LNJN National Institute Of Criminology

And Forensic Science

NATIONAL FORENSIC SCIENCES UNIVERSITY

PYTHON AND SCRIPTING

SUBJECT CODE: CTMSDFIS S1 P4

SUBMITTED BY

SHUBHANG GUPTA

ROLL NO. :

M.SC. DIGITAL FORENSICS AND INFORMATION SECURITY

PROJECT

Objective:

Shell Script that sorts files.

1. Bash Sort Files Alphabetically

The **ls -l** command below to get a list of files in a directory in ascending order. The **-l** flag tells the **ls** command to print the returned output in a long list format.

$ ls -l

2. Bash Sort Order Files by Size

To sort files by size, pass the **-S** flag to tell the **ls** command to sort the list of files by file size.

$ ls -lS

3. Sort Files by Modification Time via Bash Sort

In a case where we need to sort files by the time they were modified. Run the command below where the **-t** parameter tells the **ls** command to sort the files by modification time.

$ ls -lt

4. Sorting Files by File Extension

When we're looking for a file with a particular file type, sorting files by file extension is the ideal solution. The command to list files **(ls)** in the working directory and sort based on their extensions **(-lx)** can be used.

$ ls -lX

5. <u>Sorting Contents in a Text File</u>

The sort command sorts file contents depending on the flag we'll be adding.

$ sort fruits.txt

6. <u>Sorting a List of Numbers in a Text File</u>

The command to sort numbers is similar to sorting texts in a file, but we'll be adding the **-n** flag instead.

$ sort -n scores.txt

7. <u>Sorting a List of Version Numbers in a Text File</u>

If we have a list of version numbers in a text file you want to sort. If so, adding the **--version-sort** option to the sort command will do the trick. The **--field-separator** option tells the sort command that the numbers in each version are separated by a **dot (.)**.

$ sort --version-sort --field-separator=. versions.txt

main.sh script

```bash
#! /bin/bash

function sort_file_contents() {
  while true
    do
      echo ''
      echo '===== SORT FILE CONTENT MENU ====='
      echo '1. Ascending Order'
      echo '2. Descending Order'
      echo '3. List of Numbers'
      echo '4. List of Version Numbers'
      echo '0. Exit'
      echo ''

      read -p 'Enter your choice: ' ch
      echo ''

      if [ $ch -ne 0 ]
      then
        read -p 'Enter the file path: ' file
      fi

      case "$ch" in
        1)
          echo -e '\n===== Ascending Order Sorting ====='
          sort $file
        ;;
        2)
          echo -e '\n===== Descending Order Sorting ====='
          sort -r $file
        ;;
        3)
          echo -e '\n===== Numbers Sorting ====='
          sort -n $file
        ;;
        4)
          echo -e '\n===== Version Numbers Sorting ====='
          sort --version-sort --field-separator=. $file
        ;;
        0)
          echo 'Exiting...'
          exit
        ;;
        *)
        echo "INVALID CHOICE\!\!! TRY AGAIN\!\!!"
        ;;
```

```
        esac
    done
}

while true
    do
        echo ''
        echo '===== SORT MENU ====='
        echo '1. Alphabetically'
        echo '2. Size'
        echo '3. Time Modified'
        echo '4. File Extension'
        echo '5. Sort File Contents'
        echo '0. Exit'
        echo ''

        read -p 'Enter your choice: ' choice
        echo ''

        if [ $choice -ne 0 ] && [ $choice -gt 0 ] && [ $choice -lt 6 ]
        then
            read -p 'Enter the path: ' path
        fi

        case "$choice" in
            1)
                echo -e '\n===== Alphabetical Sorting ====='
                ls -l $path
            ;;
            2)
                echo -e '\n===== Size Sorting ====='
                ls -lS $path
            ;;
            3)
                echo -e '\n===== Time Modified Sorting ====='
                ls -lt $path
            ;;
            4)
                echo -e '\n===== File Extension Sorting ====='
                ls -lX $path
            ;;
            5)
                sort_file_contents
            ;;
            0)
                echo 'Exiting...'
                exit
            ;;
```

```
    *)
    echo -e "\nINVALID CHOICE\!\!! TRY AGAIN\!\!!"
    ;;
  esac
done
```

Outputs

```
┌──(root㉿kali)-[~/Python_Pracs]
└─# echo "Project Shubhang Gupta $(date)"
Project Shubhang Gupta Wed Oct 19 11:38:09 PM EDT 2022

┌──(root㉿kali)-[~/Python_Pracs]
└─# ./main.sh

═══ SORT MENU ═══
1. Alphabetically
2. Size
3. Time Modified
4. File Extension
5. Sort File Contents
0. Exit

Enter your choice: 1

Enter the path: /root/Python_Pracs/LAB_05/

═══ Alphabetical Sorting ═══
total 88
-rw-r--r-- 1 root root 10240 Sep 22 07:03 arcv.tar
-rw-r--r-- 1 root root   108 Sep 22 07:09 arcv.tgz
-rw-r--r-- 1 root root    53 Sep 24 14:29 a.txt
-rw-r--r-- 1 root root    53 Sep 24 14:30 b.txt
-rw-r--r-- 1 root root    44 Sep 22 07:16 fruits
-rw-r--r-- 1 root root   188 Sep 24 14:17 geekfile.txt
-rwxr-xr-x 1 root root 15952 Oct  3 10:38 hello
-rw-r--r-- 1 root root    95 Oct  3 10:38 hello.c
-rw-r--r-- 1 root root   106 Oct  3 12:49 hello.java
-rw-r--r-- 1 root root   421 Oct  3 13:24 HelloWorld.class
-rw-r--r-- 1 root root    20 Sep 24 15:04 OUTPUT
-rw-r--r-- 1 root root    25 Oct 16 16:16 scores.txt
-rw-r--r-- 1 root root    36 Oct  3 10:09 table1.txt
-rw-r--r-- 1 root root     8 Oct  3 10:13 table2.txt
-rwxr--r-- 1 root root    44 Oct  3 10:30 test.sh
-rw-r--r-- 1 root root    20 Sep 24 15:03 trs.txt
-rw-r--r-- 1 root root    26 Oct 16 16:18 versions.txt
```

```
═══ SORT MENU ═══
1. Alphabetically
2. Size
3. Time Modified
4. File Extension
5. Sort File Contents
0. Exit

Enter your choice: 2

Enter the path: /root/Python_Pracs/LAB_05/

═══ Size Sorting ═══
total 88
-rwxr-xr-x 1 root root 15952 Oct  3 10:38 hello
-rw-r--r-- 1 root root 10240 Sep 22 07:03 arcv.tar
-rw-r--r-- 1 root root   421 Oct  3 13:24 HelloWorld.class
-rw-r--r-- 1 root root   188 Sep 24 14:17 geekfile.txt
-rw-r--r-- 1 root root   108 Sep 22 07:09 arcv.tgz
-rw-r--r-- 1 root root   106 Oct  3 12:49 hello.java
-rw-r--r-- 1 root root    95 Oct  3 10:38 hello.c
-rw-r--r-- 1 root root    53 Sep 24 14:29 a.txt
-rw-r--r-- 1 root root    53 Sep 24 14:30 b.txt
-rw-r--r-- 1 root root    44 Sep 22 07:16 fruits
-rwxr--r-- 1 root root    44 Oct  3 10:30 test.sh
-rw-r--r-- 1 root root    36 Oct  3 10:09 table1.txt
-rw-r--r-- 1 root root    26 Oct 16 16:18 versions.txt
-rw-r--r-- 1 root root    25 Oct 16 16:16 scores.txt
-rw-r--r-- 1 root root    20 Sep 24 15:04 OUTPUT
-rw-r--r-- 1 root root    20 Sep 24 15:03 trs.txt
-rw-r--r-- 1 root root     8 Oct  3 10:13 table2.txt
```

```
════ SORT MENU ════
1. Alphabetically
2. Size
3. Time Modified
4. File Extension
5. Sort File Contents
0. Exit

Enter your choice: 3

Enter the path: /root/Python_Pracs/LAB_05/

════ Time Modified Sorting ════
total 88
-rw-r--r-- 1 root root    26 Oct 16 16:18 versions.txt
-rw-r--r-- 1 root root    25 Oct 16 16:16 scores.txt
-rw-r--r-- 1 root root   421 Oct  3 13:24 HelloWorld.class
-rw-r--r-- 1 root root   106 Oct  3 12:49 hello.java
-rwxr-xr-x 1 root root 15952 Oct  3 10:38 hello
-rw-r--r-- 1 root root    95 Oct  3 10:38 hello.c
-rwxr--r-- 1 root root    44 Oct  3 10:30 test.sh
-rw-r--r-- 1 root root     8 Oct  3 10:13 table2.txt
-rw-r--r-- 1 root root    36 Oct  3 10:09 table1.txt
-rw-r--r-- 1 root root    20 Sep 24 15:04 OUTPUT
-rw-r--r-- 1 root root    20 Sep 24 15:03 trs.txt
-rw-r--r-- 1 root root    53 Sep 24 14:30 b.txt
-rw-r--r-- 1 root root    53 Sep 24 14:29 a.txt
-rw-r--r-- 1 root root   188 Sep 24 14:17 geekfile.txt
-rw-r--r-- 1 root root    44 Sep 22 07:16 fruits
-rw-r--r-- 1 root root   108 Sep 22 07:09 arcv.tgz
-rw-r--r-- 1 root root 10240 Sep 22 07:03 arcv.tar
```

```
═══ SORT MENU ═══
1. Alphabetically
2. Size
3. Time Modified
4. File Extension
5. Sort File Contents
0. Exit

Enter your choice: 4

Enter the path: /root/Python_Pracs/LAB_05/

═══ File Extension Sorting ═══
total 88
-rw-r--r-- 1 root root    44 Sep 22 07:16 fruits
-rwxr-xr-x 1 root root 15952 Oct  3 10:38 hello
-rw-r--r-- 1 root root    20 Sep 24 15:04 OUTPUT
-rw-r--r-- 1 root root    95 Oct  3 10:38 hello.c
-rw-r--r-- 1 root root   421 Oct  3 13:24 HelloWorld.class
-rw-r--r-- 1 root root   106 Oct  3 12:49 hello.java
-rwxr--r-- 1 root root    44 Oct  3 10:30 test.sh
-rw-r--r-- 1 root root 10240 Sep 22 07:03 arcv.tar
-rw-r--r-- 1 root root   108 Sep 22 07:09 arcv.tgz
-rw-r--r-- 1 root root    53 Sep 24 14:29 a.txt
-rw-r--r-- 1 root root    53 Sep 24 14:30 b.txt
-rw-r--r-- 1 root root   188 Sep 24 14:17 geekfile.txt
-rw-r--r-- 1 root root    25 Oct 16 16:16 scores.txt
-rw-r--r-- 1 root root    36 Oct  3 10:09 table1.txt
-rw-r--r-- 1 root root     8 Oct  3 10:13 table2.txt
-rw-r--r-- 1 root root    20 Sep 24 15:03 trs.txt
-rw-r--r-- 1 root root    26 Oct 16 16:18 versions.txt
```

```
═══ SORT MENU ═══
1. Alphabetically
2. Size
3. Time Modified
4. File Extension
5. Sort File Contents
0. Exit

Enter your choice: 5

═══ SORT FILE CONTENT MENU ═══
1. Ascending Order
2. Descending Order
3. List of Numbers
4. List of Version Numbers
0. Exit

Enter your choice: 1

Enter the file path: /root/Python_Pracs/LAB_05/fruits

═══ Ascending Order Sorting ═══
apple
custard apple
grapes
orange
pineapple
```

```
═══ SORT FILE CONTENT MENU ═══
1. Ascending Order
2. Descending Order
3. List of Numbers
4. List of Version Numbers
0. Exit

Enter your choice: 2

Enter the file path: /root/Python_Pracs/LAB_05/fruits

═══ Descending Order Sorting ═══
pineapple
orange
grapes
custard apple
apple
```

```
===== SORT FILE CONTENT MENU =====
1. Ascending Order
2. Descending Order
3. List of Numbers
4. List of Version Numbers
0. Exit

Enter your choice: 3

Enter the file path: /root/Python_Pracs/LAB_05/scores.txt

===== Numbers Sorting =====
3
5
21
45
52
69
78
```

```
===== SORT FILE CONTENT MENU =====
1. Ascending Order
2. Descending Order
3. List of Numbers
4. List of Version Numbers
0. Exit

Enter your choice: 4

Enter the file path: /root/Python_Pracs/LAB_05/versions.txt

===== Version Numbers Sorting =====
1.0.0.1
4.0.0.2
6.2.1.0
```

```
===== SORT FILE CONTENT MENU =====
1. Ascending Order
2. Descending Order
3. List of Numbers
4. List of Version Numbers
0. Exit

Enter your choice: 0

Exiting...
```