Free & Open Source Software
Lab Report

Shell Programming Practice Questions

Arun Jose
S4 CSE
Roll No. 12

Computer Science and Engineering
College of Engineering Trivandrum
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1.1 Aim

1 a Write a sed command that deletes the first character in each line in a file.
b Write a sed command that deletes the last character in each line in a file.
c Write a sed command that swaps the first and second words in each line in a file.
2 a Use the who command and redirect the result to a file called myfile1. Use the more command to see the contents of myfile1.
3 a Write a shell script that takes a command –line argument and reports on whether it is directory, a file, or something else.
b Write a shell script that accepts one or more file name as arguments and converts all of them to uppercase, provided they exist in the current directory.
c Write a shell script that determines the period for which a specified user is working on the system.
4 a Write a shell script that accepts a file name starting and ending line numbers as arguments and displays all the lines between the given line numbers.
b Write a shell script that deletes all lines containing a specified word in one or more files supplied as arguments to it.
5 a Write a shell script which accepts any number of arguments and prints them in the reverse order.
(Output:
sh 1prg.sh a b c
No of arguments arguments are 3
Arguments in reverse order c b a).
b Write a shell script that accepts two file names as arguments, checks if the permissions for these files are identical and if the permissions are identical, output common permissions and otherwise output each file name followed by its permissions.
c Write a shell script to validate password strength. Here are a few assumptions for the password string. Length – minimum of 8 characters. Contain both alphabet and number. Include both the small and capital case letters. If the password doesn't comply with any of the above conditions, then the script should report it as a <Weak Password>.

1.2 Source Code

```
#Aim:
#1 a  Write a sed command that deletes the first character in each line in a file
# b  Write a sed command that deletes the last character in each line in a file
# c  Write a sed command that swaps the first and second words in each line in a
#2  a  Use the who command and redirect the result to a file called myfile1. Use
# command to see the contents of myfile1.
#3  a  Write a shell script that takes a command -line argument and reports on wh
# is directory, a file, or something else
```

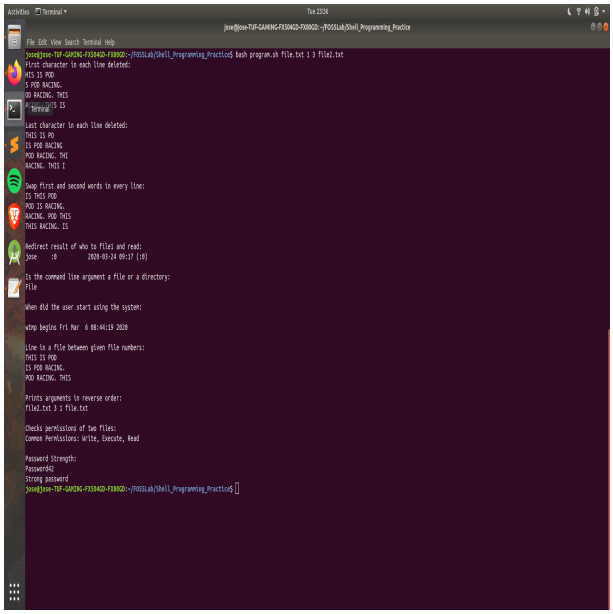
```
# b  Write a shell script that accepts one or more file name as arguments and con
# of them to uppercase, provided they exist in the current directory
# c  Write a shell script that determines the period for which a specified user i
# on the system
#4  a  Write a shell script that accepts a file name starting and ending line num
# arguments and displays all the lines between the given line numbers.
# b  Write a shell script that deletes all lines containing a specified word in o
# files supplied as arguments to it
#5  a  Write a shell script which accepts any number of arguments and prints them
# reverse order (Output:
# sh 1prg.sh a b c
# No of arguments arguments are 3
# Arguments in reverse order c b a)
# b  Write a shell script that accepts two file names as arguments, checks if the
# permissions for these files are identical and if the permissions are identical,
# common permissions and otherwise output each file name followed by its
# permissions.
# c  Write a shell script to validate password strength. Here are a few assumptio
# password string.
# Length - minimum of 8 characters.
# Contain both alphabet and number.
# Include both the small and capital case letters.
# If the password doesn't comply with any of the above conditions, then the scrip
# should report it as a <Weak Password>."
#Written By:
#Arun Jose
#S4CS
#Roll No. 12
>file1.txt

echo "First character in each line deleted: "
sed "s/^.//g" file.txt
echo ""

echo ""
echo "Last character in each line deleted: "
sed "s/.$//" file.txt
echo ""

echo ""
echo "Swap first and second words in every line: "
sed -e "s/\([^ ]*\) *\([^ ]*\)/\2 \1 /g" file.txt
echo ""
```

```
echo ""
echo "Redirect result of who to file1 and read: "
OUTPUT="$(who)"
echo "${OUTPUT}" >> file1.txt
more file1.txt

echo ""
echo "Is the command line argument a file or a directory: "
ARG=$1
if [ -d "${ARG}" ] ; then
    echo "Directory";
else
    if [ -f "${ARG}" ]; then
        echo "File";
    else
        echo "Other";
        exit 1
    fi
fi

for i in $*
do
if [ -f $i ]
then
a="$(tr '[a-z]' '[A-Z]' < $i)"
>$i
echo "${a}" >> $i
fi
done

echo ""
echo "When did the user start using the system: "
last who

echo ""
echo "Line in a file between given file numbers: "
s=$2
n=$3
sed -n $s,$n\p file.txt

for i in $*
do
```

```
if [ -f $i ]
then
sed -ie '/POD/d' $i
fi
done

echo ""
echo "Prints arguments in reverse order: "
for i in "$@"
do
j=$i" "$j
done
echo "$j"

echo ""
echo "Checks permissions of two files: "
dir1=$1
dir2=$4
[ -w $dir1 ] && W1="Write = Yes" || W1="Write = No"
[ -x $dir1 ] && X1="Execute = Yes" || X1="Execute = No"
[ -r $dir1 ] && R1="Read = Yes" || R1="Read = No"

[ -w $dir2 ] && W2="Write = Yes" || W2="Write = No"
[ -x $dir2 ] && X2="Execute = Yes" || X2="Execute = No"
[ -r $dir2 ] && R2="Read = Yes" || R2="Read = No"

if [ "$W1" == "$W2" ] && [ "$X1" == "$X2" ] && [ "$R1" == "$R2" ]
then
    echo "Common Permissions: Write, Execute, Read"
else
 echo "$dir1 Permissions: "
 echo "Write: $W1"
 echo "Execute: $X1"
 echo "Read: $R1"
 echo ""
 echo "$dir2 Permissions: "
 echo "Write: $W2"
 echo "Execute: $X2"
 echo "Read: $R2"
fi

echo ""
echo "Password Strength: "
```

```
read password
char="$(echo -n $password | wc -m)"
alphanum=0
if [[ $password =~ [[:alpha:]] && $password =~ [[:digit:]] ]]; then
    alphanum=1
fi
case=0
if [[ "$password" =~ [[:upper:]] ]]; then
   if [[ "$password" =~ [[:lower:]] ]]; then
   case=1
   fi
fi
if [ $char > 8 ]
then
if [ $alphanum == 1 ]
then
if [ $case == 1 ]
then
echo "Strong password"
else
echo "Weak password"
fi
else
echo "Weak password"
fi
else
echo "Weak password"
fi
```

1.3 Sample



1.4 Result

The shell script was made and the output was verified. The script was run on Ubuntu 18.04.3 LTS.