Practical Computing

ASSIGNMENT-1

Linux Commands

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Q1. Create a c file under this directory named as minimum.c using cat command.

```
harshita@harshita:~$ ls
Desktop  Documents  Downloads  Music  pc  Pictures  Public  Templates  Videos
harshita@harshita:~$ cd Desktop
harshita@harshita:~/Desktop$ mkdir this
harshita@harshita:~/Desktop$ cd this
harshita@harshita:~/Desktop/this$ cat >minimum.c
#include<stdio.h>
int main()
{
    int a, b, c, min;
    printf("Enter three numbers : ");
    scanf("%d %d %d", &a, &b, &c);
    min = (a<b) ? (a<c?a:c) : (b<c?b:c);
    printf("\nminimum = %d", min);
    return 0;
}
^Z
[1]+  Stopped                 cat > minimum.c
harshita@harshita:~/Desktop/this$ █
```

Q2. A) Display the content of the file using cat command
B) Add line number in that file

```
harshita@harshita:~/Desktop/this$ cat minimum.c
#include<stdio.h>
int main()
{
    int a, b, c, min;
    printf("Enter three numbers : ");
    scanf("%d %d %d", &a, &b, &c);
    min = (a<b) ? (a<c?a:c) : (b<c?b:c);
    printf("\nminimum = %d", min);
    return 0;
}
harshita@harshita:~/Desktop/this$ cat -n minimum.c
     1  #include<stdio.h>
     2  int main()
     3  {
     4      int a, b, c, min;
     5      printf("Enter three numbers : ");
     6      scanf("%d %d %d", &a, &b, &c);
     7      min = (a<b) ? (a<c?a:c) : (b<c?b:c);
     8      printf("\nminimum = %d", min);
     9      return 0;
    10  }
harshita@harshita:~/Desktop/this$ █
```

Q3. Execute the cat command using the > and >> directives.

```
harshita@harshita:~$ cd this
bash: cd: this: No such file or directory
harshita@harshita:~$ cd Desktop
harshita@harshita:~/Desktop$ cd this
harshita@harshita:~/Desktop/this$ ls
f1.txt  f2.txt  file1.txt  file2.txt  minimum.c
harshita@harshita:~/Desktop/this$ cat>new.txt
Hello
^Z
[1]+  Stopped                 cat > new.txt
harshita@harshita:~/Desktop/this$ cat>>new.txt
World
^Z
[2]+  Stopped                 cat >> new.txt
harshita@harshita:~/Desktop/this$ cat new.txt
Hello
World
harshita@harshita:~/Desktop/this$
```

Q4. Copy the content of the file in minimum.c for printing minimum among three numbers taken from keyboard and execute it.(cp)

```
harshita@harshita:~$ cat >mincopy.c
#include<stdio.h>
int main()
{
    int a, b, c, small;
    printf("Enter three numbers : ");
    scanf("%d%d%d", &a, &b, &c);
    small = (a<b) ? (a<c?a:c) : (b<c?b:c);
    printf("\nSmallest = %d", small);
    return 0;
}
^Z
[1]+  Stopped                 cat > mincopy.c
harshita@harshita:~$ cat mincopy.c>minimum.c
harshita@harshita:~$ cat minimum.c
#include<stdio.h>
int main()
{
    int a, b, c, small;
    printf("Enter three numbers : ");
    scanf("%d%d%d", &a, &b, &c);
    small = (a<b) ? (a<c?a:c) : (b<c?b:c);
    printf("\nSmallest = %d", small);
    return 0;
}
^Z
[1]+  Stopped                 cat > mincopy.c
harshita@harshita:~$ cat mincopy.c>minimum.c
harshita@harshita:~$ cat minimum.c
#include<stdio.h>
int main()
{
    int a, b, c, small;
    printf("Enter three numbers : ");
    scanf("%d%d%d", &a, &b, &c);
    small = (a<b) ? (a<c?a:c) : (b<c?b:c);
    printf("\nSmallest = %d", small);
    return 0;
}
harshita@harshita:~$ cat mincopy.c>minimum.c
harshita@harshita:~$ cat minimum.c
#include<stdio.h>
int main()
{
    int a, b, c, small;
    printf("Enter three numbers : ");
    scanf("%d%d%d", &a, &b, &c);
    small = (a<b) ? (a<c?a:c) : (b<c?b:c);
    printf("\nSmallest = %d", small);
    return 0;
}
harshita@harshita:~$ gcc minimum.c -o minimum
harshita@harshita:~$ ./minimum
Enter three numbers : 4 15 99

Smallest = 4harshita@harshita:~$
```

Q5.A) List out all the files present in the system (including hidden ones)

```
harshita@harshita:~$ ls -a
.                 Downloads   .ssh
..                .gnupg      .sudo_as_admin_successful
.bash_history     .local      Templates
.bash_logout      .mozilla    .vboxclient-clipboard.pid
.bashrc           Music       .vboxclient-display-svga-x11.pid
.cache            pc          .vboxclient-draganddrop.pid
.config           Pictures    .vboxclient-seamless.pid
Desktop           .profile    Videos
Documents         Public
harshita@harshita:~$
```

B) List all the files with their size.

```
harshita@harshita:~$ ls -s
total 36
4 Desktop     4 Downloads   4 pc         4 Public      4 Videos
4 Documents   4 Music       4 Pictures   4 Templates
harshita@harshita:~$
```

C) Sort all the listed files with time and date

```
harshita@harshita:~$ ls -lt
total 36
drwxr-xr-x 3 harshita harshita 4096 Sep  7 16:21 Desktop
drwxr-xr-x 2 harshita harshita 4096 Sep  7 01:02 Pictures
drwxrwxr-x 2 harshita harshita 4096 Sep  7 00:21 pc
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Documents
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Downloads
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Music
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Public
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Templates
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Videos
harshita@harshita:~$
```

Q6. We have a file sample.txt.
A) How can we use this redirection operator as ">"?
B) Also, the other redirection operator as ">>"?

```
harshita@harshita:~$ cat >pc.txt
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^Z
[1]+  Stopped                    cat > pc.txt
harshita@harshita:~$ cat pc.txt>>pcnew.txt
harshita@harshita:~$ cat pcnew.txt
Practical Computing
harshita@harshita:~$
```

Q7. How to copy a file in Linux?

```
harshita@harshita:~$ cd Desktop
harshita@harshita:~/Desktop$ mkdir prac
harshita@harshita:~/Desktop$ cd prac
harshita@harshita:~/Desktop/prac$ ls
harshita@harshita:~/Desktop/prac$ cat >a
hello everyone!
^Z
[1]+  Stopped                     cat > a
harshita@harshita:~/Desktop/prac$ cp a anew
harshita@harshita:~/Desktop/prac$ cat anew
hello everyone!
harshita@harshita:~/Desktop/prac$
```

Q8. How would you delete a directory in Linux? Execute both the commands.
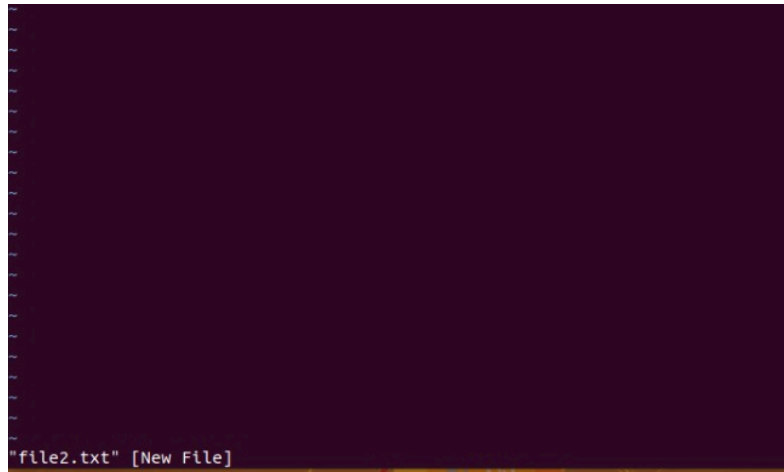
```
harshita@harshita:~$ ls
Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos
harshita@harshita:~$ cd Desktop
harshita@harshita:~/Desktop$ mkdir new1
harshita@harshita:~/Desktop$ mkdir new2
harshita@harshita:~/Desktop$ ls
new1  new2  prac
harshita@harshita:~/Desktop$ rmdir new1
harshita@harshita:~/Desktop$ ls
new2  prac
harshita@harshita:~/Desktop$ rm -r new2
harshita@harshita:~/Desktop$ ls
prac
harshita@harshita:~/Desktop$
```

Q9. How the case sensitivity does effects the way you use commands?

```
harshita@harshita:~$ cd Desktop
harshita@harshita:~/Desktop$ LS
LS: command not found
harshita@harshita:~/Desktop$ ls
prac
harshita@harshita:~/Desktop$ CD prac
CD: command not found
harshita@harshita:~/Desktop$ cd prac
harshita@harshita:~/Desktop/prac$ cal
    September 2021
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 29 30

harshita@harshita:~/Desktop/prac$ CAL
CAL: command not found
harshita@harshita:~/Desktop/prac$
```

Q10. (A-G)

Q11. Create another directory CSED under the CSE. Delete the directory using rmdir .

Q12. Apply touch command and also used vi to create the same file.

```
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
"file2.txt" [New File]
```

Q13. Join multiple files and display multiple files using cat command.

```
harshita@harshita:~$ cat c1.txt
Sample file 1
harshita@harshita:~$ cat c2.txt
Sample file 2
harshita@harshita:~$ cat c1.txt>>c2.txt
harshita@harshita:~$ cat c2.txt
Sample file 2
Sample file 1
harshita@harshita:~$ cat c1.txt c3.txt
Sample file 1
Sample file 3
harshita@harshita:~$
```

Q14. Apply mv command for Directory and Files

```
harshita@harshita:~$ cd Desktop
harshita@harshita:~/Desktop$ mkdir sample1
harshita@harshita:~/Desktop$ ls
da   db   sample1
harshita@harshita:~/Desktop$ mv da sample1/
harshita@harshita:~/Desktop$ ls
db   sample1
harshita@harshita:~/Desktop$ cd sample1
harshita@harshita:~/Desktop/sample1$ ls
da
harshita@harshita:~/Desktop/sample1$ cd ..
harshita@harshita:~/Desktop$ touch sampfile1.txt
harshita@harshita:~/Desktop$ ls
db   sampfile1.txt   sample1
harshita@harshita:~/Desktop$ mv sampfile1.txt sample1/
harshita@harshita:~/Desktop$ cd sample1
harshita@harshita:~/Desktop/sample1$ ls
da   sampfile1.txt
harshita@harshita:~/Desktop/sample1$
```

Q15. Create a directory d26 and create two files f3.c and g4.c.

```
harshita@harshita:~$ mkdir d26
harshita@harshita:~$ ls
d26  Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos
harshita@harshita:~$ cd d26
harshita@harshita:~/d26$ touch f3.c g4.c
harshita@harshita:~/d26$ ls
f3.c  g4.c
harshita@harshita:~/d26$
```

Q16. Apply rm and rmdir to delete the files and the directory.

```
harshita@harshita:~$ ls
a.txt   c      Desktop     Downloads  Pictures  Templates
b.txt   d26   Documents   Music                 Public     Videos
harshita@harshita:~$ rmdir c
harshita@harshita:~$ ls
a.txt   d26         Documents   Music       Public     Videos
b.txt   Desktop   Downloads   Pictures   Templates
harshita@harshita:~$ rm a.txt
harshita@harshita:~$ ls
b.txt   Desktop     Downloads  Pictures  Templates
d26     Documents   Music                 Public     Videos
harshita@harshita:~$
```

Q17. Apply pr command for the file f1.c using different options.

```
harshita@harshita:~$ cat>f1.c
#include<stdio.h>
int main()
{
printf("HElloWorld");
return 0;
}
^Z
[1]+  Stopped                      cat > f1.c
harshita@harshita:~$ pr -t f1.c
#include<stdio.h>
int main()
{
printf("HElloWorld");
return 0;
}
harshita@harshita:~$ pr -t -3 f1.c
#include<stdio.h>       {                                  return 0;
int main()              printf("HElloWorld");   }
harshita@harshita:~$
```

Q18. Write down the output of ls command with -l, -ltr, -1 , -ld , -lt , -a , -A , -i , -s , -S.

```
drwxr-xr-x 2 harshita harshita 4096 Sep  7 22:12 Desktop
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Documents
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Downloads
-rw-rw-r-- 1 harshita harshita   65 Sep  7 22:26 f1.c
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Music
drwxr-xr-x 2 harshita harshita 4096 Sep  7 01:02 Pictures
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Public
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Templates
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Videos
harshita@harshita:~$ ls -ltr
total 40
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Videos
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Templates
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Public
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Music
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Downloads
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Documents
drwxr-xr-x 2 harshita harshita 4096 Sep  7 01:02 Pictures
drwxr-xr-x 2 harshita harshita 4096 Sep  7 22:12 Desktop
drwxrwxr-x 2 harshita harshita 4096 Sep  7 22:21 d26
-rw-rw-r-- 1 harshita harshita    0 Sep  7 22:22 b.txt
-rw-rw-r-- 1 harshita harshita   65 Sep  7 22:26 f1.c
harshita@harshita:~$
harshita@harshita:~$ ls -1
b.txt
d26
Desktop
Documents
Downloads
f1.c
Music
Pictures
Public
Templates
Videos
harshita@harshita:~$ ls -ld
drwxr-xr-x 17 harshita harshita 4096 Sep  7 22:26 .
harshita@harshita:~$
```

```
harshita@harshita:~$ ls -lt
total 40
-rw-rw-r-- 1 harshita harshita   65 Sep  7 22:26 f1.c
-rw-rw-r-- 1 harshita harshita    0 Sep  7 22:22 b.txt
drwxrwxr-x 2 harshita harshita 4096 Sep  7 22:21 d26
drwxr-xr-x 2 harshita harshita 4096 Sep  7 22:12 Desktop
drwxr-xr-x 2 harshita harshita 4096 Sep  7 01:02 Pictures
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Documents
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Downloads
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Music
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Public
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Templates
drwxr-xr-x 2 harshita harshita 4096 Aug  8 14:08 Videos
harshita@harshita:~$ ls -a
.                .config    .local     .sudo_as_admin_successful
..               d26        .mozilla   Templates
.bash_history    Desktop    Music      .vboxclient-clipboard.pid
.bash_logout     Documents  Pictures   .vboxclient-display-svga-x11.pid
.bashrc          Downloads  .profile   .vboxclient-draganddrop.pid
b.txt            f1.c       Public     .vboxclient-seamless.pid
.cache           .gnupg     .ssh       Videos
harshita@harshita:~$

harshita@harshita:~$ ls -A
.bash_history  Downloads  .ssh
.bash_logout   f1.c       .sudo_as_admin_successful
.bashrc        .gnupg     Templates
b.txt          .local     .vboxclient-clipboard.pid
.cache         .mozilla   .vboxclient-display-svga-x11.pid
.config        Music      .vboxclient-draganddrop.pid
d26            Pictures   .vboxclient-seamless.pid
Desktop        .profile   Videos
Documents      Public
harshita@harshita:~$ ls -i
 532904 b.txt      550014 Documents   550015 Music      1211725 Templates
1062218 d26       1211724 Downloads   550016 Pictures    550017 Videos
1070450 Desktop    532900 f1.c       1211726 Public
harshita@harshita:~$ ls -s
total 40
0 b.txt   4 Desktop    4 Downloads  4 Music     4 Public    4 Videos
4 d26     4 Documents  4 f1.c       4 Pictures  4 Templates
harshita@harshita:~$ ls -S
d26       Documents  Music      Public     Videos   b.txt
Desktop   Downloads  Pictures   Templates  f1.c
harshita@harshita:~$
```

Q19. Execute the command for copying a directory from current location to other location.

```
harshita@harshita:~$ cd Desktop
harshita@harshita:~/Desktop$ ls
da  db
harshita@harshita:~/Desktop$ cp -R db da/
harshita@harshita:~/Desktop$ ls
da  db
harshita@harshita:~/Desktop$ cd da
harshita@harshita:~/Desktop/da$ ls
db
harshita@harshita:~/Desktop/da$
```