

QUESTION 1




2 points 

Given a file that shows up as follows in ls -l:

```
-rw-rw-r-- 1 Breda staff 1024 Jan 1 10:01 logfile
```

Suppose that group users contains Alice, Breda and Carole; group tech contains Alice and Breda; and group staff contains Breda and Carole.

What are the access rights for the three users on this file?

- Alice: 
- Breda: 
- Carole: 

In all cases, "execute" refers to running the program as ./logfile.

QUESTION 2

2 points 

Type the command (one word) that you would use on a Linux system to print the name of the current user to the terminal:

QUESTION 3

2 points 

You are currently on branch develop and you would like to merge commits from branch fred into branch george. Complete the git commands to do this, assuming you have no uncommitted changes in your local files. You do not need to do any git status to check the state of anything for this question.

You must not type any leading or trailing spaces, and you must use exactly one space where spaces are required. Do not use any quote marks.

(Your terminal will not mind if you break these rules, but the automarker will and you will lose marks for it.)

- git
- git

QUESTION 4

2 points 

You call fork() and see a return value of 404. Which of the following is correct?

- ☐ The call failed because the process you were trying to fork was not found.
- ☐ You need to check the errno variable to see if there was an error during the fork call. If there was no error, then you are in the parent process, and the pid of the child is 404.
- ☐ You need to check the errno variable to see if there was an error during the fork call. If there was no error, then you are in the child process, and the pid of the parent was 404.
- ☒ Fork succeeded, you are in the parent process, and the pid of the child process is 404.
- ☐ Fork succeeded, and the new process belongs to the user with a user id of 404.
- ☐ Fork succeeded, you are in the child process, and the pid of the parent was 404.

QUESTION 5

2 points 

The command sed (stream editor) reads from standard input, applies a transformation based on its arguments and prints the result on standard output.

One of its arguments is described in the manual page as follows:

y/source/dest/

Transliterate the characters in the pattern space which appear in source to the corresponding character in dest.

The pattern space refers to the input.

For example, echo aabbccdde | sed y/bc/xb/ would print aaxxbdddee.

Based on this information, consider the following commands (lines starting with \$ are commands, the rest is output):

```
$ cat colors.txt
Gules
Azure
Vert
Sable
Purpure
$ cat colors.txt | sed y/aeiou/eioua/ | tail -n 3
```

What will be printed on the second line of the output of the last command?

Enter your answer in the text box exactly as the command would print it.

QUESTION 6

2 points 

The following script, with line numbers added, is an attempt to implement the "compiler helper exercise" to make a script called b that, when called with either ./b build example or ./b build example.c, should first compile the C program example.c to example and, if and only if this was successful, then run it.

```
1 | #!/bin/sh
2 | # Build helper script
3 | if [ $# -lt 2 ]
4 | then
5 |     echo "Use: $0 [compile|build|run] PROGRAM"
6 |     exit 2
7 | fi
8 | BASE="$(basename $2)"
9 | SOURCE="${BASE}.c"
10 | case $1 in
11 |     compile)
12 |         gcc -Wall -std=c99 "$SOURCE" -o "$BASE"
13 |         ;;
14 |     run)
15 |         exec "$BASE"
16 |         ;;
17 |     build)
18 |         $0 compile "$2" || $0 run "$2"
19 |         ;;
20 |     *)
21 |         echo "Unknown command '$1', valid ones are compile, build, run."
22 |         ;;
23 | esac
```

However, the script contains two mistakes. Where are they? Enter the affected lines as integers.

- The first mistake is on line .
- The second mistake is on line .

QUESTION 7

2 points 

Enter the commands that you would run on a Debian Linux system as the root user to perform the following system administration tasks.




You must enter your commands with no leading or trailing spaces, no quote marks, and exactly one space between arguments. This is due to the way the automarker works, even if your terminal/shell would be more forgiving.

- Install the package called redstone (assume that it exists):
- Fetch the latest version of the catalog file from the repository server, that shows what the latest version of each package is:

QUESTION 8

3 points 

A colleague has written a shell script called star. When they directly address it as ./star or /home/bob/code/star, it works, but just typing star gives an error message. Mark the following as true or false:

- ☐ False  The colleague has forgotten to set the +x bit on the script.
- ☐ False  To run a shell script without the ./ prefix, the file has to have the extension .sh.
- ☐ True  The error message appears because the folder containing the script is not on the shell's PATH.

QUESTION 9

2 points 

Select the correct statement describing the normal location of certain files in a POSIX system.

- ☐ /bin contains the "recycle bin" where deleted files are moved to. /usr contains folders that can be written to by normal (non-root) users. /etc contains system-wide configuration files.
- ☐ /bin contains the "recycle bin" where deleted files are moved to. /usr contains folders that can be written to by normal (non-root) users. /etc contains mount points for removable drives such as USB sticks or DVDs.
- ☐ /bin contains the "recycle bin" where deleted files are moved to. /home contains folders that can be written to by normal (non-root) users. /etc contains system-wide configuration files.
- ☐ /bin contains executable programs. /home contains folders that can be written to by normal (non-root) users. /etc contains mount points for removable drives such as USB sticks or DVDs.
- ☐ /bin contains executable programs. /usr contains folders that can be written to by normal (non-root) users. /etc contains system-wide configuration files.
- ☒ /bin contains executable programs. /home contains folders that can be written to by normal (non-root) users. /etc contains system-wide configuration files.
- ☐ /bin contains executable programs. /usr contains folders that can be written to by normal (non-root) users. /etc contains mount points for removable drives such as USB sticks or DVDs.

QUESTION 10

2 points 

Enter the command that you would use in the shell to delete a file called ruby.

Enter your command with exactly one space between arguments, no quote marks and no slashes (you can assume all files affected are in the current folder, and readable/writable).