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/* CPSC 457 (Winetr 2019)
 * Week 2 - Day 2
 * Sina Keshvadi
 *
 * Notes: No error handling!
 */
========================================================================
What is Shell Programming?
• Commonly known as Shell Scripts
• A script is a collection of commands that are stored in a file
• Mostly used for automate things
========================================================================
Why Shell Scripts?
• Too many commands to remember.
• Automate things:
• Scheduled task (e.g., backup at 3am everyday)
• Certain sequence of commands are often being executed.
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To run bash scripts,
1. Save your codes in filename.sh (the first line should be #!/bin/bash)
2. Opent Terminal and write :
sudo chmod +x filename.sh
3. Run the bash file by
./filename.sh
========================================================================
File Permission
• Every file in linux has 3 permission attributes
1. Owner permission
2. Group permission
3. World permission
• To view the permissions of files and directories, use the following
command
• $ls -l

Example 01 - Hello World ================================================================
#!/bin/sh
echo "Hello world"

Example 02 - Shell Script Arguments ======================================================

#!/bin/bash

# example of using arguments to a script
echo "My first name is $1"
echo "My surname is $2"
echo "Total number of arguments is $#"

(run the above code by append arguments in terminal. for example ./a.sh Name Family)

Example 03 - Hello User ==================================================================

#!/bin/bash
v="Hello $USER"
echo $v

Example 04 - Variables ===================================================================
#!/bin/bash
a=12;
b=13;
str="Hello World"

echo $str;
```

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echo $a+100;

Example 05 - Functions ============================================================
#!/bin/bash
function numbers {
for i in {10..20}
do
echo $i
done
}

function hello
{
echo hello
}

hello
sleep 1
numbers
exit

Example 06 - IF ===================================================================
#!/bin/bash
pass="Test"
if [ "$pass" = "Test" ] ;
echo "That is okay !"
then exit;
fi

Example 07 - IF and Else ==========================================================
#!/bin/bash
pass="wrong"
if [ "$pass" = "Test" ] ; then
 echo "That is okay !"
else
 echo "That is not okay :("
fi

Example 08=========================================================================
#!/bin/bash
# this script is about password !! and read from user
echo "What is the password ? "
sleep 3
read pass
if [ "$pass" = "password" ] ;  then
         echo "That is okay !"
elif [ "$pass" = "ubuntu" ] ; then
        echo " nice "
else
        echo "That is not okay, " $pass " is not password :("
fi

Example 09 - Loop==================================================================
#!/bin/bash
for i in {0..100..10}
do
  echo number $i
done

Example 10 - Using linux command ==================================================
#!/bin/bash
ls > out.txt
```

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cat out.txt

echo $(date)

Example 11==========================================================================
This code find all .cpp files in your directory.

#!/bin/bash
while IFS= read -r line; do echo "$line"; done< <(ls *.cpp)

Example 12==========================================================================
First create a folder with at least 10 images. Then create an empty folder namely
"out" in this Folder. Then write this code and run.
// Resize all jpg images and store in folder out

#!/bin/bash
while IFS= read -r line; do convert -resize 100 "$line" "out/$line"; done< <(ls *.jpg)

Example 13 - assignment 2 ==========================================================
Other useful commands for assignment 2
• Search for files: find
• Sorting: sort
• Pattern scanning: awk

Example 14==========================================================================
find all .cpp files

find /home/grads/sina.keshvadi1 -name "*.cpp"

Example 15==========================================================================
Delete all .cpp files

find /home/grads/sina.keshvadi1/OS -name "*.cpp" -delete

Example 16==========================================================================
Find 3 largest files in the a directory and its subdirectories

find /home/grads/sina.keshvadi1 -printf '%s %p\n'| sort -nr | head -3
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Check this for more info - https://www.shellscript.sh
```