

09 - Bash Scripting II

CS 2043: Unix Tools and Scripting, Spring 2016 [1]

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 - **lec08** is definitely worth taking a look at...**sed** is very powerful.

Scripting Recap

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 - Refer to [3] for more.

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#!/bin/bash
STATUS=$(echo "error string" > /dev/null)
echo "$STATUS"
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- Reference the exit code of the previous command with **\$?**

Bash Basics

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```
>>> echo $((2+3)) # standard addition
5
>>> echo $((2<3)) # less than: true is 1
1
>>> echo $((2>3)) # greater than: false is 0
0
>>> echo $((2/3)) # division: BASH IS ONLY INTEGERS!!!
0
>>> x=10 # set a variable
>>> echo $((x++)) # post increment: only for variables,
10 # does it AFTER...
>>> echo "$x" # ...but see it did increment
11
>>> echo $((++x)) # pre increment: only for variables,
12 # does it BEFORE....
>>> echo "$x" # ...only one increment took place
12
>>> sum=$((x+10)) # use variables like normal,
>>> echo "$sum" # note: no quotes "$x" (it is a number)
22
```

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 - the executable separated by whitespace *on the same line*.
- In bash, you use `#` to start a comment (line / end of line that will not execute).

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 - `$$` is the current process identification number (PID).
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 - `$* \implies "$1 $2 ... $n"`
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 - **\$* \implies "\$1 \$2 ... \$n"**
 - **\$@** expands **\$1 .. \$n** into individual strings.
 - **\$@ \implies "\$1" "\$2" ... "\$n"**

Simple Examples

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#!/bin/bash
# File: expansion.sh
# note the use of single quotes to get a literal *
echo 'This is the *:'
for var in "$*"; do
    echo "Var: $var"
done
echo 'This is the @:'
for var in "$@"; do
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`./expansion.sh hello there "billy bob"`

Conditonal Statements

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elif [[ CONDITION_3 ]] && [[ CONDITION_4 ]]; then
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- Note that you need spaces before and after the brackets!!!

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 - There are many of these, refer to [2] for more.

Loops

For Loops

```
for var in s1 s2 s3; do  
    cmd1  
    cmd2  
done
```

For Loops

```
for var in s1 s2 s3; do  
    cmd1  
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```
for var in {000..22}; do  
    cmd1  
    cmd2  
done
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For Loops

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    cmd1  
    cmd2  
done
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```
for var in {000..22}; do  
    cmd1  
    cmd2  
done
```

```
for (( i = 0; i < 10; i++ )); do  
    cmd1  
    cmd2  
done
```

While Loops

```
while [[ condition ]]; do  
    cmd1  
    cmd2  
done
```

While Loops

```
while [[ condition ]]; do  
    cmd1  
    cmd2  
done
```

```
FILE="filename.txt"  
while read line; do  
    cmd1  
    cmd2  
done < "$FILE"
```

While Loops

```
while [[ condition ]]; do
    cmd1
    cmd2
done
```

```
FILE="filename.txt"
while read line; do
    cmd1
    cmd2
done < "$FILE"
```

```
FILE="filename.txt"
for line in $(cat "$FILE"); do # NEVER DO THIS
    cmd1
    cmd2
done
```

References I

- [1] B. Abrahao, H. Abu-Libdeh, N. Savva, D. Slater, and others over the years.

Previous cornell cs 2043 course slides.

- [2] TLDP.

Introduction to if.

http://tldp.org/LDP/Bash-Beginners-Guide/html/sect_07_01.html#sect_07_01_01.

- [3] H. to Geek.

What's the difference between single and double quotes in the bash shell?

<http://www.howtogeek.com/howto/29980/whats-the-difference-between-single-and-double-q>

