

# Week 03 Tutorial Questions

1. COMP2041 student Nelson wrote this script named **start\_lab03.sh** to run before the Week 3 lab.

```
#!/bin/sh
cd ~/labs/03
ex1=jpg2png
ex2=email_image
ex3=date_image
ex4=tag_music
```

But when he ran his script, it didn't seem to work:

```
$ pwd
/home/z1234567
$ ./start_lab03.sh
$ pwd
/home/z1234567
$ echo $ex1 $ex2 $ex3 $ex4
```

Why not, and can you fix the shell script?

2. The course code for COMP2041 has been changed to COMP2042 and the course code for COMP9044 has been changed to COMP9042. Write a shell script, `update_course_code.sh` which appropriately changes the `course_code` in all the files it is given as arguments.
3. Modify `update_course_code.sh` so if given a directory as argument it updates the course codes in files found in that directory and its sub-directories.
4. Write a shell script, `is_business_hours` which exits with a status of 0 if the current time is between 9am & 5pm, and otherwise exits with a status of 1.

Hint: the `date` command prints the current time in a format like this:

```
$ date
Sun Mar 18 12:57:08 EST 2012
```

5. CSE systems have a command, `mlalias`, which prints information about a specified mail alias. For example:

```
$ mlalias COMP2041-list
    alias: COMP2041-list
description: Udb alias list
addresses:
    z5000000
    z5000001
    .....
    z5555555
    andrewt
    owners: udb, cs2041
authorised posters: @Employee, @Subject_Utility, @Wheel
Moderator: udb
Status: system, closed, moderated, virtual, and public
```

Convert the output of the `mlalias` command into a new line separated list of CSE usernames, like this:

```
z5000000
z5000001
.....
z5555555
andrewt
```

6. CSE system have a command, `acc`, which prints information about a specified user. For example:

```
$ acc z5555555
      User Name : z5555555          Aliases :
      Uid : 25068
      Groups :
      Expires : 31 Dec 2019
      User classes : 3978_Student, COMP2041_Student[15dec2019]
                    : COMP2121_Student[15dec2019], COMP2511_Student[15dec2019]
                    : COMP1511_Tutor[16dec2019], COMP3900_Student[15dec2019]
      Name : Michael Yang Zhou
      Password last changed : 2019/03/02.21:23:19
      Home Directory : /import/adams/1/mzhou
      Name : Mr Zhou, Michael Yang (Michael Yang Zhou)
      Position : UGRD (Faculty of Engineering)
      UNSW Number : 5555555
      UNSW Mail : z5555555@unsw.edu.au
      UNSW Home : //INFPWFS219.ad.unsw.edu.au/Student038$/z5555555
      CSE Home : /import/kamen/3/z5555555
```

Write a pipeline which converts the output of `acc` into a new line separated list of courses the person is enrolled in, like this:

```
COMP2041
COMP2121
COMP2511
COMP3900
```

Make sure you don't include COMP1511 which Michael tutors.

7. Use the pipelines from the above 2 questions to write shell commands which print a list of courses taken by COMP2041 students with counts of how many COMP2041 students take each, like this:

```
55 COMP2911
37 COMP2121
17 COMP3311
10 COMP2111
9 COMP3331
.....
```

8. COMP2041 student Shruti has a 'friends' subdirectory in her home directory that contains images of her many friends. Shruti likes to view these images often and would like to have them appear in other directories within her CSE account so she has written a shell script to symbolically link them to the current directory:

```
for image_file in `ls ~/friends`
do
    ln -s "$~/friends/$image_file" .
done
```

The links created by Shruti's script are broken. Why? How can she fix her script?

9. Write a shell script named `is_prime.sh` which given an integer as argument, tests whether it is prime and prints a suitable message:

```
$ is_prime.sh 42
42 is not prime
$ is_prime.sh 113
113 is prime
```

Your script should exit with a non-zero exit status if its argument is not prime.

Write a second script named `primes.sh` which uses the first script to print all primes less than a specified value, e.g:

```
$ primes.sh 100
2
3
5
7
11
13
17
...
79
83
89
97
```

## Revision questions

The following questions are primarily intended for revision, either this week or later in session. Your tutor may still choose to cover some of these questions, time permitting.

1. COMP2041 student Big Bad Barry tries to impress a girl at a party by betting her she can't work out what this shell script:

```
#!/bin/sh
IFS=abc
echo "$*
```

prints when run like this:

```
$ ./script.sh mount inside
```

What does the script print?

Will the girl go out with Big Bad Barry?

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