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<p align="center">L21_L22_Lab1 Exercises</p>

➢ **Develop a C Program to display the list of courses you have registered in this semester using only printf().**

> ➤ **Develop a C program to show the difference between pass by reference and pass by value.**

```
pv@pv-Vostro-5402: ~/Desktop/os_lab_observations

pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ gedit pointers.c
^C
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ gcc pointers.c
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ ./a.out
Actual value :5095
Pass by Value :5095
Pass by Reference or Address :509500
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$
```

```
pv@pv-Vostro-5402: ~/Desktop/os_lab_observations

pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ cat pointers.c
#include<stdio.h>
void passVal(int n)
{
n=n*100;
}
void passAddr(int *n)
{
*n=*n*100;
}
int main()
{
int n=5095;
printf("Actual value :%d\n",n);
passVal(n);
printf("Pass by Value :%d\n",n);
passAddr(&n);
printf("Pass by Reference or Address :%d\n",n);
return 0;
}
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$
```

```
pv@pv-Vostro-5402: ~/Desktop/os_lab_observations

pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ gedit swap.c
^C
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ gcc swap.c
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ ./a.out
Actual numbers: 100,200
After swap using pass by value: 100 200
After swap using pass by Reference: 200 100
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ cat swap.c
#include<stdio.h>
void swapval(int n1,int n2){
int t=n1;
n1=n2;
n2=t;
}
void swapaddr(int *n1,int *n2){
int t=*n1;
*n1=*n2;
*n2=t;
}

int main()
{
int a=100;
int b=200;
printf("Actual numbers: %d,%d\n",a,b);
swapval(a,b);
printf("After swap using pass by value: %d %d\n",a,b);
swapaddr(&a,&b);
printf("After swap using pass by Reference: %d %d\n",a,b);
return 0;
}
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ 
```

➤ Develop a C program to display the following using **system()** library function (through which you can run linux commands from c program)

        (i) today's date
        (ii) present working directory

```
pv@pv-Vostro-5402: ~/Desktop/os_lab_observations

pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ gedit sydate.c
^C
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ cat sydate.c
#include<stdlib.h>
int main()
{
system("date");
return 0;
}
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ gcc sydate.c
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ ./a.out
Thursday 05 January 2023 12:49:01 PM IST
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ 
```

```
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ gcc currentDir.c
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ gcc currentDir.c
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ ./a.out
/home/pv/Desktop/os_lab_observations
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ cat currentDir.c
#include<stdlib.h>
int main()
{
system("pwd");
return 0;
}
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$
```
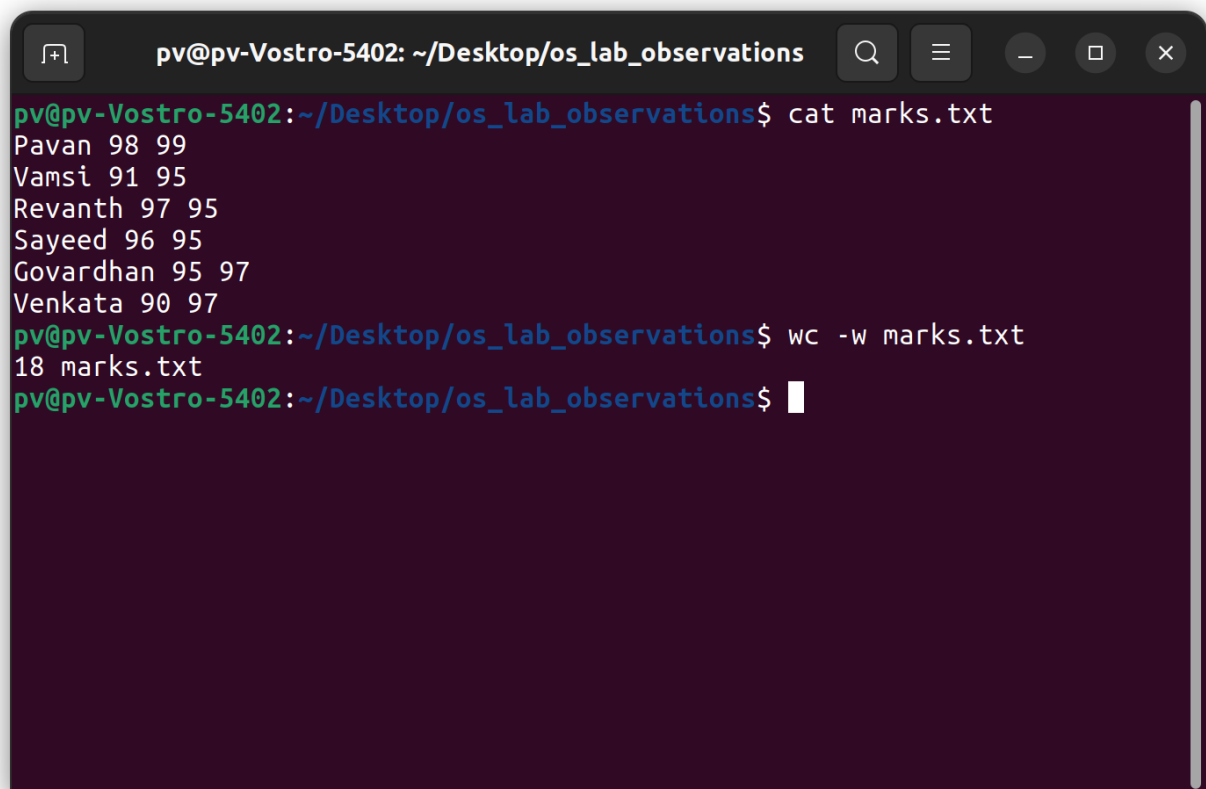
```
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ pwd
/home/pv/Desktop/os_lab_observations
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ date
Thursday 05 January 2023 01:06:28 PM IST
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$
```

➢ Show the marks of CAT1 in sorting order from the marks.txt file using appropriate linux command

```
pv@pv-Vostro-5402: ~/Desktop/os_lab_observations

pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ gedit marks.txt
^C
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ cut -d " " -f2 marks.txt
98
91
97
96
95
90
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ cut -d " " -f2 marks.txt|sort
90
91
95
96
97
98
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ cut -d " " -f2 marks.txt|sort -r
98
97
96
95
91
90
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ cat marks.txt
Pavan 98 99
Vamsi 91 95
Revanth 97 95
Sayeed 96 95
Govardhan 95 97
Venkata 90 97
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$
```

```
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ cat marks.txt
Pavan 98 99
Vamsi 91 95
Revanth 97 95
Sayeed 96 95
Govardhan 95 97
Venkata 90 97
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ sort -k 2n marks.txt
Venkata 90 97
Vamsi 91 95
Govardhan 95 97
Sayeed 96 95
Revanth 97 95
Pavan 98 99
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$
```

➢ Display the word count of the file using appropriate linux command

```
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ cat marks.txt
Pavan 98 99
Vamsi 91 95
Revanth 97 95
Sayeed 96 95
Govardhan 95 97
Venkata 90 97
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ wc -w marks.txt
18 marks.txt
pv@pv-Vostro-5402:~/Desktop/os_lab_observations$ 
```

Make a document of Linux commands of your choice of any 4 commands.

Command	Description
1. **man**	- It is a command used as help - every time if we dont know how to use any command we can type man <command>
2. **ls**	- Inside a folder you can list all the files that the folder contains using the ls command - ls
3. **cd**	- Once you are in a folder using the cd command you can change your directory from that location - cd Desktop/
4. **pwd**	- It shows the directory where we are working at the moment - pwd
5. **mkdir**	- You can create a folder using mkdir command - mkdir <folder name>
6. **rmdir**	- You can remove a folder using rmdir command - rmdir <folder name>
7. **cat**	- Using this command we can ceate files and add content to that file, append the content to that file - cat > file.txt - creates the file and ask to enter the data required - cat >>file.txt - to append the content - cat file.txt - to view the content
8. **wc**	Word count
9. **Cut**	Cut option according to diffrent methods
10. **clear**	Clears all the working screen
11. **history**	It shows all the commands you used in the terminal from the start