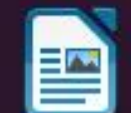




shruti@shruti-VirtualBox: ~



```
cat: hello.txt: No such file or directory
shruti@shruti-VirtualBox:~$ cat > hello.txt
hello
```

```
world
```

```
welcome to shell scripting
^C
```

```
shruti@shruti-VirtualBox:~$ cat hello.txt
hello
```

```
world
```

```
welcome to shell scripting
shruti@shruti-VirtualBox:~$ nano removeEmpty.sh
shruti@shruti-VirtualBox:~$ chmod +x removeEmpty.sh
shruti@shruti-VirtualBox:~$ ./ removeEmpty.sh hello.txt
bash: ./: Is a directory
shruti@shruti-VirtualBox:~$ ./removeEmpty.sh hello.txt
All empty lines of the file hello.txt have been deleted
shruti@shruti-VirtualBox:~$ cat hello.txt
```

```
hello
```

```
world
```

```
welcome to shell scripting
```

```
shruti@shruti-VirtualBox:~$
```



shruti@shruti-VirtualBox: ~



GNU nano 4.8

removeEmpty.sh

#!/bin/bash

```
if [ $# -ne 1 ]; then
    echo "Usage: $0 <filename>"
    exit 1
fi
```

```
if [ ! -f $1 ]; then
    echo "Error: $1 is not a file"
    exit 1
fi
```


```
tempfile=$(mktemp)
```

```
sed '/^$/d' $1 > $tempfile
```

```
mv $tempfile $1
```

```
echo "All empty lines of the file $1 have been deleted"
```

[Read 22 lines]

 ^G Get Help

^O Write Out

^W Where Is

^K Cut Text

^J Justify

^X Exit

^R Read File

^_ Replace

^U Paste Text

^T To Spell



shruti@shruti-VirtualBox: ~



```
shruti@shruti-VirtualBox:~$ nano operators.sh
shruti@shruti-VirtualBox:~$ chmod +x opeators.sh
chmod: cannot access 'opeators.sh': No such file or directory
shruti@shruti-VirtualBox:~$ chmod +x operators.sh
shruti@shruti-VirtualBox:~$ ./operators.sh 1234+
The + of the digits of 1234 is 10
shruti@shruti-VirtualBox:~$
```




shruti@shruti-VirtualBox: ~



GNU nano 4.8

operators.sh

```
number=${1%?} # remove the last character
operator=${1: -1} # get the last character

if ! [[ $number =~ ^[0-9]+$ ]]; then
    echo "Error: $number is not a valid number"
    exit 1
fi

sum=0
for (( i=0; i<${#number}; i++ )); do
    digit=${number:i:1}
    case $operator in
        +)
            sum=$(( sum + digit ))
            ;;
        -)
            sum=$(( sum - digit ))
            ;;
        \*)
            sum=$(( sum * digit ))
            ;;
    esac
done
```



^G Get Help
^X Exit

^O Write Out
^R Read File

^W Where Is
^_ Replace

^K Cut Text
^U Paste Text

^J Justify
^T To Spell



shruti@shruti-VirtualBox: ~



GNU nano 4.8

operators.sh

```
+)  
    sum=$(( sum + digit ))  
    ;;  
-)  
    sum=$(( sum - digit ))  
    ;;  
\*)  
    sum=$(( sum * digit ))  
    ;;  
/)  
    if [ $digit -eq 0 ]; then  
        echo "Error: division by zero"  
        exit 1  
    fi  
    sum=$(( sum / digit ))  
    ;;  
*)  
    echo "Error: invalid operator $operator"  
    exit 1  
    ;;  
esac  
done  
  
echo "The $operator of the digits of $number is $sum"
```



^G Get Help
^X Exit

^O Write Out
^R Read File

^W Where Is
^_ Replace

^K Cut Text
^U Paste Text

^J Justify
^T To Spell



shruti@shruti-VirtualBox: ~



```
shruti@shruti-VirtualBox:~$ nano chess.sh
shruti@shruti-VirtualBox:~$ chmod +x chess.sh
shruti@shruti-VirtualBox:~$ ./chess.sh
[Chess board]
0 1 0 1 0 1 0 1
1 0 1 0 1 0 1 0
0 1 0 1 0 1 0 1
1 0 1 0 1 0 1 0
0 1 0 1 0 1 0 1
1 0 1 0 1 0 1 0
0 1 0 1 0 1 0 1
1 0 1 0 1 0 1 0
shruti@shruti-VirtualBox:~$
```



shruti@shruti-VirtualBox: ~



GNU nano 4.8

chess.sh

Modified

#!/bin/bash

rows=8

cols=8

echo "[Chess board]"

```
for (( i=0; i<$rows; i++ )); do
  for (( j=0; j<$cols; j++ )); do
```

```
    parity=$(( (i+j) % 2 ))
```

```
    if [ $parity -eq 0 ]; then
```

```
        printf "0 "
```

```
    else
```

```
        printf "1 "
```

```
    fi
```

```
done
```

```
echo
```

```
done
```



^G Get Help

^X Exit

^O Write Out

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^\ Replace

^K Cut Text

^U Paste Text

^J Justify

^T To Spell



shruti@shruti-VirtualBox: ~



GNU nano 4.8

sort.sh

#!/bin/bash

```
if [ "$1" == "-a" ]; then
    ascending=true
    shift
elif [ "$1" == "-d" ]; then
    ascending=false
    shift
else
    echo "Usage: $0 [-a|-d] number1 number2 ..."
    exit 1
fi

if $ascending; then
    sorted_numbers=$(printf "%s\n" "${@}" | sort -n)
    echo "The ascending order of the array is: "
else
    sorted_numbers=$(printf "%s\n" "${@}" | sort -n -r)
    echo "The descending order of the array is: "
fi

echo "$sorted_numbers"
```

[Read 24 lines]

^G Get Help

^O Write Out

^W Where Is

^K Cut Text

^J Justify

^X Exit

^R Read File

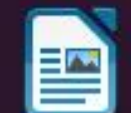
^_ Replace

^U Paste Text

^T To Spell



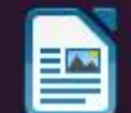
shruti@shruti-VirtualBox: ~



```
shruti@shruti-VirtualBox:~$ nano sort.sh
shruti@shruti-VirtualBox:~$ chmod + sort.sh
shruti@shruti-VirtualBox:~$ ./sort.sh 6 8 9 4
bash: ./sort.sh: Permission denied
shruti@shruti-VirtualBox:~$ nano sort.sh
shruti@shruti-VirtualBox:~$ ./sort.sh -a 6 8 9 4
bash: ./sort.sh: Permission denied
shruti@shruti-VirtualBox:~$
```



shruti@shruti-VirtualBox: ~



```
shruti@shruti-VirtualBox:~$ nano sort.sh
shruti@shruti-VirtualBox:~$ chmod + sort.sh
shruti@shruti-VirtualBox:~$ ./sort.sh 6 8 9 4
bash: ./sort.sh: Permission denied
shruti@shruti-VirtualBox:~$ nano sort.sh
shruti@shruti-VirtualBox:~$ ./sort.sh -a 6 8 9 4
bash: ./sort.sh: Permission denied
shruti@shruti-VirtualBox:~$ chmod +x sort.sh
shruti@shruti-VirtualBox:~$ ./sort.sh -a 6 8 9 4
The ascending order of the array is:
4
6
8
9
shruti@shruti-VirtualBox:~$
```



shruti@shruti-VirtualBox: ~



```
shruti@shruti-VirtualBox:~$ nano sort.sh
shruti@shruti-VirtualBox:~$ chmod + sort.sh
shruti@shruti-VirtualBox:~$ ./sort.sh 6 8 9 4
bash: ./sort.sh: Permission denied
shruti@shruti-VirtualBox:~$ nano sort.sh
shruti@shruti-VirtualBox:~$ ./sort.sh -a 6 8 9 4
bash: ./sort.sh: Permission denied
shruti@shruti-VirtualBox:~$ chmod +x sort.sh
shruti@shruti-VirtualBox:~$ ./sort.sh -a 6 8 9 4
The ascending order of the array is:
```

```
4
6
8
9
```

```
shruti@shruti-VirtualBox:~$ nano lowerupper.sh
shruti@shruti-VirtualBox:~$ chmod +x lowerupper.sh
shruti@shruti-VirtualBox:~$ ./lowerupper.sh /home/shruti/hell.txt
./lowerupper.sh: line 7: unexpected EOF while looking for matching `)'
./lowerupper.sh: line 24: syntax error: unexpected end of file
shruti@shruti-VirtualBox:~$ ./lowerupper.sh /home/shruti/hello.txt
./lowerupper.sh: line 7: unexpected EOF while looking for matching `)'
./lowerupper.sh: line 24: syntax error: unexpected end of file
shruti@shruti-VirtualBox:~$
```




GNU nano 4.8

lowerupper.sh

#!/bin/bash

for file in *
doif [-f "\$file"] || [-d "\$file"]
then

name=\$(basename "\$file")

if ["\$name" != "\$(echo "\$name" | tr '[:upper:]' '[:lower:]')"] && ["\$name">

then
newname=\$(echo "\$name" | tr '[:upper:]' '[:lower:]')

if [-f "\$file"]

then

mv "\$file" "\${file%*/}/\$newname"

elif [-d "\$file"]

then

mv "\$file" "\$(dirname "\$file")/\$newname"

fi

fi

fi

done

echo "After running the script"

ls

[Read 23 lines]

^G Get Help

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^K Cut Text

^J Justify

^X Exit

^R Read File

^_ Replace

^U Paste Text

^T To Spell



shruti@shruti-VirtualBox: ~



```
shruti@shruti-VirtualBox:~$ nano renamedir.sh
shruti@shruti-VirtualBox:~$ chmod +x renamedir.sh
shruti@shruti-VirtualBox:~$ ./renamedir.sh shrutinelw
mv: cannot move '/home/shruti' to '/home/shrutinelw': Permission denied
Name of current directory- shrutinelw
shruti@shruti-VirtualBox:~$ ./renamedir.sh homenew
mv: cannot move '/home/shruti' to '/home/homenew': Permission denied
Name of current directory- homenew
shruti@shruti-VirtualBox:~$
```



shruti@shruti-VirtualBox: ~



GNU nano 4.8

renamedir.sh

#!/bin/bash

newname="\$1"

if [-z "\$newname"]
then

echo "Error: new name cannot be empty"

exit 1

fi

curdir="\$(basename "\$(pwd))"

if ["\$curdir" = "\$newname"]

then

echo "Directory already has the new name"

exit 0

fi

mv "\$(pwd)" "\${PWD%/*}/\$newname"

echo "Name of current directory- \$newname"

[Read 19 lines]

^G Get Help

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^J Justify

^X Exit

^R Read File

^_ Replace

^U Paste Text

^T To Spell



shruti@shruti-VirtualBox: ~



```
shruti@shruti-VirtualBox:~$ nano demopath.sh
shruti@shruti-VirtualBox:~$ chmod +x demopath.sh
shruti@shruti-VirtualBox:~$ ./demopath.sh
```

```
Directory: /usr/local/sbin
Number of executable files: 0
```

```
Directory: /usr/local/bin
Number of executable files: 0
```

```
Directory: /usr/sbin
Number of executable files: 285
```

```
Directory: /usr/bin
Number of executable files: 1168
```

```
Directory: /sbin
Number of executable files: 0
```

```
Directory: /bin
Number of executable files: 0
```

```
Directory: /usr/games
Number of executable files: 4
```

```
Directory: /usr/local/games
Number of executable files: 0
```

```
Directory: /snap/bin
Number of executable files: 0
```



shruti@shruti-VirtualBox: ~



GNU nano 4.8

demopath.sh

Modified

#!/bin/bash

IFS=":" read -r -a directories <<< "\$PATH"

for dir in "\${directories[@]}"
do

num_executables="\$(find "\$dir" -type f -perm /u+x | wc -l)"

echo "Directory: \$dir"

echo "Number of executable files: \$num_executables"

echo

done

[Read 13 lines]

^G Get Help

^O Write Out

^W Where Is

^K Cut Text

^J Justify

^X Exit

^R Read File

^_ Replace

^U Paste Text

^T To Spell