

# CSCI 2132 - Assignment 3 - Sample Solution

This is only the answer for Q1 and Q2. The Q3 answer is provided as code.

## Question 1

- (a) A process is any program being executed on the system. A job is a process started from the current shell.
- (b) A foreground process has access to the terminal's output and keyboard input. A background process has access only to the former. While a foreground process is running, the shell cannot start more processes (because this would require access to the keyboard). No such restriction exists when running a background process.
- (c) With a centralized version control system, there is only one repository that all operations are applied to. With a distributed version control system, there may exist an arbitrary number of repositories with support to exchange commits between repositories.
- (d) The job can be suspended by pressing <sup>1</sup>z. To resume it, we use the fg shell command.
- (e) You add an & to the end of the command line.

(f) You suspend the job by pressing <sup>12</sup>~~z~~. Then the job is resumed in the background using the <sup>bg</sup> shell command.

## Question 2

(a) `ls -l | which less`

(b) `numlines=`cat file.txt | wc -l`; ((numlines = $numlines / 2)); head -n $numlines file.txt`

(c) `egrep '(...).*\1.*\1' /usr/share/dict/linux.words`

(d) Regex: `^[0-9]{1,3}(\.[0-9]{1,3}){3}$`