NATIONAL INTEGRATED CYBERINFRASTRUCTURE SYSTEM
CHPC

NITheP
National Institute for Theoretical Physics

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Bash Scripting Part 4

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Summary of commands used in this lecture

Command	Meaning
ls	List items in current directory
nano	Command line text editor in Linux
Ctrl+X > Y > Enter	Sequence used when saving changes to a file created/edited in nano
cat	Concatenate a file/s
chmod	Modify file permissions
#!/bin/bash	Shebang
echo	Print text to screen
$var	Print the contents of the variable var
for var in XX; do …; done	Perform an iterative task

- As in the previous lectures all commands provided in **BOLD** and center aligned from here onwards are commands that can be typed/executed directly in a terminal.

- If you are in your home directory first make sure you change directory to the Linux_scripts before continuing:

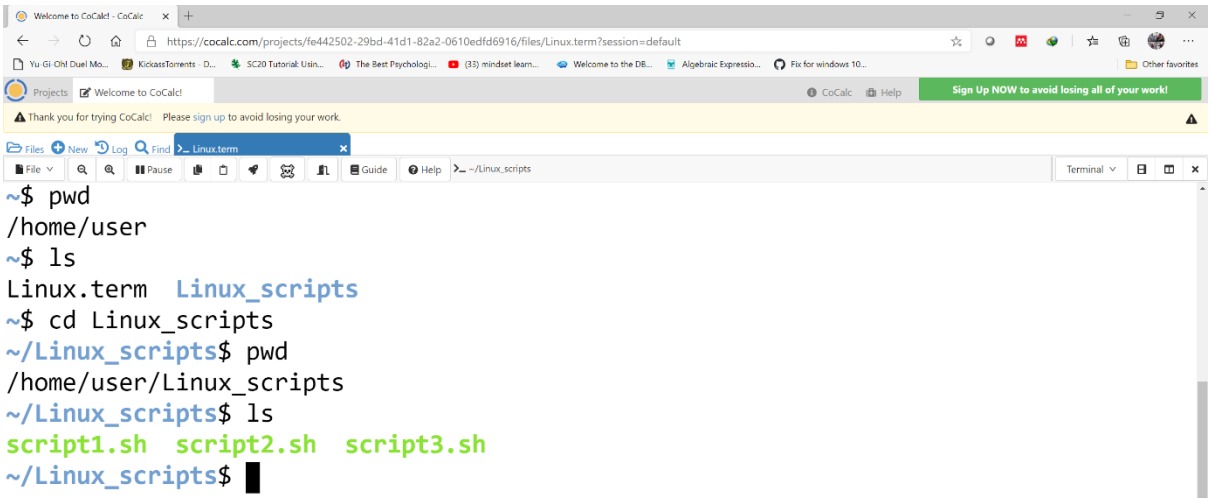
pwd

ls

cd Linux_scripts

pwd

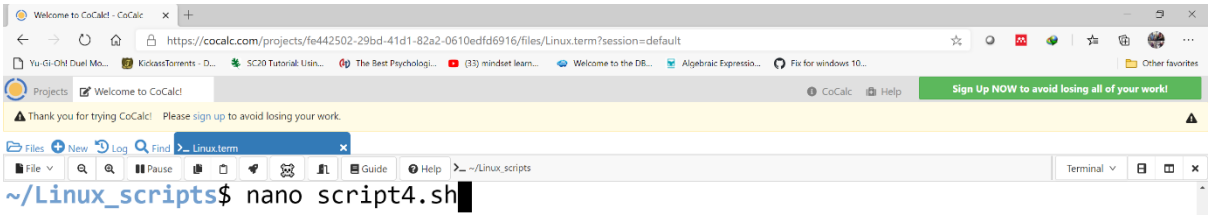
ls



- You should see the scripts from the previous lectures and if you completed **Exercise 9** you will also have a file called number.txt contained in your directory.

- You can have a loop that continues until a value specified by a user:

nano script4.sh



- The loop in this case has a variable called **outer** which starts with a value of 1 and it continues until the variable **outer** is either less then or equal to the variable **line** (the value obtained from the users' input).

  The last part in the for statement increments the value of **outer** by 1.

- Use **Ctrl+X** > **Y** > **Enter** to exit **nano**, save the changes and end up back on the terminal.

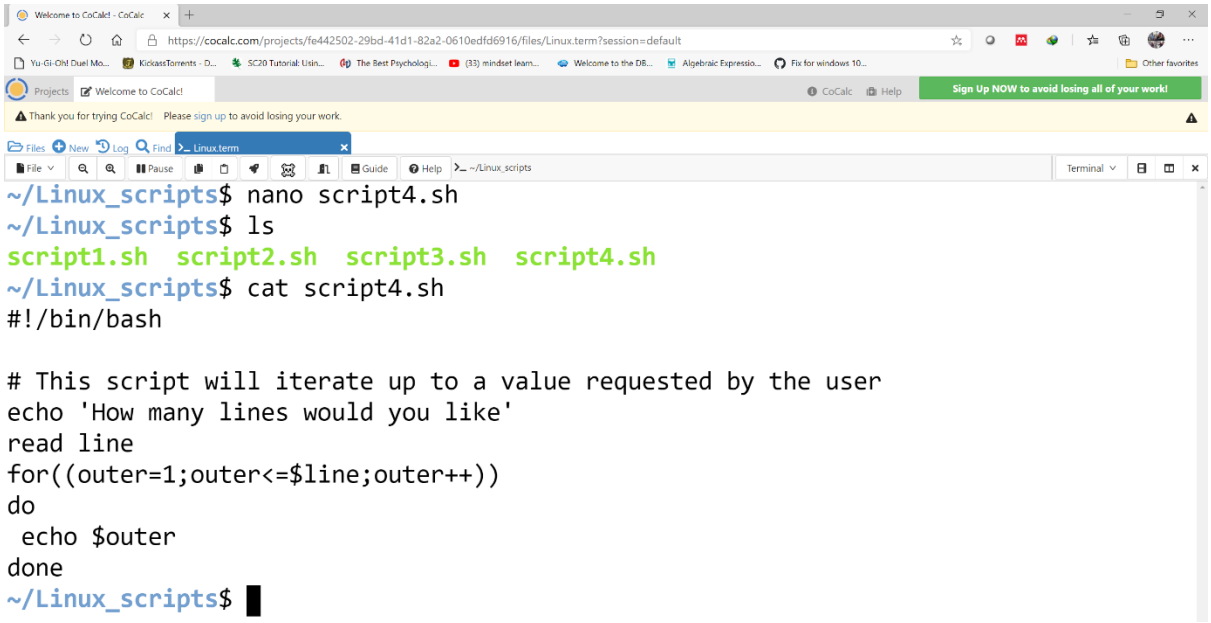
  Check that the file exists, that it has the information we require and make it executable:

  ls

  cat script4.sh

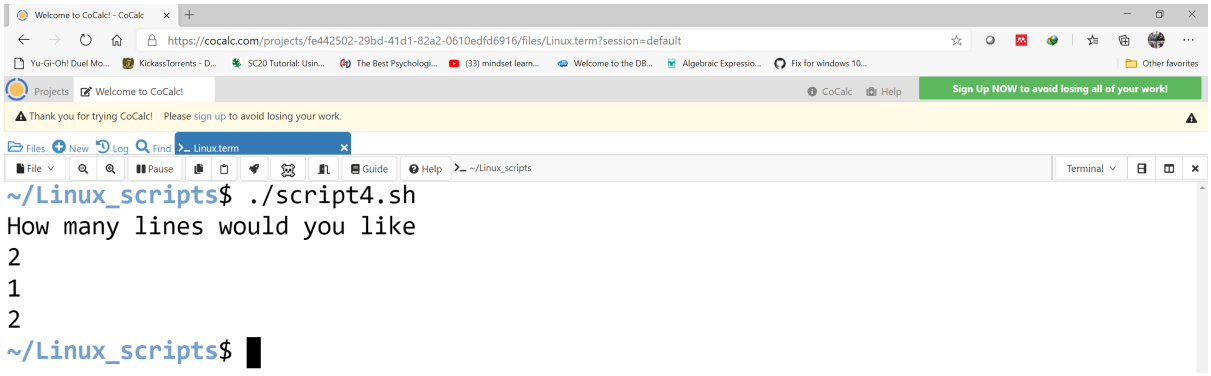
  chmod u+x script4.sh

Note the double brackets used in the for loop as this is required when creating a loop where you declare a variable and increment that variable by 1 all in the same statement.



- Now we will run this script to understand how the loop works:

./script4.sh



- I entered a value of 2, so when the script gets to the loop it starts with a value of outer equal to 1. This is less than or equal to **line** (which is the value of 2 that I entered) so the do statement gets executed and we end up with the value 1 being printed to screen. Outer is then incremented by 1 to become 2, which is also less than or equal to **line** and once again the do statement gets executed this time printing the value of 2.
  Outer gets incremented by 1 again to become 3, which is NOT less than or equal to **line** causing the loop to stop executing.

- This brings us to the end of **Bash Scripting Part 4**.

- At this point you should try to expand on the script above by completing **Exercise 10**.