Linux lab 4 – Script introduction

During this laboration we will learn a basic set of commands that we will need during the remainder of the course. The main idea is to get the skills needed to be able to experiment on your own.

Suggestion: first of all – write down or try to illustrate WHAT you want the script to do, step by step. THEN implement it. This makes it much easier for the assistant to help you understand where things went wrong.

The virtual machine is prepared with two text editors to chose from when editing your shell scripts. One is nano based and performs syntax highlightening of keywords and is started by be, bedit or bashedit. The other alternative is to use gedit that is automatically configured to highlight syntax in files if it is able to detect the type (make sure the file ends with .sh). I have also added a few extra commands to the configuration; <CTRL><F5> to run (don't forget to save first), <CTRL><SHIFT><F5> to debug, <CTRL><F6> to perform chmod 644 and <CTRL><F7> to open a terminal. If you select some text in your document this text will be sent as arguments to the script (you could put argument combinations towards the top of your file as a comment).

Assignments marked with * are optional.

Goals

- To be able to use a basic set of built in commands in sh.
- To be able to interact with a basic set of Linux commands from sh.
- To be able to analyze the flow of simple scripts.
- To be able to write simple scripts with flow control.
- To understand how to use variables.

Preparations: Look up examples of how to use the following in sh.

echo ____

if ____

for ____

case ____

while ____

variables ____

arguments ____

read ____

Laboration

1. Create a skeleton for a bash script. Save it and use it as a template for coming exercises.
2. To avoid overwriting the template, write protect the file.
3. To make it possible to execute the scripts based on the template easily, make the template executable.
4. Create a script that prints “Hello world!” to the display.
5. Modify #4 to store “Hello world!” in a variable and then write the variable to the screen.
6. Create a script that asks for the users name and prints “Hello <the users name>! How are you?”.
7. Create a script that asks for the users name and prints it ten times. Use the for construct.
8. Create a script that prints the arguments $0 - $3.
9. Create a script that prints the number of arguments sent.
10. Create a script that asks for two numbers, a and b, and print “a > b” if a>b or “a < b” otherwise using the if-construct.
11. Update the script in #10 and make it output “a = b” if a = b. Use the if-construct.
12. Create a script that executes the command “ping” with argument $1 as the argument.
13. * Create a menu that allows the user to choose from a set of commands and then execute the chosen command with parameter $1 as the argument. Se example:

    ```
    node> menu 192.168.0.175
    trace = traceroute [ip]
    ping = ping [ip]
    ssh = ssh –X [ip]

    Select: ping

    Executing command ping...
    ping 192.168.0.175
    _
    ```

14. * Modify #13 so the menu is reprinted after each execution and asks for a new command. Also add the new command “quit” that exits the script. Print suitable error messages.