

IRIS 2022 Seismology Skill Building Workshop OSL

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Finish review

Started on Wednesday, August 3, 2022, 6:43 AM
State Finished
Completed on Wednesday, August 3, 2022, 6:48 AM
Time taken 4 mins 58 secs
Marks 21.00/21.00
Grade 100.00 out of 100.00

Question 1

Correct

1.00 points out of 1.00

Flag question

1. Redirection

Most processes initiated by Linux commands write to the standard output (that is, they write directly to your screen), and many take their input from the standard input (that is, they read it from what you type with the keyboard). There is also the standard error, where processes write their error messages, by default, to your screen.

We have already seen one use of the `cat` command to write the contents of a file to the screen.

Now make sure you are in your `act1` directory (you can use `cd ~/groupwork/act1` to ensure that), then type `cat` without specifying a file to read

```
(iris) $pwdcat~/your_username/~/groupwork/act1> cat
```

Then type a few words on the keyboard and press the [Enter] key.

Finally hold the [Ctrl] key down and press the letter [D] to end the input.

What happens if you run the `cat` command without specifying a file to read?

- Select one:
- ☐ a. It reads the standard output (the keyboard), copies the output to the standard input (the screen) after receiving [Enter], and upon receiving the 'end of file' (Ctrl-D), it stops.
 - ☐ b. It reads the standard output (the screen), and upon receiving the 'end of file' (Ctrl-D), it stops.
 - ☒ c. It reads the standard input (the keyboard), copies the input to the standard output (the screen) after receiving [Enter], and stops upon receiving the 'end of file' (Ctrl-D). ✓
 - ☐ d. It reads the standard output (the screen), and upon receiving the 'end of file' (Ctrl-D), copies it to the standard error (the screen).
 - ☐ e. It reads the standard error (the screen), and upon receiving the 'end of file' (Ctrl-D), copies it to the standard output (the screen).
 - ☐ f. It reads the standard error (the screen), and upon receiving the 'end of file' (Ctrl-D), it stops.

Check

Correct
Marks for this submission: 1.00/1.00.

Question 2

Correct

1.00 points out of 1.00

Flag question

2. Redirecting the Output

In Linux, we can redirect both the input and the output of commands. We use the `>` symbol to redirect the output of a command. For example, to create a file called `list1` containing a list of fruit, type

```
(iris) $pwdcat~/your_username/~/groupwork/act1> cat > list1
```

Then type in the names of some fruit, being sure to press the [Enter] key after each one.

```
pear
banana
apple
[Ctrl]D (to stop)
```

What happens is the `cat` command reads the standard input (the keyboard) and the `>` redirects the output, which normally goes to the screen, into a file called `list1`

To read the contents of the `list1` file, type

```
(iris) $pwdcat~/your_username/~/groupwork/act1> cat list1
```

What are the contents of `list1`?

- Select one:
- ☐ a. pear
apple
banana
 - ☐ b. pear banana apple
 - ☐ c. pear
banana
apple
 - ☐ d. pear,apple,banana
 - ☒ e. pear
banana
apple ✓

Check

Correct
Marks for this submission: 1.00/1.00.

Question 3

Correct

1.00 points out of 1.00

Flag question

Using the same method, create another file called `list2` containing the following fruit on separate lines: orange, plum, mango, grapefruit. Then read the contents of `list2`.

Which of the following shows the correct commands to make this happen?

- Select one:
- ☐ a. `cat > list1`
orange
plum
mango
grapefruit
Ctrl-D
cat list2
 - ☐ b. `cat > list2`
orange plum, mango, grapefruit, Ctrl-D
read list2
 - ☐ c. `cat < list2`
orange
plum
mango
grapefruit
Ctrl-D
cat list2
 - ☐ d. `cat < list1`
orange, plum, mango, grapefruit, Ctrl-D
read list2
 - ☐ e. `cat < list1`
orange, plum, mango, grapefruit, Ctrl-D
read list2
 - ☒ f. `cat > list2`
orange
plum
mango
grapefruit
Ctrl-D
cat list2 ✓

Check

Correct
Marks for this submission: 1.00/1.00.

Question 4

Correct

1.00 points out of 1.00

Flag question

The form `>>` appends standard output to a file. So to add more items to the file `list1`, type

```
(iris) $pwdcat~/your_username/~/groupwork/act1> cat >> list1
```

Then type in the names of more fruit

```
peach
grape
orange
[Ctrl]D (to stop)
```

To read the contents of the file, type

```
(iris) $pwdcat~/your_username/~/groupwork/act1> cat list1
```

How many lines with a fruit are in the `list1` file now?

Answer: 8 ✓

Check

Correct
Marks for this submission: 1.00/1.00.

Question 5

Correct

1.00 points out of 1.00

Flag question

You should now have two files with different amounts of fruit in them. We will now use the `cat` command to join (concatenate) `list1` and `list2` into a new file called `biglist`. Type

```
(iris) $pwdcat~/your_username/~/groupwork/act1> cat list1 list2 > biglist
```

What this is doing is reading the contents of `list1` and `list2` in turn, then outputting the text to the file `biglist`

To read the contents of the new file, type

```
(iris) $pwdcat~/your_username/~/groupwork/act1> cat biglist
```

Which of the following is correct about the contents of `biglist`?

- Select one:
- ☒ a. `biglist` has 10 lines, starting with pear and ending with grapefruit ✓
 - ☐ b. `biglist` has 4 lines, starting with orange and ending with grapefruit
 - ☐ c. `biglist` has 10 lines, starting with orange and ending with apple
 - ☐ d. `biglist` has 7 lines, starting with pear and ending with grapefruit
 - ☐ e. `biglist` has 6 lines, starting with pear and ending with orange

Check

Correct
Marks for this submission: 1.00/1.00.

Question 6

Correct

1.00 points out of 1.00

Flag question

3. Redirecting the Input

sort

We use the `<` symbol to redirect the input of a command.

The command `sort` alphabetically or numerically sorts a list. Type

```
(iris) $pwdcat~/your_username/~/groupwork/act1> sort
```

Then type in the names of some vegetables, being sure to press the [Enter] key after each one:

```
carrot
beetroot
artichoke
Ctrl-D (to stop)
```

Which of the following is the output of this

- Select one:
- ☐ a. carrot
beetroot
artichoke
 - ☐ b. beetroot
carrot
artichoke
 - ☒ c. artichoke
beetroot
carrot ✓
 - ☐ d. artichoke
carrot
beetroot
 - ☐ e. beetroot
artichoke
carrot
 - ☐ f. carrot
artichoke
beetroot

Check

Correct
Marks for this submission: 1.00/1.00.

Question 7

Correct

1.00 points out of 1.00

Flag question

Using `<` you can redirect the input to come from a file rather than the keyboard. For example, to sort the list of fruit, type

```
(iris) $pwdcat~/your_username/~/groupwork/act1> sort < biglist
```

and the sorted list will be output to the screen.

To output the sorted list to a file, type

```
(iris) $pwdcat~/your_username/~/groupwork/act1> sort < biglist > slist
```

Use `cat` to read the contents of the file `slist`

Match the fruits with their order in the `slist` file

plum	10	✓
peach	8	✓
mango	5	✓
apple	1	✓
grape	3	✓

Check

Correct
Marks for this submission: 1.00/1.00.

Question 8

Correct

1.00 points out of 1.00

Flag question

Use `cat` to make a file called `names.txt` that has the names of the last 3 presidents, each person on a separate line, with the first and last name listed together on each line. Now use `sort` to sort the names and redirect the output to `names-sort.txt`. Did it sort the names by first name or last name?

Select one:

- ☒ a. first name ✓
- ☐ b. last name

Check

Correct
Marks for this submission: 1.00/1.00.

Question 9

Correct

4. Pipes

1.00 points out of 1.00

Flag question

So far, we've looked at `>`, which lets us input the results of a command into a file, and `<`, which lets us take the contents from a file and input them into a command. Using these symbols, however, can slow down our workflow, especially if we just want to use commands back-to-back. This is exactly where pipes become useful: they indicate that the output of one command should be sent as input for the next command that follows. The symbol for a pipe is the vertical bar `|`.

To use a pipe, we follow this syntax:

```
(iris) $sudo -u<your_username> ./groupwork/act1> command1 | command2
```

where `command1` is the first command, and `command2` is the second command. We want the output of `command1` to become the input of `command2`.

Now let's try an example. Which of the following would take the contents of the current directory and sort them alphabetically?

Select one:

- ☐ a. `ls < sort`
- ☐ b. `sort | ls`
- ☐ c. `ls > sort`
- ☐ d. `sort < ls`
- ☒ e. `ls | sort` ✓

Check

Correct

Marks for this submission: 1.00/1.00.

Question 10

Correct

1.00 points out of 1.00

Flag question

Which of the following would take the contents of the current directory and count how many files there are?

Select one:

- ☐ a. `wc -l < ls`
- ☒ b. `ls | wc -l` ✓
- ☐ c. `wc -l | ls`
- ☐ d. `ls > wc -l`
- ☐ e. `ls < wc -l`

Check

Correct

Marks for this submission: 1.00/1.00.

Question 11

Correct

1.00 points out of 1.00

Flag question

Using pipes, what would you type in the command line to combine all lines of `list1` and `list2`, then search for lines containing the lowercase letter 'y', and then sort the result.

NOTE: For readability purposes, please have a space before and after the pipe!

Answer: `cat list1 list2 | grep y | sort` ✓

Check

Correct

Marks for this submission: 1.00/1.00.

Question 12

Correct

1.00 points out of 1.00

Flag question

5. Wildcards

The characters * and ?

The character `*` is called a wildcard, and will match against none or more character(s) in a file (or directory) name. For example, in your `act1` directory, type

```
(iris) $sudo -u<your_username> ./groupwork/act1> ls *list*
```

This will list all files in the current directory starting with `list`

Which of the following files are returned by this command?

Select one or more:

- ☐ a. `science.txt`
- ☒ b. `list1` ✓
- ☐ c. `biglist`
- ☐ d. `slist`
- ☒ e. `list2` ✓
- ☐ f. None of these files

Check

Correct

Marks for this submission: 1.00/1.00.

Question 13

Correct

1.00 points out of 1.00

Flag question

Try typing

```
(iris) $sudo -u<your_username> ./groupwork/act1> ls *list
```

This will list all files in the current directory ending with `list`

Which of the following files are returned by this command?

Select one or more:

- ☐ a. `science.txt`
- ☐ b. `list2`
- ☐ c. `list1`
- ☐ d. None of these files
- ☒ e. `biglist` ✓
- ☒ f. `slist` ✓

Check

Correct

Marks for this submission: 1.00/1.00.

Question 14

Correct

1.00 points out of 1.00

Flag question

The character `?` will match exactly one character.

So `ls ?ouse` will match files like `house` and `mouse`, but not `grouse`.

Try typing

```
(iris) $sudo -u<your_username> ./groupwork/act1> ls ?list
```

Which of the following files are returned by this command?

Select one or more:

- ☐ a. `list1`
- ☐ b. `list2`
- ☒ c. `slist` ✓
- ☐ d. `science.txt`
- ☐ e. None of these files
- ☐ f. `biglist`

Check

Correct

Marks for this submission: 1.00/1.00.

Question 15

Correct

1.00 points out of 1.00

Flag question

The character `?` can be used multiple times within a single command.

Try typing

```
(iris) $sudo -u<your_username> ./groupwork/act1> ls ???list
```

Which of the following files are returned by this command?

Select one or more:

- ☐ a. `science.txt`
- ☐ b. `slist`
- ☐ c. None of these files
- ☐ d. `list2`
- ☐ e. `list1`
- ☒ f. `biglist` ✓

Check

Correct

Marks for this submission: 1.00/1.00.

Question 16

Correct

1.00 points out of 1.00

Flag question

The placement of the `?` matters. Try typing

```
(iris) $sudo -u<your_username> ./groupwork/act1> ls list???
```

Which of the following files are returned by this command?

Select one or more:

- ☐ a. `science.txt`
- ☐ b. `biglist`
- ☐ c. `slist`
- ☒ d. None of these files ✓
- ☐ e. `list2`
- ☐ f. `list1`

Check

Correct

Marks for this submission: 1.00/1.00.

Question 17

Correct

1.00 points out of 1.00

Flag question

6. Filename conventions

We should note here that a directory is merely a special type of file. So the rules and conventions for naming files apply also to directories.

In naming files, characters with special meanings such as `*`, `&`, `%`, should be avoided. Also, avoid using spaces within names. The safest way to name a file is to use only alphanumeric characters, that is, letters and numbers, together with `_` (underscore) and `.` (dot)

File names conventionally start with a lower-case letter, and may end with a dot followed by a group of letters indicating the contents of the file. For example, all files consisting of plain text may be named with the ending `.txt`, for example, `science.txt`

Then in order to list all files containing simple text in a directory, you need only type `ls *.txt` in that directory.

Beware: some applications give the same name to all the output files they generate.

For example, some computer programming compilers, unless given the appropriate option, produce compiled files named `a.out`. Should you forget to use that option, you are advised to rename the compiled file immediately, otherwise the next such file will overwrite it and it will be lost.

Following the conventions stated above, what should we have named the **biglist** file?

Select one:

- ☐ a. `big_list`
- ☐ b. `BigList`
- ☐ c. `big.list`
- ☒ d. `biglist.txt` ✓
- ☐ e. `biglist_txt`
- ☐ f. `BigList.txt`

Check

Correct

Marks for this submission: 1.00/1.00.

Question 18

Correct

1.00 points out of 1.00

Flag question

7. Getting Help

On-line Manuals

There are on-line manuals which gives information about most commands. The manual pages tell you which options a particular command can take, and how each option modifies the behaviour of the command. Use the `man` command to read the manual page for a particular command.

For example, to find out more about the `wc` (word count) command, type

```
(iris) $sudo -u<your_username> ./groupwork/act1> man wc
```

Which option allows `wc` to print the character count?

Select one:

- ☐ a. `-L`
- ☐ b. `-c`
- ☐ c. `-w`
- ☐ d. `-l`
- ☒ e. `-m` ✓

Check

Correct

Marks for this submission: 1.00/1.00.

Question 19

Correct

1.00 points out of 1.00

Flag question

Alternatively

```
(iris) $sudo -u<your_username> ./groupwork/act1> whatis wc
```

gives a one-line description of the command, but omits any information about options etc.

What is the one-line description of `wc`?

Select one:

- ☐ a. display files on a page-by-page basis
- ☐ b. concatenate and print files
- ☐ c. copy the first part of files
- ☐ d. return current/working directory name
- ☐ e. search a file for a pattern
- ☒ f. word, line, and byte or character count ✓

Check

Correct

Marks for this submission: 1.00/1.00.

Question 20

Correct

1.00 points out of 1.00

Flag question

Apropos

When you are not sure of the exact name of a command,

apropos keyword

will give you the commands with **keyword** in their manual page header. For example, try typing

```
(iris) $sudo -u<your_username> ./groupwork/act1> apropos copy
```

This command will produce a lot of results because there are a lot of commands that have copy as a keyword in their manual page. How could you adjust this command to filter the output to only show the results that have the word 'file' in them? Think about what command allows you to search for specific words and what allows you to connect the output of one command directly to the input of another command.

Answer: `apropos copy | grep file`

Check

Correct
Marks for this submission: 1.00/1.00.

Question 21

Correct
1.00 points out of 1.00

Flag question

8. Redoing or Adjusting Previous Commands

Arrow Keys

You can review a list of previous commands you have run by using the up and down arrow keys. The up arrow moves backwards in time, the down arrow moves forwards in time. If you find a command you would like to run again, you can simply click the [Enter] key once you find it in the list. If you find a command that ran before is similar to what you want to run now, but you need to make an adjustment to it, simply use the right and left arrow keys to move through the text of the previous command, write new text, and then click the [Enter] key. For example, use the arrow keys to find the previous instance of using the `whatis` command you ran, then change the `wc` part to `more`, and then click the [Enter] key. Try this a few more times, but change the `wc` part to `cat`, `head`, `grep`, and `pwd`. Match the commands with their `whatis` descriptions.

copy the first part of files	<div>head</div>	✓
display files on a page-by-page basis	<div>more</div>	✓
search a file for a pattern	<div>grep</div>	✓
concatenate and print files	<div>cat</div>	✓
return current/working directory name	<div>pwd</div>	✓

Check

Correct
Marks for this submission: 1.00/1.00.

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