Daffodil International University

Department of Software Engineering

Faculty of Science and Information Technology

Semester: Fall-2017

Course Code: SWE232 **Course Title: Operating System Lab**

Section: A, B, C, D **Course Teacher: DMR, RH, MBTN**

Submission Due Date: 8-10-2017 **Total Marks: 34**

Objective: Ability to execute and understand GNU/Linux basic commands into the bash shell.

You may find these examples useful when preparing your shell program. However, remember to consult the assignment text in order to understand the potential differences between your program and the existing implementations of the shell program.

Exercises:

1. Simple commands

i) Does the following command exist, if the program fails, what is printed and Where?

date

ii) Does the following command exists, if the programs fails, what is printed and Where?

hello

2. Commands with parameters

iii) Explain the following command.

ls -al

iv) Does the following command exists, if the programs fails, what is printed and Where? Explain the use of '*'.

ls parser*

3. Redirections with in and out files

v) Explain the following three commands.

ls -al > tmp.1

cat < tmp.1 > tmp.2

diff tmp.1 tmp.2

4. Running background programs

vi) Explain the following three commands.

top&

top &

top

ps

Try to look at the parent process that is waiting for the child process. Run the list of commands several time and use kill (or use command 'kill -9 ProcessID') to see after which command it is possible to generate a prompt.

ps

Check if there are any zombies created. Notice that the shell program includes a while () loop that collects the children returns values.

5. Process communications (pipes)

vii) Explain the following two commands. What are the main differences between two commands? Does the prompt appear after the output of the command?

ls -al | wc

ls | sort –r

viii) When does the prompt appear now if you enter following command

ls | wc &

ix) Explain the following command

cat < tmp.1 | wc > tmp.3

x) Compare the following two outputs. Are they the same?

cat tmp.1 | wc

cat tmp.3

xi) What are the outputs? When the prompt does appear? Use Ctrl-D if necessary to let the grep finish and to the shell process takes over.

abf | wc

ls | abf

grep apa | ls

6. Built-in commands

xii) Try each of the following commands and explain for each why do we need to have them as built-in commands? Is there an error generated here?

cd ..

cd lab1

cd tmp.tmp

xiii) Does the commands work?

cd ..

cd lab1 | abf

ls

cd

Is there any error? Use **pwd** to see the current working directory.

xiv) Does the shell quits here, or does it consider exit as a text string to find in a file.

grep exit < tmp.1

% exit

And here? (replace the dot character with space)

xv) Is there an error here? Does the prompt appear?

grep exit | hej

grep cd | wc

Does an output appear? Does it appear after pressing Ctrl-D?

xvi) Are there any zombies now?

exit

xvii) Are there any errors here?

ls | wc-