

G. H. Raisoni College Of Engineering And Management, Wagholi Pune

2021- 2022

Assignment no :- 1

Department	<u>CE [SUMMER 2022]</u>		
Term / Section	<u>III/B</u>	Date Of submission	<u>15-02-2022</u>
Subject Name /Code	<u>Operating System / UITP203</u>		
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Practical No 1

* Aim → Study of UNIX / Linux general purpose utility commands list obtained from (man, who, cat, cd, cp, ps, ls, mv, rm, mkdir, rmdir, echo, more, date, time, kill, history, chmod, chown, finger, pwd, cal, logout, Shutdown) commands

* Theory →

The followings are the commands →

- (1) pwd → The pwd command is used to display the location of current working directory
- (2) mkdir → The mkdir command is used to create a new directory under any directory
- (3) rmdir → The rmdir command is used to remove the directory
- (4) ls → display list of content of a directory
- (5) cd → The cd command is used to change the current directory
- (6) man → We can use this command after any command to get the official documentation written for that particular command
- (7) who → To check the user we use the who command
- (8) touch → To create empty files
- (9) rm → To Remove files

- (10) cat :-> Display files contents on the terminal
- (11) echo :-> Print any text that follows the command
- (12) date :-> displays date
- (13) time :-> determine how long a given command takes to run
- (14) history :-> To view the previously executed commands
- (15) Shutdown :-> Shutdown System in a safe way
- (16) logout :-> logout from our session
- (17) ipconfig / ifconfig :-> To configure the kernel-resident network interfaces
- (18) ping :-> To check network connectivity between host and server / host

* Linux command ->

is a utility of the Linux operating system. All basic and advanced tasks can be done by executing on the Linux terminal.

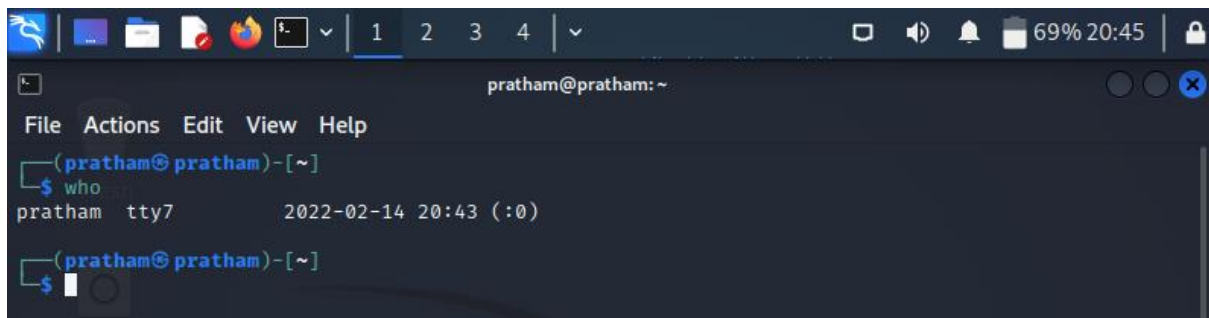
* Shell programming ->

The shell is a layer of programming that understands and executes commands entered by user.

A shell script is designed to be run by the Unix shell, a command line interpreter.

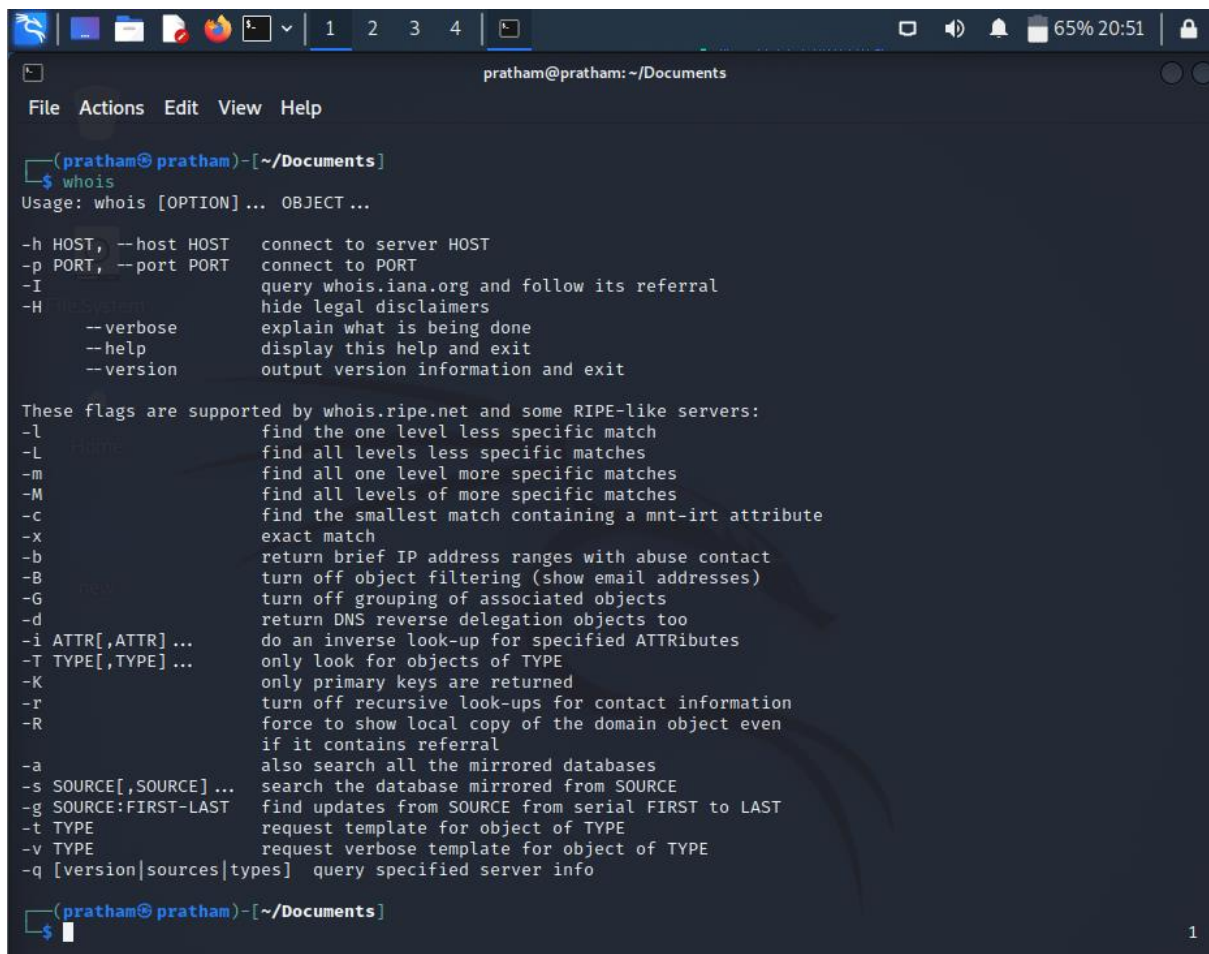
* Conclusion :-> Thus using different shell commands, we successfully operated the unix based terminals to understand the core behind O.S.

1) who



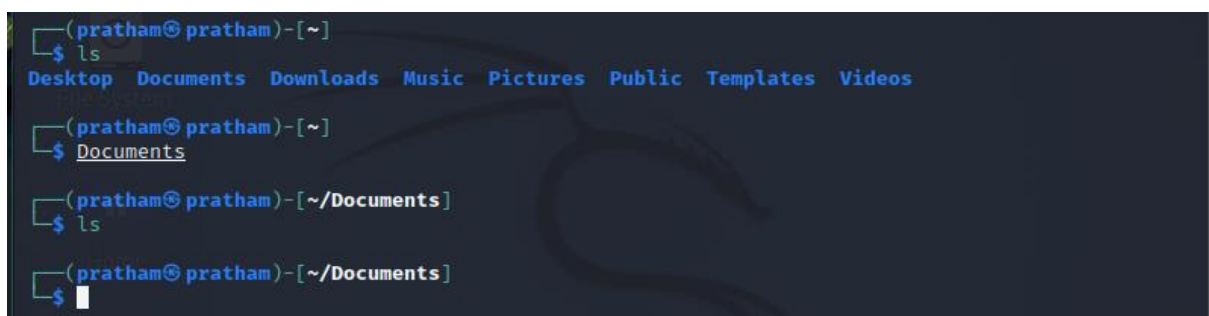
```
pratham@pratham: ~  
File Actions Edit View Help  
(pratham@pratham)-[~]  
$ who  
pratham  tty7          2022-02-14 20:43 (:0)  
  
(pratham@pratham)-[~]  
$
```

2)whois



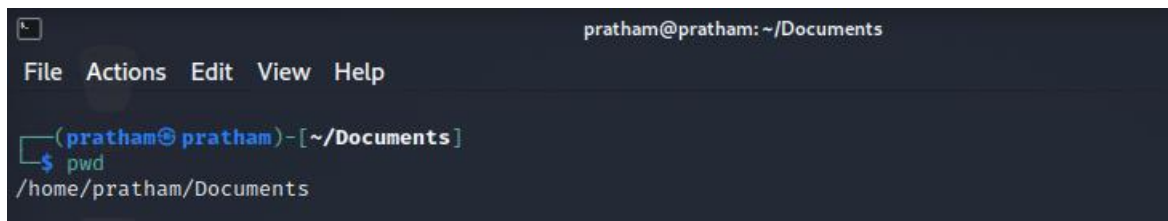
```
pratham@pratham: ~/Documents  
File Actions Edit View Help  
(pratham@pratham)-[~/Documents]  
$ whois  
Usage: whois [OPTION]... OBJECT...  
  
-h HOST, --host HOST    connect to server HOST  
-p PORT, --port PORT    connect to PORT  
-I                     query whois.iana.org and follow its referral  
-H                     hide legal disclaimers  
--verbose              explain what is being done  
--help                 display this help and exit  
--version              output version information and exit  
  
These flags are supported by whois.ripe.net and some RIPE-like servers:  
-l                     find the one level less specific match  
-L                     find all levels less specific matches  
-m                     find all one level more specific matches  
-M                     find all levels of more specific matches  
-c                     find the smallest match containing a mnt-irt attribute  
-x                     exact match  
-b                     return brief IP address ranges with abuse contact  
-B                     turn off object filtering (show email addresses)  
-G                     turn off grouping of associated objects  
-d                     return DNS reverse delegation objects too  
-i ATTR[,ATTR]...      do an inverse look-up for specified ATTRIBUTES  
-T TYPE[,TYPE]...      only look for objects of TYPE  
-K                     only primary keys are returned  
-r                     turn off recursive look-ups for contact information  
-R                     force to show local copy of the domain object even  
                        if it contains referral  
-a                     also search all the mirrored databases  
-s SOURCE[,SOURCE]...  search the database mirrored from SOURCE  
-g SOURCE:FIRST-LAST   find updates from SOURCE from serial FIRST to LAST  
-t TYPE                request template for object of TYPE  
-v TYPE                request verbose template for object of TYPE  
-q [version|sources|types] query specified server info  
  
(pratham@pratham)-[~/Documents]  
$
```

3) ls – The most frequently used command in Linux to list directories



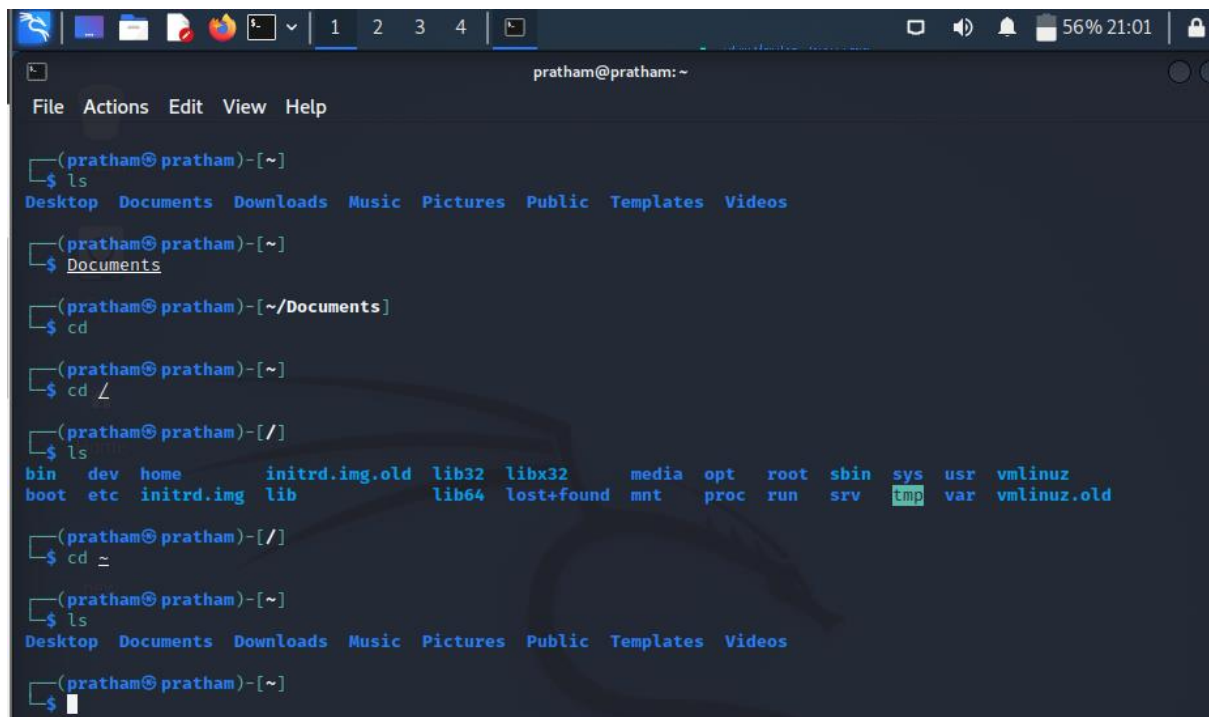
```
(pratham@pratham)-[~]  
$ ls  
Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos  
  
(pratham@pratham)-[~]  
$ Documents  
  
(pratham@pratham)-[~/Documents]  
$ ls  
  
(pratham@pratham)-[~/Documents]  
$
```


4) **pwd** – Print working directory command in Linux



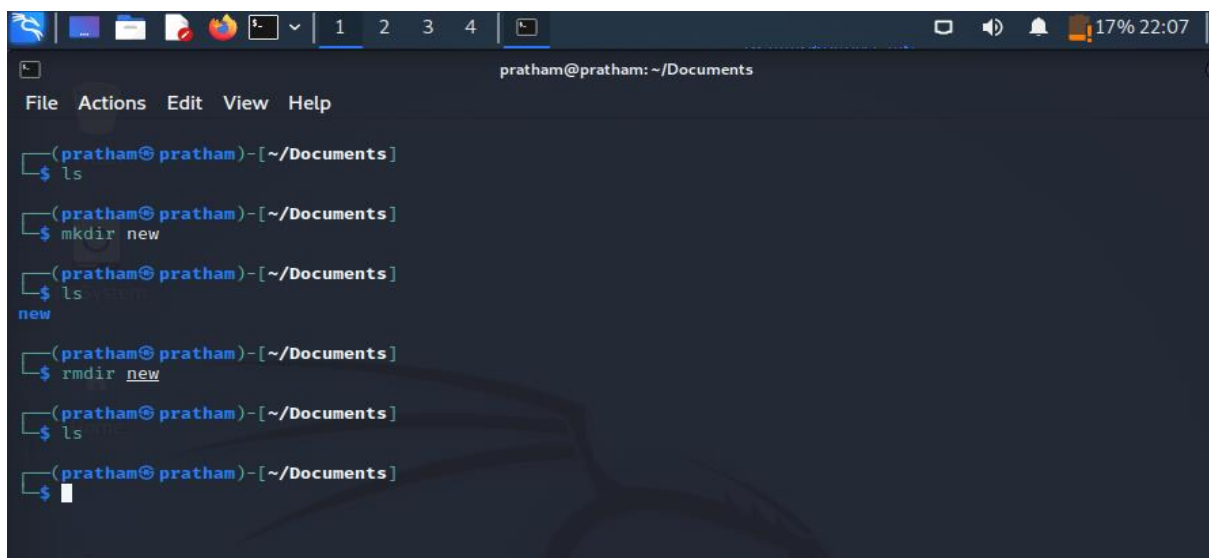
```
pratham@pratham: ~/Documents
File Actions Edit View Help
(pratham@pratham)-[~/Documents]
$ pwd
/home/pratham/Documents
```

5) **cd** – Linux command to navigate through directories



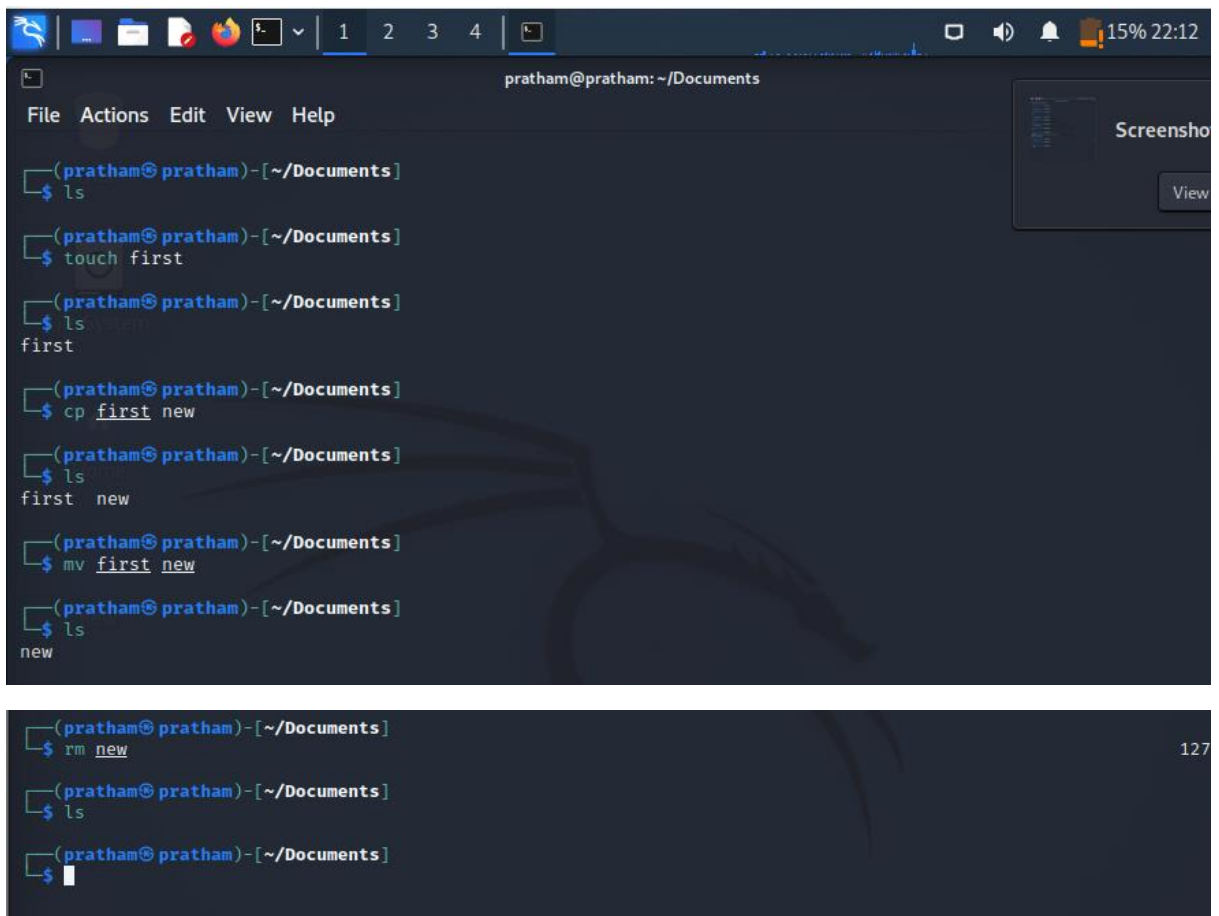
```
pratham@pratham: ~
File Actions Edit View Help
(pratham@pratham)-[~]
$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos
(pratham@pratham)-[~]
$ Documents
(pratham@pratham)-[~/Documents]
$ cd
(pratham@pratham)-[~]
$ cd /
(pratham@pratham)-[/]
$ ls
bin  dev  home  initrd.img.old  lib32  libx32  media  opt  root  sbin  sys  usr  vmlinuz
boot  etc  initrd.img  lib  lib64  lost+found  mnt  proc  run  srv  tmp  var  vmlinuz.old
(pratham@pratham)-[/]
$ cd ~
(pratham@pratham)-[~]
$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos
(pratham@pratham)-[~]
$
```

6) **mkdir** , **rmdir**



```
pratham@pratham: ~/Documents
File Actions Edit View Help
(pratham@pratham)-[~/Documents]
$ ls
(pratham@pratham)-[~/Documents]
$ mkdir new
(pratham@pratham)-[~/Documents]
$ ls
new
(pratham@pratham)-[~/Documents]
$ rmdir new
(pratham@pratham)-[~/Documents]
$ ls
(pratham@pratham)-[~/Documents]
$
```

7) touch , rm , cp , mv

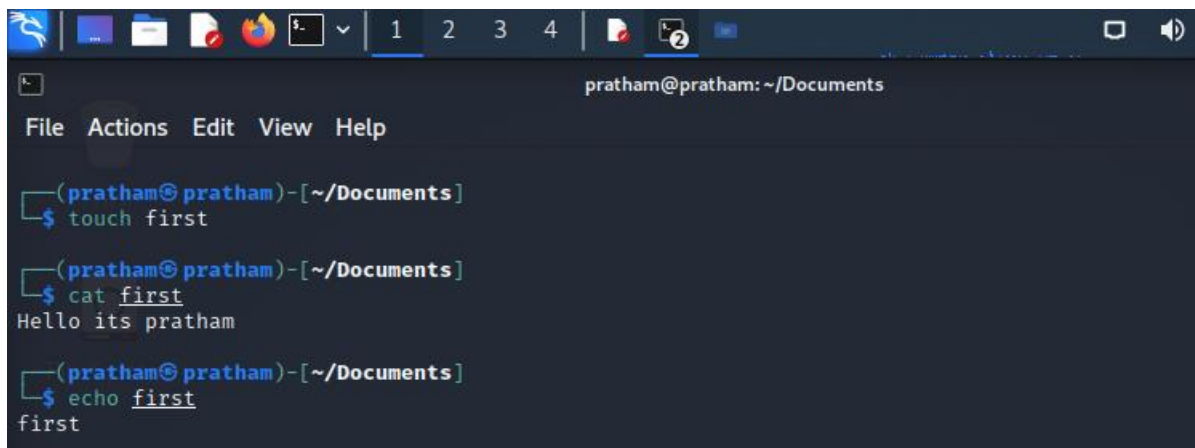


A terminal window titled 'pratham@pratham: ~/Documents' showing a series of commands and their outputs. The window has a dark theme and a menu bar with 'File', 'Actions', 'Edit', 'View', and 'Help'. The terminal shows the following sequence of commands and outputs:

```
(pratham@pratham)~[~/Documents]
$ ls
(pratham@pratham)~[~/Documents]
$ touch first
(pratham@pratham)~[~/Documents]
$ ls
first
(pratham@pratham)~[~/Documents]
$ cp first new
(pratham@pratham)~[~/Documents]
$ ls
first new
(pratham@pratham)~[~/Documents]
$ mv first new
(pratham@pratham)~[~/Documents]
$ ls
new
(pratham@pratham)~[~/Documents]
$ rm new
(pratham@pratham)~[~/Documents]
$ ls
(pratham@pratham)~[~/Documents]
$
```

The terminal output shows the creation of a file named 'first', its copying to 'new', its movement to 'new', and its subsequent removal. The final prompt is '\$'.

8) touch, cat, echo



A terminal window titled 'pratham@pratham: ~/Documents' showing a series of commands and their outputs. The window has a dark theme and a menu bar with 'File', 'Actions', 'Edit', 'View', and 'Help'. The terminal shows the following sequence of commands and outputs:

```
(pratham@pratham)~[~/Documents]
$ touch first
(pratham@pratham)~[~/Documents]
$ cat first
Hello its pratham
(pratham@pratham)~[~/Documents]
$ echo first
first
```

The terminal output shows the creation of a file named 'first', its contents being displayed with 'cat', and the command 'echo first' being executed, resulting in the output 'first'.

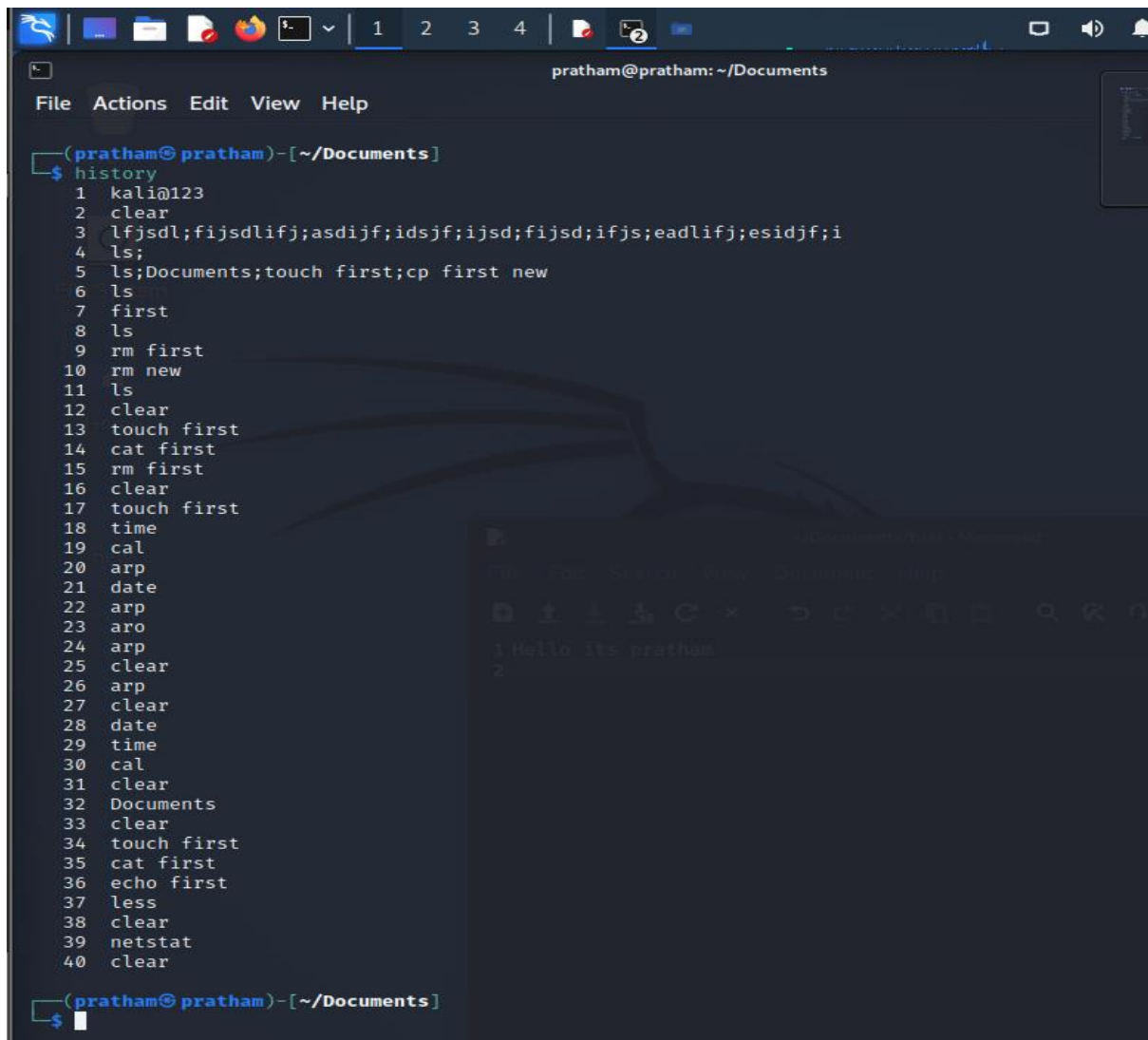
9)date , time , cal

```
pratham@pratham: ~  
File Actions Edit View Help  
(pratham@pratham)-[~]  
$ date  
Tue Feb 15 08:36:38 AM EST 2022  
(pratham@pratham)-[~]  
$ time  
real    54.64s  
user    1.00s  
sys     0.33s  
cpu     2%  
real    54.64s  
user    0.16s  
sys     0.07s  
cpu     0%  
(pratham@pratham)-[~]  
$ cal  
February 2022  
Su Mo Tu We Th Fr Sa  
      1  2  3  4  5  
 6  7  8  9 10 11 12  
13 14 15 16 17 18 19  
20 21 22 23 24 25 26  
27 28  
(pratham@pratham)-[~]  
$
```

10) netstat

```
pratham@pratham: ~/Documents  
File Actions Edit View Help  
(pratham@pratham)-[~/Documents]  
$ netstat  
Active Internet connections (w/o servers)  
Proto Recv-Q Send-Q Local Address           Foreign Address         State  
udp        0      0 10.0.2.15:bootpc        10.0.2.2:bootps        ESTABLISHED  
Active UNIX domain sockets (w/o servers)  
Proto RefCnt Flags       Type       State           I-Node  Path  
unix    3        [ ]          DGRAM                    14860    /run/systemd/notify  
unix    2        [ ]          DGRAM                    14875    /run/systemd/journal/syslog  
unix   12        [ ]          DGRAM                    14881    /run/systemd/journal/dev-log  
unix    6        [ ]          DGRAM                    14883    /run/systemd/journal/socket  
unix    2        [ ]          DGRAM                    16928    /run/user/1000/systemd/notify  
unix    3        [ ]          STREAM   CONNECTED       37583  
unix    3        [ ]          STREAM   CONNECTED       16300  
unix    3        [ ]          STREAM   CONNECTED       16270    @/tmp/.X11-unix/X0  
unix    3        [ ]          STREAM   CONNECTED       13076  
unix    3        [ ]          STREAM   CONNECTED       41624    /run/systemd/journal/stdout  
unix    3        [ ]          STREAM   CONNECTED       16335    /run/systemd/journal/stdout  
unix    3        [ ]          STREAM   CONNECTED       16056  
unix    3        [ ]          STREAM   CONNECTED       12942    /run/systemd/journal/stdout  
unix    3        [ ]          STREAM   CONNECTED       17135
```

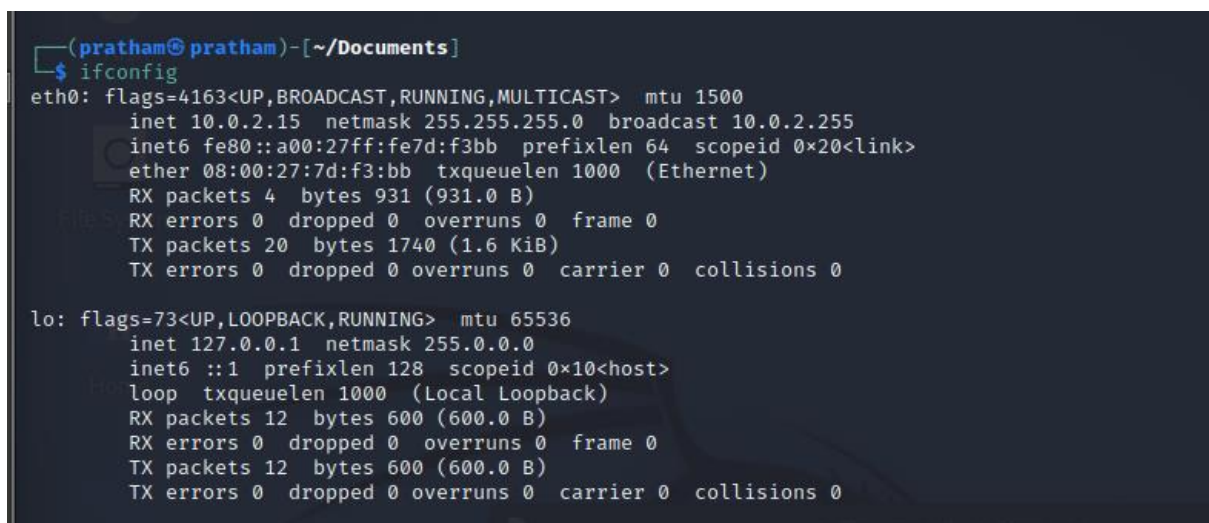
11)history



```
(pratham@pratham)-[~/Documents]
$ history
1 kali@123
2 clear
3 lfjsdl;fijsdlifj;asdiyf;idsjf;ijds;fijsd;ifjs;eadlifj;esidjf;i
4 ls;
5 ls;Documents;touch first;cp first new
6 ls
7 first
8 ls
9 rm first
10 rm new
11 ls
12 clear
13 touch first
14 cat first
15 rm first
16 clear
17 touch first
18 time
19 cal
20 arp
21 date
22 arp
23 aro
24 arp
25 clear
26 arp
27 clear
28 date
29 time
30 cal
31 clear
32 Documents
33 clear
34 touch first
35 cat first
36 echo first
37 less
38 clear
39 netstat
40 clear

(pratham@pratham)-[~/Documents]
$
```

12)ifconfig



```
(pratham@pratham)-[~/Documents]
$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fe80::a00:27ff:fe7d:f3bb prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:7d:f3:bb txqueuelen 1000 (Ethernet)
    RX packets 4 bytes 931 (931.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 20 bytes 1740 (1.6 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 12 bytes 600 (600.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 12 bytes 600 (600.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```


13)ping

```
(kali㉿kali)-[~]  
$ ping 10.0.2.15  
PING 10.0.2.15 (10.0.2.15) 56(84) bytes of data.  
64 bytes from 10.0.2.15: icmp_seq=1 ttl=64 time=0.047 ms  
64 bytes from 10.0.2.15: icmp_seq=2 ttl=64 time=0.062 ms  
64 bytes from 10.0.2.15: icmp_seq=3 ttl=64 time=0.066 ms  
64 bytes from 10.0.2.15: icmp_seq=4 ttl=64 time=0.064 ms  
64 bytes from 10.0.2.15: icmp_seq=5 ttl=64 time=0.063 ms  
64 bytes from 10.0.2.15: icmp_seq=6 ttl=64 time=0.063 ms  
64 bytes from 10.0.2.15: icmp_seq=7 ttl=64 time=0.061 ms  
64 bytes from 10.0.2.15: icmp_seq=8 ttl=64 time=0.068 ms  
64 bytes from 10.0.2.15: icmp_seq=9 ttl=64 time=0.060 ms  
64 bytes from 10.0.2.15: icmp_seq=10 ttl=64 time=0.064 ms  
64 bytes from 10.0.2.15: icmp_seq=11 ttl=64 time=0.063 ms  
64 bytes from 10.0.2.15: icmp_seq=12 ttl=64 time=0.063 ms  
64 bytes from 10.0.2.15: icmp_seq=13 ttl=64 time=0.064 ms  
64 bytes from 10.0.2.15: icmp_seq=14 ttl=64 time=0.063 ms  
64 bytes from 10.0.2.15: icmp_seq=15 ttl=64 time=0.064 ms  
64 bytes from 10.0.2.15: icmp_seq=16 ttl=64 time=0.062 ms  
64 bytes from 10.0.2.15: icmp_seq=17 ttl=64 time=0.054 ms  
64 bytes from 10.0.2.15: icmp_seq=18 ttl=64 time=0.074 ms  
64 bytes from 10.0.2.15: icmp_seq=19 ttl=64 time=0.083 ms  
64 bytes from 10.0.2.15: icmp_seq=20 ttl=64 time=0.063 ms  
64 bytes from 10.0.2.15: icmp_seq=21 ttl=64 time=0.063 ms  
64 bytes from 10.0.2.15: icmp_seq=22 ttl=64 time=0.064 ms  
64 bytes from 10.0.2.15: icmp_seq=23 ttl=64 time=0.064 ms
```