper dir

```
~/Documents/broken
> mkdir -p assets css js

~/Documents/broken
> mv *.png *.ico assets

~/Documents/broken
> mv styles.css css

~/Documents/broken
> mv scripts.js js
```

Checking `index.html` in firefox