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[Lesson 9](https://bnfplayground.pauliankline.com/?bnf=%3Cexpression%3E%20%3A%3A%3D%20%22(%22%20%3Cexpression%3E%20%3Coperator%3E%20%3Cexpression%3E%20%22)%22%20%7C%20%3Cnumber%3E%0A%3Cnumber%3E%20%3A%3A%3D%20%3Cinteger%3E%20%3Cdecimal%3E%3F%0A%3Cinteger%3E%20%3A%3A%3D%20%220%22%20%7C%20%3Cno_zero_digit%3E%20%3Cdigit%3E*%20%7C%20%3Ccomma_separated_integer%3E%0A%3Ccomma_separated_integer%3E%20%3A%3A%3D%20%3Cinteger_breakdown%3E%20(%22%2C%22%20%3Cdigit%3E%20%3Cdigit%3E%20%3Cdigit%3E)%2B%0A%3Cinteger_breakdown%3E%20%3A%3A%3D%20%3Cno_zero_digit%3E%20%3Cdigit%3E%20%3Cdigit%3E%20%7C%20%3Cno_zero_digit%3E%20%3Cdigit%3E%20%7C%20%3Cno_zero_digit%3E%0A%3Cdecimal%3E%20%3A%3A%3D%20%22.%22%20%3Cdigit%3E%20%3Cdigit%3E*%0A%3Cdigit%3E%20%20%3A%3A%3D%20%220%22%20%7C%20%221%22%20%7C%20%222%22%20%7C%20%223%22%20%7C%20%224%22%20%7C%20%225%22%20%7C%20%226%22%20%7C%20%227%22%20%7C%20%228%22%20%7C%20%229%22%0A%3Cno_zero_digit%3E%20%3A%3A%3D%20%221%22%20%7C%20%222%22%20%7C%20%223%22%20%7C%20%224%22%20%7C%20%225%22%20%7C%20%226%22%20%7C%20%227%22%20%7C%20%228%22%20%7C%20%229%22%0A%3Coperator%3E%20%3A%3A%3D%20%22%20%2B%20%22%20%7C%20%22%20-%20%22%20%20%7C%20%22%20*%20%22%20%7C%20%22%20%2F%20%22%0A&name=)

Lesson 9 above is a link to this screenshot completed and can be ran to test.A computer screen with white text and yellow and green text

Description automatically generated

<expression> ::= "(" <expression> <operator> <expression> ")" | <number>

<number> ::= <integer> <decimal>?

<integer> ::= "0" | <no\_zero\_digit> <digit>\* | <comma\_separated\_integer>

<comma\_separated\_integer> ::= <integer\_breakdown> ("," <digit> <digit> <digit>)+

<integer\_breakdown> ::= <no\_zero\_digit> <digit> <digit> | <no\_zero\_digit> <digit> | <no\_zero\_digit>

<decimal> ::= "." <digit> <digit>\*

<digit> ::= "0" | "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9"

<no\_zero\_digit> ::= "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9"

<operator> ::= " + " | " - " | " \* " | " / "

Lesson 10:

PowerShell to check chrome version and update if needed:

$host.ui.RawUI.WindowTitle = "Updating ChromeDriver"

Write-Host "Updating ChromeDriver`n`n"

#Grabs current user name#####

$currentUser = $env:UserName

#############################

cd ("C:\Users\" + $currentUser +"\Documents")

if (Get-Module -ListAvailable -Name Selenium) {

Import-Module Selenium

}

else {

Write-Host "You are about to install the Selenium module to your documents folder."

Write-Host "Press enter if you wish to continue with this installation"

Write-Host "You may be asked to accept permissions. Please select the 'Yes To All' Option`n`n"

Write-Host "If you do not know what this means, or you are running into other errors, please close this window and contact your tech team"

pause

Install-Module Selenium -Scope CurrentUser

}

# Obtains the latest version of the chromedriver from the offical website and stores in the variable latestVersion

$latestVersion = Invoke-WebRequest -Uri "https://chromedriver.storage.googleapis.com/LATEST\_RELEASE" | Select-Object -ExpandProperty Content

#Checks to make sure a current version file exists

$currentVersion = "C:\Users\" + $currentUser + "\documents\chromeDriverVersion.txt"

#Pulls information stored locally as to what the current version installed is

if (Test-Path $currentVersion) {

$chromeVersion = Get-Content -path ("C:\Users\" + $currentUser + "\documents\chromeDriverVersion.txt")

} else {

$chromeVersion = 0

}

# Check if the current version of Chromedriver matches the latest version######################################################################

if ($latestVersion -ne $chromeVersion) {

Write-Host "Updating Chromedriver to version $latestVersion"

#Variable for the file path because Invoke-WebRequest does not allow for the + sign to include the variable of the version.

$URI = "https://chromedriver.storage.googleapis.com/" + $latestVersion + "/chromedriver\_win32.zip"

# Download the latest version of Chromedriver

Invoke-WebRequest -Uri $URI -OutFile chromedriver.zip

Write-Host "chromedriver.zip successfully downloaded"

# Extract the Chromedriver executable

Expand-Archive chromedriver.zip -DestinationPath ("c:\users\" + $currentUser + "\documents\WindowsPowerShell") -Force

# Clean up the downloaded zip file

Remove-Item chromedriver.zip

Write-Host "chromedriver.zip has been deleted"

#Write the version of the chromedriver to a file for next run

Copy-Item ("C:\Users\" + $currentUser + "\documents\WindowsPowerShell\chromedriver.exe") -Destination ("C:\Users\" + $currentUser + "\documents\WindowsPowerShell\Modules\Selenium\3.0.1\assemblies") -Force

Write-Host "chromedriver.exe has been moved to proper directory"

#Saves the current version number of the downloaded webdriver so this section only runs if this file doesn't exist or doesn't match

$latestVersion | Out-File ("C:\Users\" + $currentUser + "\documents\chromeDriverVersion.txt")

Write-Host "current version saved to file"

Remove-Item ("C:\Users\" + $currentUser + "\documents\WindowsPowerShell\chromedriver.exe")

Write-Host "Deleted second copy of chromedriver.exe"

pause

}

else {

Write-Host "Chromedriver is already up to date"

Pause

}

################################################################################################################################################

A screenshot of a computer error

Description automatically generated

If already up to date:

A computer screen with white text

Description automatically generated

If needed to be updated:

A computer screen shot of a blue screen

Description automatically generated

Script also includes the ability to run selenium because I initially thought that was required. After further review I realized that is outside the scope of the point of this assignment, but I am leaving it there anyways because in and of itself it is another test. If the Selenium module is not available, it will install that as well with little user interaction. The only thing I could not account for was the execution policy because that has to be set outside the program for the program to be able to run.