Lab

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Due date: To be completed in class, before the end of class.

Make sure that you work with your lab partners. If a team member is absent contact them and work with them remotely via discord, zoom, ravens...

Don't divide up the work, work on each question together. It is important that you all learn the material in every lab.

Lab must be completed as a regular user, not the root user.

Instructions

Part one: 1 point

Re-write your grep command from a couple of weeks ago so that the command writes the names of the files that contain the word “alias” to a new file `~/Documents/week5/files-alias`. If a previous file with that name exists your command should replace it. You will have to create the directories first.

Submit a screenshot of your command

```
vagrant@ubuntu2210:~$ grep -rl alias ~
/home/vagrant/.bash_history
/home/vagrant/.bashrc
vagrant@ubuntu2210:~$ grep -rl alias ~ > ~/Documents/week5/files-alias
vagrant@ubuntu2210:~$ ls ~/Documents/week5/
files-alias
```

Part two: 3 points

Find the PID (process id) of a process with `ps`

- use the -e option and the -o option
- with the -o option display:
  - COMMAND
  - PID
- use another utility to filter your output to look for ‘ssh’

submit screenshots that show the following:

- your complete ps command, and the output

```
vagrant@ubuntu2210:~$ ps -eo cmd,pid | grep ssh
sshd: /usr/sbin/sshd -D [li     855
sshd: vagrant [priv]           1139
sshd: vagrant@pts/0            1191
grep --color=auto ssh          1712
```

- the relevant sections in the man page that provide the correct arguments for the -o option.

```
-o format
       User-defined format.  format is a single argument in the form of a blank-separated or comma-separated
       list, which offers a way to specify individual output columns.  The recognized keywords are described
       in the STANDARD FORMAT SPECIFIERS section below.  Headers may be renamed (ps -o pid,ruser=RealUser -o
       comm=Command) as desired.  If all column headers are empty (ps -o pid= -o comm=) then the header line
       will not be output.  Column width will increase as needed for wide headers; this may be used to widen
       up columns such as WCHAN (ps -o pid,wchan=WIDE-WCHAN-COLUMN -o comm).  Explicit width control (ps opid,
       wchan:42,cmd) is offered too.  The behavior of ps -o pid=X,comm=Y varies with personality; output may
       be one column named "X,comm=Y" or two columns named "X" and "Y".  Use multiple -o options when in
       doubt.  Use the PS_FORMAT environment variable to specify a default as desired; DefSysV and DefBSD are
       macros that may be used to choose the default UNIX or BSD columns.
```

```
cmd         CMD       see args.  (alias args, command).

comm        COMMAND   command name (only the executable name).  Modifications to the command name will not be
                      shown.  A process marked <defunct> is partly dead, waiting to be fully destroyed by its
                      parent.  The output in this column may contain spaces.  (alias ucmd, ucomm).  See also
                      the args format keyword, the -f option, and the c option.
                      When specified last, this column will extend to the edge of the display.  If ps can not
                      determine display width, as when output is redirected (piped) into a file or another
                      command, the output width is undefined (it may be 80, unlimited, determined by the TERM
                      variable, and so on).  The COLUMNS environment variable or --cols option may be used to
                      exactly determine the width in this case.  The w or -w option may be also be used to
                      adjust width.
```

```
pid          PID       a number representing the process ID (alias tgid).
```

```
tpgid       TPGID     ID of the foreground process group on the tty (terminal) that the process is connected
                      to, or -1 if the process is not connected to a tty.
```

  Include a note that says what section of the man page this information is in. Bold text, left justified.

```
OUTPUT FORMAT CONTROL
```

```
STANDARD FORMAT SPECIFIERS
```

  Part three: 2 points

Add an alias to your shell configuration file that changes the default behaviour of the `ls` command. Part one will tell you which file to edit.

Your new ls behaviour should include the following:

- all

```
-a, --all
       do not ignore entries starting with .
```

- classify

-
```
-F, --classify
       append indicator (one of */=>@|) to entries
```
- human-readable
-
```
-h, --human-readable
       with -l and -s, print sizes like 1K 234M 2G etc.
```

The file you found in part one contains example aliases. Open the file in vim and search for the aliases, add your alias in the same section.

remember you can search for text in vim the same way you can in less (the pager that you use everytime you open a man page) `/search-term`

submit a screenshot that includes your alias, along with the existing aliases

```
#Custom Aliases
alias cls='clear'
alias ls= 'ls -ahF'
```

part four: 2 points

Take your command from part 1 and add it to a bash script file.

Save your file in `~/bin/lclsrch` lclsrch is the name of the file.

Your new script should allow you to do the following:

- pass the search word as a positional parameter when you run the script
- write to a new file, the name of new file should be `search-file-<search-word>` where `' will be the word you pass as a positional parameter. So if you searched for alias you filed would be named 'search-file-alias'
- Write the new file to the same directory as part 1,
- search in your home directory

What to submit:

- copy your code into your document, make it clear that it is code, use a code block or make the font a monospaced font.
- add a note to your document that describes the steps needed to successfully run your new script.

```
#!/bin/bash
#: Title       : Search File
#: Date        : Feb  08 23
#: Author      : Quinten Leung, Stanley Le
#: Version     : 1.0
#: Description : Takes in one argument and creates a file in the local
directory outputting, #!/bin/bash
#: Options     : None
grep -rl $1 ~ > search-file-$1
```

Submission Instructions

Submit a .pdf using the dropbox on D2L

Title your pdf “your-group-lab4.pdf” ie "group1-lab3.pdf”

- File must be a .pdf.
- Only one submission per team
- Include all contributing team members names in the file, at the start of the file so it is easy to find.