



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

LAB 05

22-09-2022

AIM: Practical on search, Archiving, Regex, Text Processing, Scripting and Compiling using BASH shell.

SOFTWARE REQUIRED: UBUNTU OS.

INTRODUCTION: Ubuntu is a Linux distribution based on Debian and composed mostly of free and open-source software. Ubuntu is officially released in three editions: Desktop, Server, and Core for Internet of things devices and robots. All the editions can run on the computer alone, or in a virtual machine.

“Bash is a Unix shell and command language written by Brian Fox for the GNU Project as a free software replacement for the Bourne shell. First released in 1989, it has been used as the default login shell for most Linux distributions. Bash was one of the first programs Linus Torvalds ported to Linux, alongside GCC.”

COMMANDS

- Searching files command

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Thu Sep 22 06:18:22 AM EDT 2022

Places
(root@kali)-[~]
# tree -a /tmp
/tmp
├── .font-unix
├── .ICE-unix
├── 765
├── ssh-XXXXXXzpeXr6
├── agent.765
├── systemd-private-af232d2991f34a72b8ce0488e43840ac-color.service-C9XBid
├── tmp
├── systemd-private-af232d2991f34a72b8ce0488e43840ac-haveged.service-fYkKWt
├── tmp
├── systemd-private-af232d2991f34a72b8ce0488e43840ac-ModemManager.service-ZVuMrs
├── tmp
├── systemd-private-af232d2991f34a72b8ce0488e43840ac-systemd-logind.service-z6Wyjt
├── tmp
├── systemd-private-af232d2991f34a72b8ce0488e43840ac-upower.service-8vaqUP
├── tmp
├── .X0-lock
├── .X11-unix
├── X0
├── .xfsm-ICE-WSCWS1
└── .XIM-unix

15 directories, 5 files
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Thu Sep 22 06:22:19 AM EDT 2022

Computer
(root@kali)-[~]
# sudo find / -name xattr.conf
/etc/xattr.conf
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Thu Sep 22 06:29:53 AM EDT 2022
```

```
(root@kali)-[~]  
# find ./ -empty  
./Downloads  
./Music  
./ICEauthority  
./config/xfce4/xfwm4  
./config/binwalk/config/extract.conf  
./config/binwalk/modules  
./config/binwalk/magic/binarch  
./config/binwalk/plugins  
./Pictures  
./Desktop  
./Documents  
./Public  
./Videos  
./local/share/Mousepad  
./local/share/icc  
./mozilla/systemextensionsdev
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Thu Sep 22 06:32:56 AM EDT 2022
```

```
(root@kali)-[~]  
# find ./Documents -empty  
./Documents
```

```
(root@kali)-[~]  
# find ./Desktop -empty  
./Desktop
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Thu Sep 22 06:43:01 AM EDT 2022
```

```
(root@kali)-[~]  
# find Desktop -type d  
Desktop
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Thu Sep 22 06:45:02 AM EDT 2022

(root@kali)-[~]
# find . *.txt
.
./.vboxclient-draganddrop.pid
./Downloads
./.xsession-errors
./Music
./.ICEauthority
./.bash_logout
./.dbus
././dbus/session-bus
././dbus/session-bus/5b183ad02dc77a597b68f57062f0df43-0
././dmrc
././profile
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Thu Sep 22 06:46:05 AM EDT 2022

(root@kali)-[~]
# whereis etc
etc: /usr/local/etc
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Thu Sep 22 06:47:01 AM EDT 2022

(root@kali)-[~]
# whereis who
who: /usr/bin/who /usr/share/man/man1/who.1.gz
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Thu Sep 22 06:47:23 AM EDT 2022

(root@kali)-[~]
# whereis -b gunzip
gunzip: /usr/bin/gunzip
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Thu Sep 22 06:48:35 AM EDT 2022
```

```
(root@kali)-[~]  
# whereis -m false  
false: /usr/share/man/man1/false.1.gz
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Thu Sep 22 06:48:56 AM EDT 2022
```

```
(root@kali)-[~]  
# whereis -V  
whereis from util-linux 2.38.1
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Thu Sep 22 06:49:45 AM EDT 2022
```

```
(root@kali)-[~]  
# whereis gcc  
gcc: /usr/bin/gcc /usr/lib/gcc /usr/share/gcc
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Thu Sep 22 06:50:14 AM EDT 2022
```

```
(root@kali)-[~]  
# which gcc  
/usr/bin/gcc
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Thu Sep 22 06:51:34 AM EDT 2022
```

```
(root@kali)-[~]  
# which cpp python3 java  
/usr/bin/cpp  
/usr/bin/python3  
/usr/bin/java
```

- Archiving and Backup

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Thu Sep 22 07:03:31 AM EDT 2022
```

```
(root@kali)-[~]  
# tar cvf arcv.tar arcv/  
arcv/
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Thu Sep 22 07:03:52 AM EDT 2022
```

```
(root@kali)-[~]  
# tar tvf arcv.tar  
drwxr-xr-x root/root          0 2022-09-22 07:03 arcv/
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Thu Sep 22 07:07:00 AM EDT 2022
```

```
(root@kali)-[~]  
# tar xvf arcv.tar  
arcv/
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Thu Sep 22 07:07:22 AM EDT 2022
```

```
(root@kali)-[~]  
# tar cvfz arcv.tgz arcv/  
arcv/
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Thu Sep 22 07:09:31 AM EDT 2022

Downloads
(root@kali)-[~]
# ls -lh
total 52K
drwxr-xr-x 2 root root 4.0K Sep 22 07:03 arcv
-rw-r--r-- 1 root root 10K Sep 22 07:03 arcv.tar
-rw-r--r-- 1 root root 108 Sep 22 07:09 arcv.tgz
drwxr-xr-x 2 root root 4.0K Sep 20 09:01 Desktop
drwxr-xr-x 2 root root 4.0K Sep 20 09:01 Documents
drwxr-xr-x 2 root root 4.0K Sep 20 09:01 Downloads
drwxr-xr-x 2 root root 4.0K Sep 20 09:01 Music
drwxr-xr-x 2 root root 4.0K Sep 20 09:01 Pictures
drwxr-xr-x 2 root root 4.0K Sep 20 09:01 Public
drwxr-xr-x 2 root root 4.0K Sep 20 09:01 Templates
drwxr-xr-x 2 root root 4.0K Sep 20 09:01 Videos
```


- Regular Expressions

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Thu Sep 22 07:16:35 AM EDT 2022
```

```
(root@kali)-[~]  
# grep 'apple' fruits  
apple  
custard apple  
pineapple
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Thu Sep 22 07:17:14 AM EDT 2022
```

```
(root@kali)-[~]  
# cat fruits | grep a  
apple  
orange  
custard apple  
pineapple  
grapes
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Thu Sep 22 07:17:54 AM EDT 2022
```

```
(root@kali)-[~]  
# cat fruits | grep ^a  
apple
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Thu Sep 22 07:18:19 AM EDT 2022
```

```
(root@kali)-[~]
# cat fruits | grep e$
apple
orange
custard apple
pineapple
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Thu Sep 22 07:28:45 AM EDT 2022
```

```
(root@kali)-[~]
# cat fruits | grep -E p{2}
apple
custard apple
pineapple
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Thu Sep 22 07:31:33 AM EDT 2022
```

```
(root@kali)-[~]
# cat fruits | grep "l\+e"
apple
custard apple
pineapple
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Thu Sep 22 07:32:17 AM EDT 2022
```

```
(root@kali)-[~]
# echo {a..z}
a b c d e f g h i j k l m n o p q r s t u v w x y z
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Thu Sep 22 07:32:36 AM EDT 2022
```

```
(root@kali)-[~]  
# echo {3..11}  
3 4 5 6 7 8 9 10 11
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Thu Sep 22 07:33:07 AM EDT 2022
```

```
(root@kali)-[~]  
# echo a{3..11}b  
a3b a4b a5b a6b a7b a8b a9b a10b a11b
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Thu Sep 22 07:34:13 AM EDT 2022
```

```
(root@kali)-[~]  
# sed 's\apple\cherry\' fruits  
cherry  
orange  
custard cherry  
pinecherry  
grapes
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Sat Sep 24 02:23:37 PM EDT 2022  
  
(root@kali)-[~]  
# sed 's/unix/linux/g' geekfile.txt  
linux is great os. linux is opensource. linux is free os.  
learn operating system.  
linux linux which one you choose.  
linux is easy to learn. linux is a multiuser os. Learn linux. linux is a powerful.
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Sat Sep 24 02:22:12 PM EDT 2022

(root@kali)-[~]
# sed 's/unix/linux/2' geekfile.txt
unix is great os. linux is opensource. unix is free os.
learn operating system.
unix linux which one you choose.
unix is easy to learn. linux is a multiuser os. Learn unix. unix is a powerful.
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Sat Sep 24 02:25:15 PM EDT 2022

(root@kali)-[~]
# sed '3 s/unix/linux/' geekfile.txt
unix is great os. unix is opensource. unix is free os.
learn operating system.
linux linux which one you choose.
unix is easy to learn. unix is a multiuser os. Learn unix. unix is a powerful.
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Sat Sep 24 02:26:07 PM EDT 2022

(root@kali)-[~]
# sed '5d' geekfile.txt
unix is great os. unix is opensource. unix is free os.
learn operating system.
unix linux which one you choose.
unix is easy to learn. unix is a multiuser os. Learn unix. unix is a powerful.
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Sat Sep 24 02:30:18 PM EDT 2022

(root@kali)-[~]
# diff a.txt b.txt
0a1
> Tamil Nadu
2,3c3
< Uttar Pradesh
< Kolkata
—
> Andhra Pradesh
5c5
< Jammu and Kashmir
\ No newline at end of file
—
> Uttar pradesh
\ No newline at end of file
```

- Text Processing

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Sat Sep 24 03:03:41 PM EDT 2022
```

```
(root@kali)-[~]  
# tr "[a-z]" "[A-Z]" < trs.txt  
THIS IS COMMAND LINE
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Sat Sep 24 03:04:23 PM EDT 2022
```

```
(root@kali)-[~]  
# tr "[a-z]" "[A-Z]" < trs.txt > OUTPUT
```

```
(root@kali)-[~]  
# cat OUTPUT  
THIS IS COMMAND LINE
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Sat Sep 24 03:05:04 PM EDT 2022
```

```
(root@kali)-[~]  
# wc fruits  
5 6 44 fruits
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Sat Sep 24 03:05:33 PM EDT 2022
```

```
(root@kali)-[~]  
# wc -c fruits  
44 fruits
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Sat Sep 24 03:05:41 PM EDT 2022

(root@kali)-[~]
# wc -l fruits
5 fruits
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Mon Oct 3 10:10:10 AM EDT 2022

(root@kali)-[~]
# cat table1.txt
12      sam      jam
24      karna    dharn
26      dfg      dfg
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Mon Oct 3 10:11:20 AM EDT 2022

(root@kali)-[~]
# cut -f 1,3 table1.txt
12      jam
24      dharn
26      dfg
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Mon Oct 3 10:11:44 AM EDT 2022

(root@kali)-[~]
# cut -f 1,5 table1.txt
12
24
26
```

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Mon Oct  3 10:13:36 AM EDT 2022

(root@kali)-[~]
# cat table2.txt
12
13
13

(root@kali)-[~]
# paste table1.txt table2.txt
12      sam      jam      12
24      karna    dharn    13
26      dfg      dfg      13
```

- Formatted Output

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Mon Oct  3 10:23:39 AM EDT 2022
```

```
(root@kali)-[~]  
# name=Shubhang Gupta  
Gupta: command not found
```

```
(root@kali)-[~]  
# name=ShubhangGupta
```

```
(root@kali)-[~]  
# x=3
```

```
(root@kali)-[~]  
# y=3.7
```

```
(root@kali)-[~]  
# printf "my name is =%s lucky number=%d float=%f\n" "$name" "$x" "$y"  
my name is =ShubhangGupta lucky number=3 float=3.700000
```

```
(root@kali)-[~]  
# printf "my name is =%s lucky number=%d float=%f\n" "$name" "$x" "$y"  
my name is =ShubhangGupta lucky number=3 float=3.700000
```

```
(root@kali)-[~]  
# printf "%91s" "" | tr " " "-"
```


- How to run a Script

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Mon Oct 3 10:31:05 AM EDT 2022
```

```
(root@kali)-[~]  
# nano test.sh
```

```
(root@kali)-[~]  
# ls -la test.sh  
-rw-r--r-- 1 root root 44 Oct 3 10:30 test.sh
```

```
(root@kali)-[~]  
# chmod u+x test.sh
```

```
(root@kali)-[~]  
# ls -la test.sh  
-rwxr--r-- 1 root root 44 Oct 3 10:30 test.sh
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Mon Oct 3 10:36:31 AM EDT 2022
```

```
(root@kali)-[~]  
# cat test.sh  
#!/bin/bash  
echo "This is a test Script.\n"
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Mon Oct 3 10:32:16 AM EDT 2022
```

```
(root@kali)-[~]  
# ./test.sh  
This is a test Script.\n
```

- **Compile C Program**

```
(root@kali)-[~]
# echo "LAB 5 Shubhang Gupta $(date)"
LAB 5 Shubhang Gupta Mon Oct  3 10:38:31 AM EDT 2022

(root@kali)-[~]
# touch hello.c

(root@kali)-[~]
# gcc hello.c -o hello

(root@kali)-[~]
# ./hello
Hello World

(root@kali)-[~]
# cat hello.c
#include <stdio.h>

int main()
{

    // prints hello world
    printf("Hello World");

    return 0;
}
```

- **Compile JAVA Program**

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Mon Oct  3 12:48:30 PM EDT 2022  
  
(root@kali)-[~]  
# gedit hello.java
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Mon Oct  3 12:50:18 PM EDT 2022  
  
(root@kali)-[~]  
# cat hello.java  
class HelloWorld  
{  
    public static void main(String args[])  
    {  
        System.out.println("Hello, World");  
    }  
}
```

```
(root@kali)-[~]  
# echo "LAB 5 Shubhang Gupta $(date)"  
LAB 5 Shubhang Gupta Mon Oct  3 01:24:28 PM EDT 2022  
  
(root@kali)-[~]  
# javac hello.java  
Picked up _JAVA_OPTIONS: -Dawt.useSystemAAFontSettings=on -Dswing.aatext=true  
  
(root@kali)-[~]  
# java HelloWorld  
Picked up _JAVA_OPTIONS: -Dawt.useSystemAAFontSettings=on -Dswing.aatext=true  
Hello, World
```

THE END