School of
Science
ECU
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EDITH COWAN
UNIVERSITY

CSP2101 Scripting Languages: Workshop 6

Watch the five (5) bash function demonstration videos

These videos demonstrate how to design, construct and test bash functions designed to performed repetitive tasks and/or modularise commonly used blocks of code.

Watch the three (3) Doing Maths in Bash videos

These videos demonstrate how to perform basic to more advanced mathematical calculations in bash. As functions are often designed to perform commonly used mathematical calculations, understanding the performance of calculations in bash is important.

Prepare for Workshop Tasks

- Log into your Ubuntu Virtual Machine, and complete the tasks below

- To complete these tasks you will need a copy of the following files:

    o ws6a.sh

    o ws6b.sh

    o attdata.txt

    o attdata2.csv

- You can use the Firefox browser in your Ubuntu Virtual Machine to download these files from Blackboard (these are in *wsfiles.zip*)

- Ensure that all of the scripts you write are fully commented to clearly explain their functionality at every step

Task 1

1. Using the pre-made script named ws6a.sh, add the code required to the function getsumlines() that retrieves all lines in a given file that contain monetary sums of *$10,000* or greater and writes these to a file named results.txt
2. The input file has been provided and is named attdata.txt
3. The function is called in the ws6a.sh script as getsumlines attdata.txt
4. Do **not** change any of the code in the script outside of the declared function
5. Your function code is working as required when you get the following output to terminal:

```
vbrown@LAPTOP-N6EFE714:~/sl/workshops/ws6$ ./ws6a.sh
The city paid a $600,000 ransom in June 2019 to recover files following a ransomware attack
One paid $75,000 to recover its encrypted files.
Ransomware downtime costs organisations more than $64,000 on average.
Ransomware is costing businesses more than $75,000,000 per year
We have no idea why they didn't just ask for $10,000 flat.
Another study noted that a quarter of businesses would be willing to pay between $20,000 and $50,000 to
```

6. If you encounter an error, read the error message printed to the terminal carefully and attempt to resolve the issue and run the ws6a.sh script again or ask your tutor for assistance
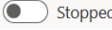
Task 2

1. Using the pre-made script named ws6b.sh, add the code required to the function makemenu() to create a menu from which the user can choose a port number in the attdata2.csv file for further analysis (the port numbers are the first column of the attdata2.csv file)
2. The input file has been provided and is named attdata2.csv
3. The function is called in the ws6b.sh script as makemenu() $selfile (where $selfile is the variable that holds attdata2.csv)
4. Do **not** change any of the code in the script outside of the declared function
5. The final output of the script to the terminal will be the port number selected by the user
6. Your function code is working as required when you get the following output to terminal:

```
vbrown@LAPTOP-N6EFE714:~/sl/workshops/ws6$ ./ws6b.sh
What file do you wish to analyse?: attdata2.csv
[23] [6660] [1080] [53] [31337] [22] [161]
Select a port from the list above to analyse: 161
161
```

7. If you encounter an error, read the error message printed to the terminal carefully and attempt to resolve the issue and run the ws6b.sh script again or ask your tutor for assistance

Close Down (Important)

1. Close *VS Code*

2. Close any other applications you have open on your Ubuntu Virtual Machine

3. Close the Remote Desktop connection to your Ubuntu Virtual Machine

4. Return to the Azure Labs webpage and **stop** your Ubuntu Virtual Machine by clicking the Start/Stop toggle button

5. Once your Ubuntu Virtual Machine has been stopped ⬤◯ Stopped , you can then sign out of your Azure Labs account