Seneca | SCHOOL OF INFORMATION AND COMMUNICATIONS TECHNOLOGY

Unix Scripting

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What we have learned…

- Introduction to Shell Scripting
  - Categories of variables
  - Conditional Statements
  - Loops
- stdin, stdout, stderr Redirection and piping
- File descriptor
- Filtering
  - Simple filter commands: head, tail, cut, sort, wc
  - grep utility

Agenda

- Multiple Commands
  - Use () vs {}
  - Shell Level
  - Redirection

Warmup Activity

- What does the following script do? Explain it!
- `L_NUM=1`
- `while read LINE ; do`
- `    echo -e "$L_NUM:\t$LINE"`
- `    (( L_NUM++ ))`
- `done < output.txt`

Multiple Commands

- Besides piping, there are other ways that multiple commands may be placed in one line
  - `cmd1 ; cmd2; cmd3 ; …`
- Example:
  - `pwd; date;`
- What would be the output of the following:
  - `pwd; date; whoami > output.txt`

Multiple Commands

- You can perform “multiple command” using () or {} as follow:
  - (cmd1;cmd2;cmd3)
  - { cmd1;cmd2;cmd3; }
- Example:
  - `( pwd; date; whoami ) >output1.txt`
  - `{ pwd; date; whoami; }>output2.txt`
  - Any difference between above commands?

Let’s understand the difference of () vs {}

- Try to run the followings :
  - (m=“message1”; echo $m)
    - What do you see?
  - Run: echo $m
    - What do you get?
- Now, try to run the followings :
  - { n=“message2”; echo $m }
    - What do you see?
  - Run: echo $n
    - What do you get?

What is Shell Level

- When you run a command in a shell, it runs at the shell level.
- Within a shell, you can open another shell, which makes it a subshell of the shell that opened it.
- Therefore, the parent shell is considered the level 1 shell, and the child shell is a level 2 shell.

How to Display the Shell Level

- The way to tell which shell level you are running in is to use the $SHLVL variable.
  - echo $SHLVL

Why Is Shell Level Important?

- The shell level is important when thinking about the scope of variables within your scripts.
- Run the followings:
  - p=“Hello World”
  - echo $p
  - echo $SHLVL
  - bash
  - echo $p
  - echo $SHLVL
  - What have you observed?

difference of () vs {}

- () create a new shell level
- Each Shell Level has its own scope, and if you declare a variable in one level, you can’t reach that variable in a different level.
- {} doesn’t create a new shell level!

Let’s practice error redirection with Multiple commands

- Try the following:
  - (date ; ls -l nofile.txt) >output.txt
    - What does this do?
  - How do you redirect the error?

To redirect error

- Try the followings:
  - (date ; ls -l nofile.txt) &>output.txt
  - (date ; ls -l nofile.txt) 1>output.txt 2>>output.txt