





## **Shell Scripts**

### What is Shell Scripting?

Shell Scripting is an open-source computer program designed to be run by the Unix/Linux shell which could be one of the following:

- The Bourne Shell
- The C Shell
- The Korn Shell
- The GNU Bourne-Again Shell

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## **Shell Scripts**

### What is Shell Scripting?

- Typical activities that can be done in a shell, such as file manipulation, program execution, and printing text, can also be done with the shell script.
- Lengthy and repetitive sequences of commands can be combined into a single script that can be stored and executed anytime.

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# **Exercise 1**

- 1. Create a script named: "my-first-script.sh"

  It should print: "This is my first script."
- 2. Make the script executable.
- 3. Execute the script.



Homework

Create an environment that you don't need to provide "./" before your scripts while executing them.



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## Variables

- A variable is pointer to the actual data.
   The shell enables us to create, assign, and delete variables.
- The name of a variable can contain only letters (a to z or A to Z), numbers (0 to 9) or the underscore character (\_) and beginning with a letter or underscore character.
- The reason you cannot use other characters such as !, \*, or - is that these characters have a special meaning for the shell.

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```
$VARIABLE=value
$echo $VARIABLE
value
$
$my_var=my_value
$echo $my_var
my_value
$
$my-var=my-value
my-var=my-value: command not
found
$
$myvar?=my-value
myvar?=my-value: command not
found
```

## Variables

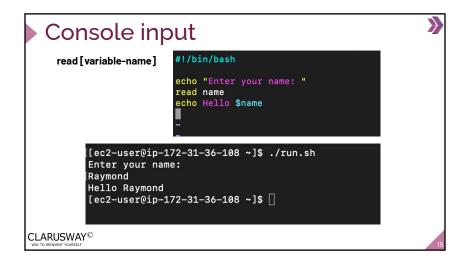
#### variable=value

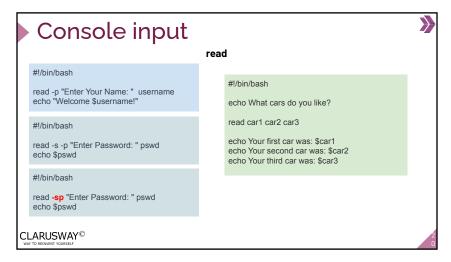
This is one of those areas where formatting is important. Note there is no space on either side of the equals ( = ) sign. We also leave off the \$ sign from the beginning of the variable name when setting it.

sampledir=/etc
ls \$sampledir

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```
$ myvar='Hello World'
$ echo $myvar
Hello World
$ newvar="More $myvar"
$ echo $newvar
More Hello World
$ newvar='More $myvar'
$ echo $newvar
More $myvar
$ __
```



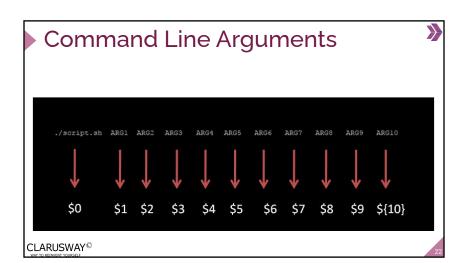


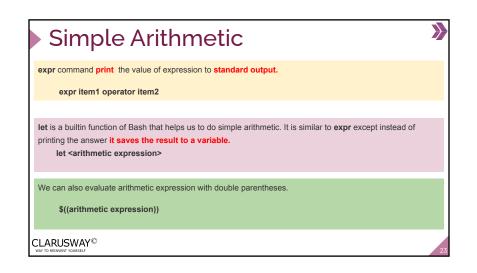


- \$0 The name of the Bash script.
- **\$1 \$9** The first 9 arguments to the Bash script.
- \$# How many arguments were passed to the Bash script.
- \$@ All the arguments supplied to the Bash script.
- **\$?** The exit status of the most recently run process.
- \$\$ The process ID of the current script.
- **\$USER** The username of the user running the script.
- **\$HOSTNAME** The hostname of the machine the script is running on.
- **\$SECONDS** The number of seconds since the script was started.
- **\$RANDOM** Returns a different random number each time is it referred to.
- **\$LINENO** Returns the current line number in the Bash script.

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```
#!/bin/bash
first_number=8
second_number=2
echo "SUM=" expr $first_number + $second_number'
echo "SUB=" expr $first_number - $second_number'
echo "MUL=" expr $first_number \* $second_number'
echo "DIV=" expr $first_number / $second_number'
echo "DIV=" expr $first_number / $second_number'

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```

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Arithmetic Expressions

let [expression]

#!/bin/bash
number1=8
number2=2
let total=number1+number2
let diff=number1-number2
let div=number1*number2
let div=number1/number2
echo "Total = Stotal"
echo "Difference = $diff"
echo "Multiplication = $mult"
echo "Division = $div"

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```

```
"num++" "++num" "num--" "--num"
             #!/bin/bash
             number=10
             let new_number=number++
             echo "Number = $number"
             echo "New number = $new_number"
             number=10
             let new_number=--number
             echo "Number = $number"
             echo "New number = $new_number"
                  [ec2-user@ip-172-31-91-206 ~]$ ./run.sh
                  Number = 11
                  New number = 10
                  Number = 9
                 New number = 9
                 [ec2-user@ip-172-31-91-206 ~]$
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```

```
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## **Exercise 1**

- 1. Ask user to enter two numbers to variables **num1** and **num2**.
- 2. Calculate the total of 2 numbers.
- 3. Print the total number and increase it by 1.
- 4. Print the new value of the total number.
- Subtract num1 from the total number and print result.
- 6. Change the **num1** and **num2** variables to be passed from the **Command line arguments** instead of receiving them from the user

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# **Exercise 2**

1. Create a script named calculate.sh:

Create a variable named base\_value with default value of 5

Request another number from user and assign it to user\_input variable

Add user\_value to the base\_value and assign it to total variable

Print total to the screen with the message "Total value is:"

- 2. Make the script executable.
- 3. Execute the script.

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# THANKS!

**Any questions?** 

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