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LAB 1 SUBMISSION

QUESTIONS

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

CODE:

```
#include <stdio.h>
```

```
int main()
```

```
{
```

```
    char arr[100][100] = {"Maths", "OS", "CAO", "DBMS", "Compiler Design", "BSTS"};
```

```
    printf("String array Elements are:\n");
```

```
    for (int i = 0; i <= 6; i++)
```

```
    {
```

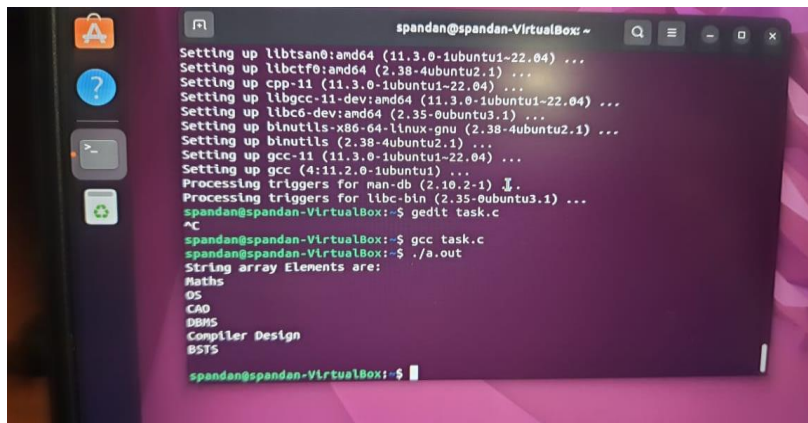
```
        printf("%s\n", arr[i]);
```

```
    }
```

```
    return 0;
```

```
}
```

OUTPUT:



```
spandan@spandan-VirtualBox: ~  
Setting up libtsan0:amd64 (11.3.0-1ubuntu1-22.04) ...  
Setting up libctf0:amd64 (2.38-4ubuntu2.1) ...  
Setting up cpp-11 (11.3.0-1ubuntu1-22.04) ...  
Setting up libgcc-11-dev:amd64 (11.3.0-1ubuntu1-22.04) ...  
Setting up libc6-dev:amd64 (2.35-0ubuntu3.1) ...  
Setting up binutils-x86-64-linux-gnu (2.38-4ubuntu2.1) ...  
Setting up binutils (2.38-4ubuntu2.1) ...  
Setting up gcc-11 (11.3.0-1ubuntu1-22.04) ...  
Setting up gcc (4:11.2.0-1ubuntu1) ...  
Processing triggers for man-db (2.10.2-1) ...  
Processing triggers for libc-bin (2.35-0ubuntu3.1) ...  
spandan@spandan-VirtualBox:~$ gedit task.c  
^C  
spandan@spandan-VirtualBox:~$ gcc task.c  
spandan@spandan-VirtualBox:~$ ./a.out  
String array Elements are:  
Maths  
OS  
CAO  
DBMS  
Compiler Design  
BSTS  
spandan@spandan-VirtualBox:~$
```

- 2) Develop a C program to show the difference between pass by reference and pass by value.

CODE:

```
#include <stdio.h>
```

```
void swapx(int *, int *);
```

```
void swapy(int x, int y);
```

```
int main ()
```

```
{
```

```
    int a = 10, b = 20;
```

```
    int c = 6, d = 15;
```

```
    // call by reference
```

```
    swapx (&a, &b);
```

```
    printf ("a=%d b=%d\n", a, b);
```

```
    // call by value
```

```
    swapy(c,d);
```

```
    printf("c=%d d=%d\n",c,d);
```

```
    return 0;
```

```
}
```

```
void swapx (int *x, int *y)
```

```
{
```

```
    int t;
```

```
    t = *x;
```

```
    *x = *y;
```

```
    *y = t;
```

```
void swapy(int x, int y)
```

```

{
    int t;

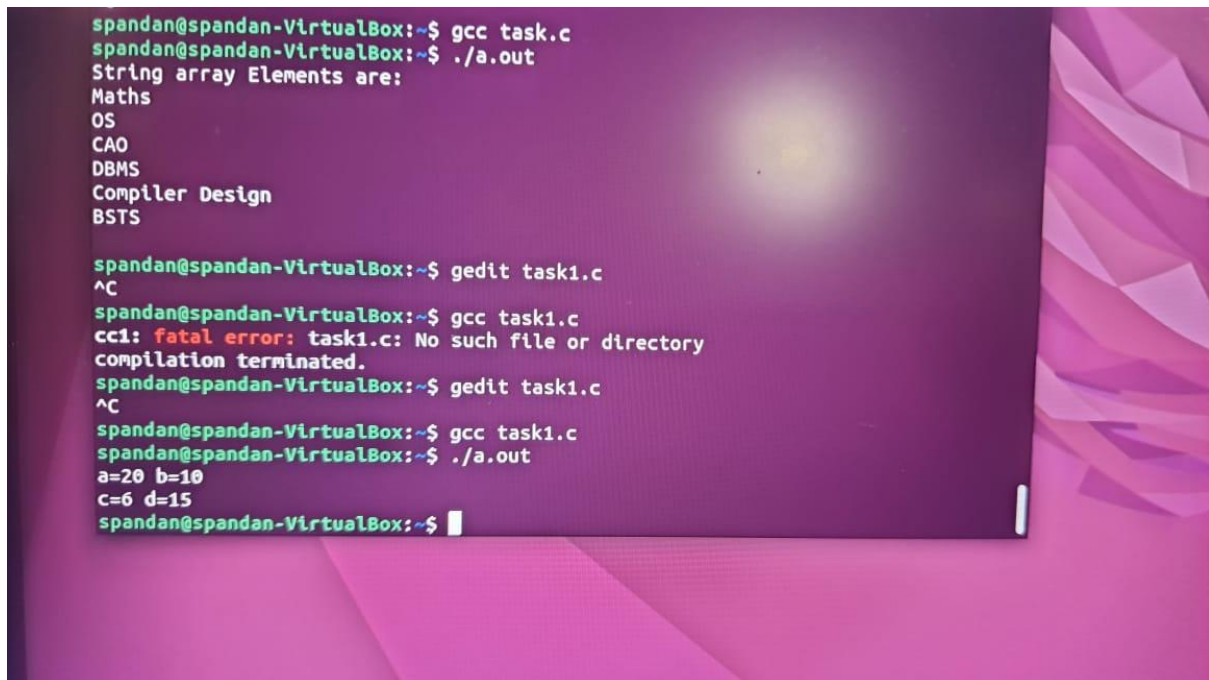
    t = x;

    x = y;

    y = t;
}

```

OUTPUT:



```

spandan@spandan-VirtualBox:~$ gcc task.c
spandan@spandan-VirtualBox:~$ ./a.out
String array Elements are:
Maths
OS
CAO
DBMS
Compiler Design
BSTS

spandan@spandan-VirtualBox:~$ gedit task1.c
^C
spandan@spandan-VirtualBox:~$ gcc task1.c
cc1: fatal error: task1.c: No such file or directory
compilation terminated.
spandan@spandan-VirtualBox:~$ gedit task1.c
^C
spandan@spandan-VirtualBox:~$ gcc task1.c
spandan@spandan-VirtualBox:~$ ./a.out
a=20 b=10
c=6 d=15
spandan@spandan-VirtualBox:~$

```

- 3) 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

(i)

CODE:

```
#include<stdio.h>
```

```
#include<time.h>
```

```
void main()
```

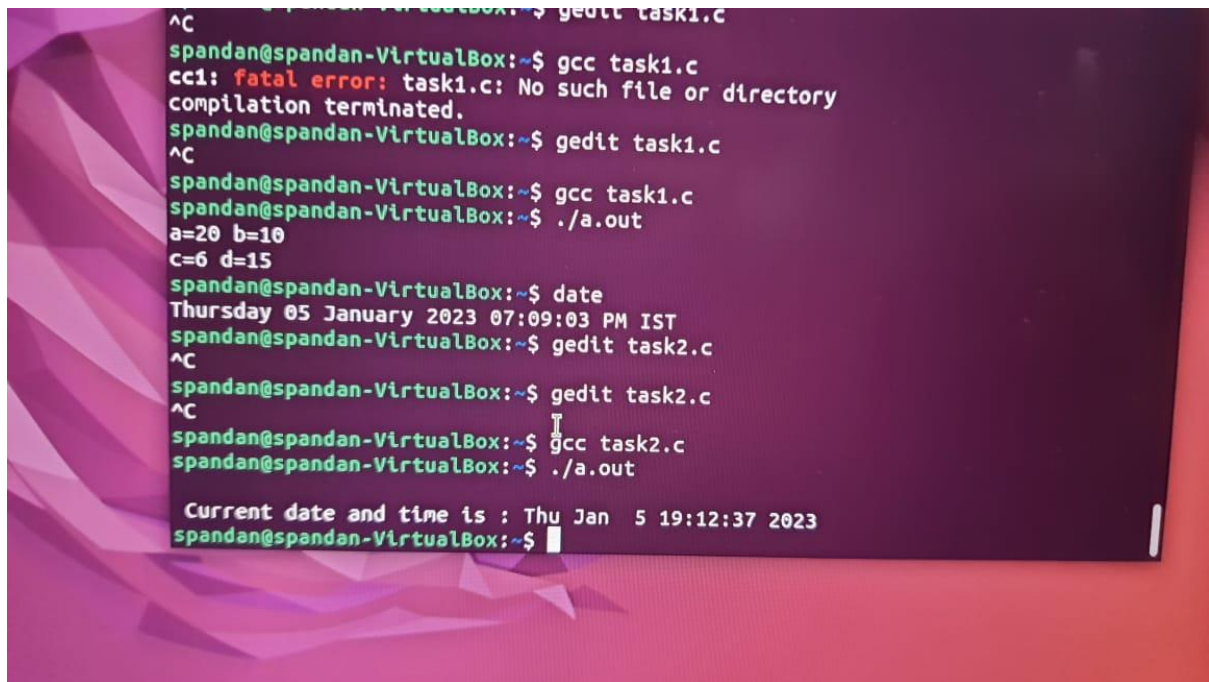
```

{
    time_t t = time(NULL);

    printf("\n Current date and time is : %s", ctime(&t));
}

```

OUTPUT:



```

spandan@spandan-VirtualBox:~$ gcc task1.c
cc1: fatal error: task1.c: No such file or directory
compilation terminated.
spandan@spandan-VirtualBox:~$ gedit task1.c
^C
spandan@spandan-VirtualBox:~$ gcc task1.c
spandan@spandan-VirtualBox:~$ ./a.out
a=20 b=10
c=6 d=15
spandan@spandan-VirtualBox:~$ date
Thursday 05 January 2023 07:09:03 PM IST
spandan@spandan-VirtualBox:~$ gedit task2.c
^C
spandan@spandan-VirtualBox:~$ gedit task2.c
^C
spandan@spandan-VirtualBox:~$ gcc task2.c
spandan@spandan-VirtualBox:~$ ./a.out

Current date and time is : Thu Jan 5 19:12:37 2023
spandan@spandan-VirtualBox:~$

```

(ii)

CODE:

```

#include<stdio.h>

#include<unistd.h>

#include<stdlib.h>

int main() {
    char *buf;

    buf=(char *)malloc(100*sizeof(char));

    getcwd(buf,100);

    printf("\n %s \n",buf);
}

```

OUTPUT:

```
Current date and time is : Thu Jan 5 19:12:37 2023
spandan@spandan-VirtualBox:~$ gedit task3.c
^C
spandan@spandan-VirtualBox:~$ gcc task3.c
task3.c:5:1: warning: return type defaults to 'int' [-Wimplicit-int]
  5 | main() {
    | ^~~~~~
spandan@spandan-VirtualBox:~$ gedit task3.c
^C
spandan@spandan-VirtualBox:~$ gcc task3.c
spandan@spandan-VirtualBox:~$ ./a.out

/home/spandan
spandan@spandan-VirtualBox:~$
```

4) Make a document of linux commands of your choice of any 4 commands.

i)

```
spandan@spandan-VirtualBox:~$ gedit task3.c
^C
spandan@spandan-VirtualBox:~$ gcc task3.c
spandan@spandan-VirtualBox:~$ ./a.out

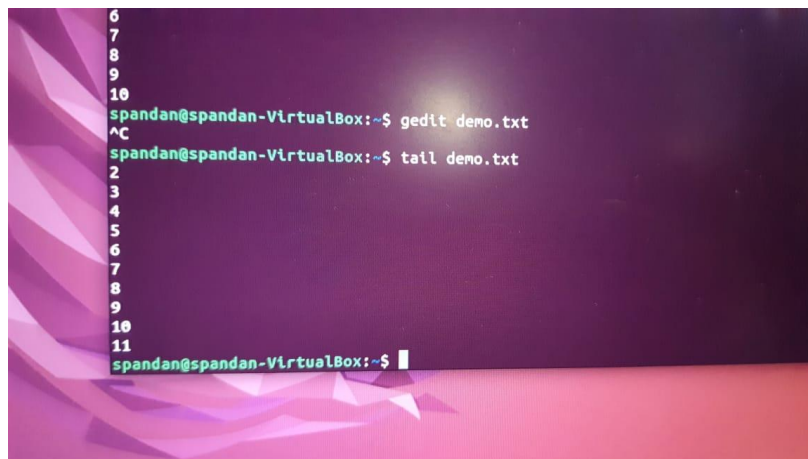
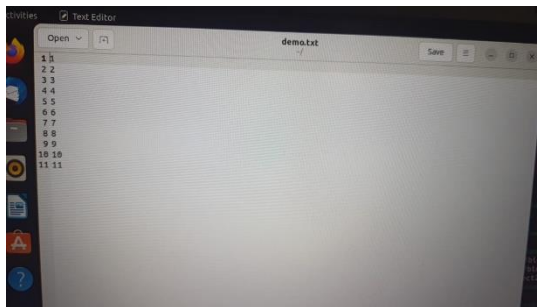
/home/spandan
spandan@spandan-VirtualBox:~$ gedit task3.c
^C
spandan@spandan-VirtualBox:~$ pwd
/home/spandan
spandan@spandan-VirtualBox:~$
```

ii) Ls

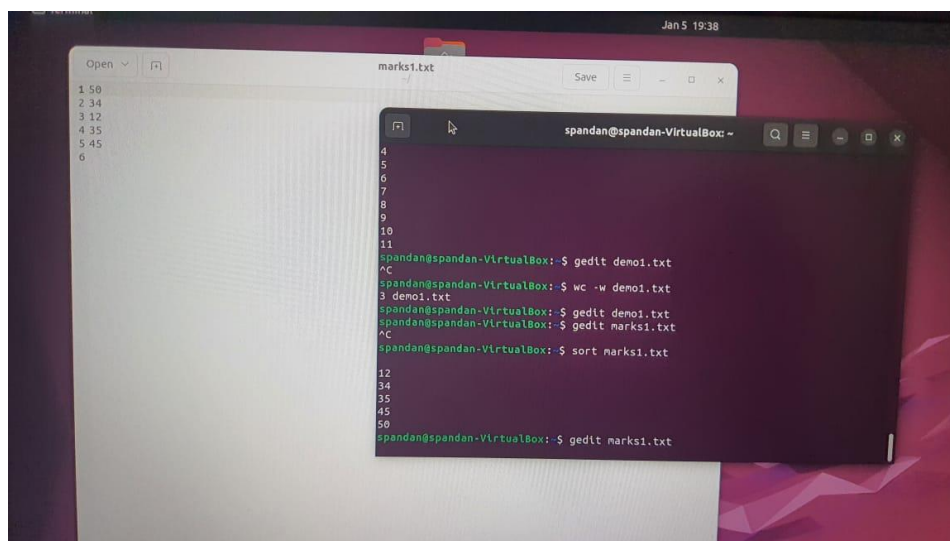
```
spandan@spandan-VirtualBox:~$ gedit task3.c
^C
spandan@spandan-VirtualBox:~$ gcc task3.c
spandan@spandan-VirtualBox:~$ ./a.out

/home/spandan
spandan@spandan-VirtualBox:~$ gedit task3.c
^C
spandan@spandan-VirtualBox:~$ pwd
/home/spandan
spandan@spandan-VirtualBox:~$ ls
a.out  Desktop  Downloads  Music  Pictures  Public  snap  task1.c  task2.c  task3.c  task.c  Templates  Videos
spandan@spandan-VirtualBox:~$
```

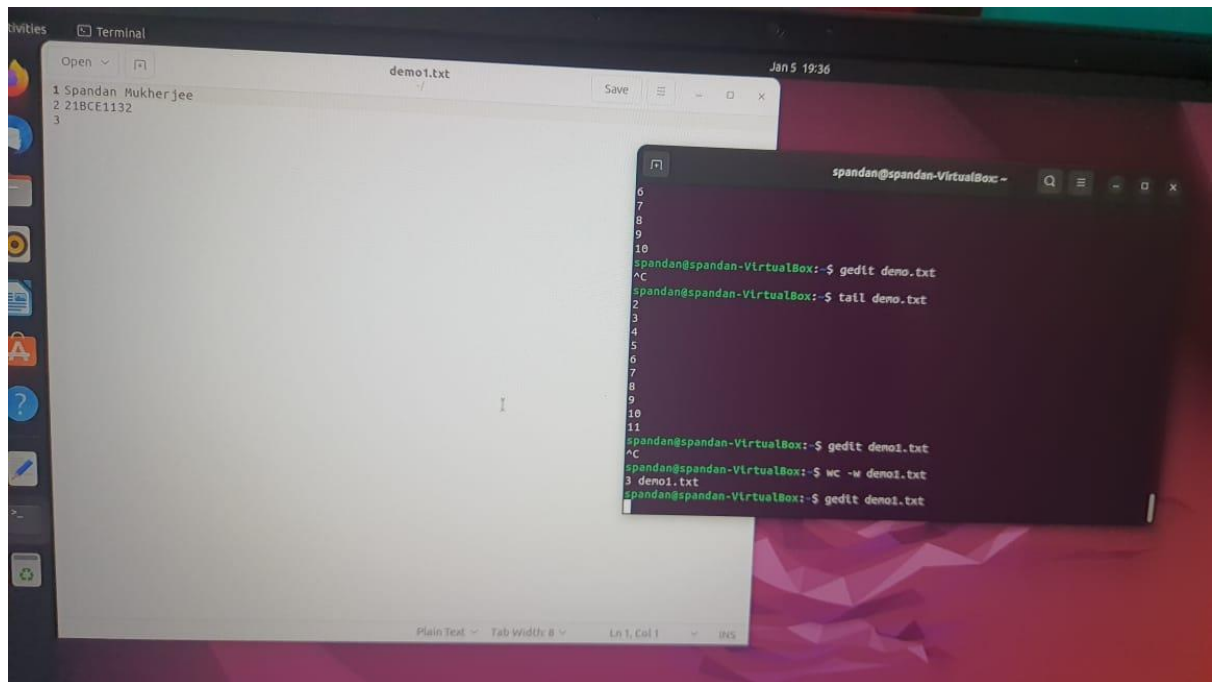
iii) tail and head



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



6) Display the word count of the file using appropriate linux command



The screenshot shows a Linux desktop environment. In the foreground, a text editor window titled 'demo1.txt' is open, displaying the following content:

```
1 Spandan Mukherjee
2 21BCE1132
3
```

In the background, a terminal window titled 'spandan@spandan-VirtualBox: ~' is open, showing the following commands and output:

```
6
7
8
9
10
spandan@spandan-VirtualBox:~$ gedit demo.txt
^C
spandan@spandan-VirtualBox:~$ tail demo.txt
2
3
4
5
6
7
8
9
10
11
spandan@spandan-VirtualBox:~$ gedit demo1.txt
^C
spandan@spandan-VirtualBox:~$ wc -w demo1.txt
3 demo1.txt
spandan@spandan-VirtualBox:~$ gedit demo1.txt
```

The terminal window also shows a list of line numbers from 6 to 11 on the left side of the command history.