

# Sample Solutions

## Assignment 1

CSCI 2132 — Winter 2019

### Question 1

- (a)
- `clever_hack.c`: `u=rw,g=r,o= (640)`
  - `NewSpiffyApp`: `u=rwx,g=rx,o= (750)`
  - Assuming the current directory is `NewSpiffyApp`, the following commands set the permissions correctly:  
`chmod 640 clever_hack.c` or `chmod u=rw,g=r,o= clever_hack.c` and  
`chmod 750 .` or `chmod u=rwx,g=rx,o= ..`
  - Again assuming the current directory is `NewSpiffyApp`, `ls -al` displays the details of the current directory and its contents, including the permissions of these files.
- (b) `C-c` to terminate the program, `C-l` to clear the screen
- (c) A program is a file that contains code that can be executed. A process executes a program after loading it into memory.

## Question 2

(a) `$ date`  
Tue Feb 26 08:10:52 AST 2019

(b) `$ date "+%H:%H %p %Z on %b %d, %Y"`  
08:08 AM AST on Feb 26, 2019

(c) `$ whoami`  
nzeh

or

```
$ echo $USER  
nzeh
```

(d) `$ id -u`  
1092

(e) `$ cat > user_info.txt`  
B00XXXXXX  
Norbert  
Zeh  
nzeh  
^D

(f) `$ cat user_info.txt`  
B00XXXXXX  
Norbert  
Zeh  
nzeh

(g) `$ sort user_info.txt`  
B00XXXXXX  
Norbert  
nzeh  
Zeh

or

```
$ cat user_info.txt | sort  
B00XXXXXX  
Norbert  
nzeh  
Zeh
```

```
(h) $ sort user_info.txt | head -1
B00XXXXXX
```

or

```
$ cat user_info.txt | sort | head -1
B00XXXXXX
```

```
(i) $ cat user_info.txt | wc -l
4
```

```
(j) $ cat user_info.txt user_info.txt > double_vision.txt
```

```
(k) $ chmod u=r,go= double_vision.txt
```

or

```
$ chmod 400 double_vision.txt
```

```
(l) $ ls -l double_vision.txt
-r----- . 1 nzeh csfac 54 Feb 26 08:20 double_vision.txt
```

### Question 3

```
(a) $ ls /usr/bin/*.sh
/usr/bin/fcsmotd.sh /usr/bin/lesspipe.sh /usr/bin/unix-lpr.sh
/usr/bin/gettext.sh /usr/bin/lprsetup.sh /usr/bin/url_handler.sh
/usr/bin/gvmap.sh /usr/bin/setup-nsssysinit.sh
```

```
(b) $ ls /usr/include/[ab]*.h
/usr/include/aio.h /usr/include/argp.h /usr/include/bfdlink.h
/usr/include/aliases.h /usr/include/argz.h /usr/include/byteswap.h
/usr/include/alloca.h /usr/include/ar.h /usr/include/bzlib.h
/usr/include/ansidecl.h /usr/include/assert.h
/usr/include/a.out.h /usr/include/bfd.h
```

```
(c) $ ls /usr/bin/a?????
/usr/bin/alpine /usr/bin/aspell /usr/bin/aulast /usr/bin/auvirt
```

## Question 4

(a) Your file `a1q4.java` should look something like this:

```
a1q4.java
import java.util.Scanner;

public class a1q4 {

    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        while (input.hasNext()) {
            String line = input.nextLine();
            String fields[] = line.split(",", -1);
            if (fields.length == 1) {
                System.out.println(line);
            } else {
                StringBuilder output = new StringBuilder();
                output.append(fields[fields.length - 1]);
                for (int i = 0; i < fields.length - 1; ++i) {
                    output.append(',');
                    output.append(fields[i]);
                }
                System.out.println(output.toString());
            }
        }
    }
}
```

(b)

```
$ javac a1q4.java
$ java a1q4 < spreadsheet.csv
$43000,Subaru,Forester
$29000,Toyota,Corolla
$38000,Mazda,5
$ java a1q4 < spreadsheet.csv | java a1q4
Forester,$43000,Subaru
Corolla,$29000,Toyota
5,$38000,Mazda
```