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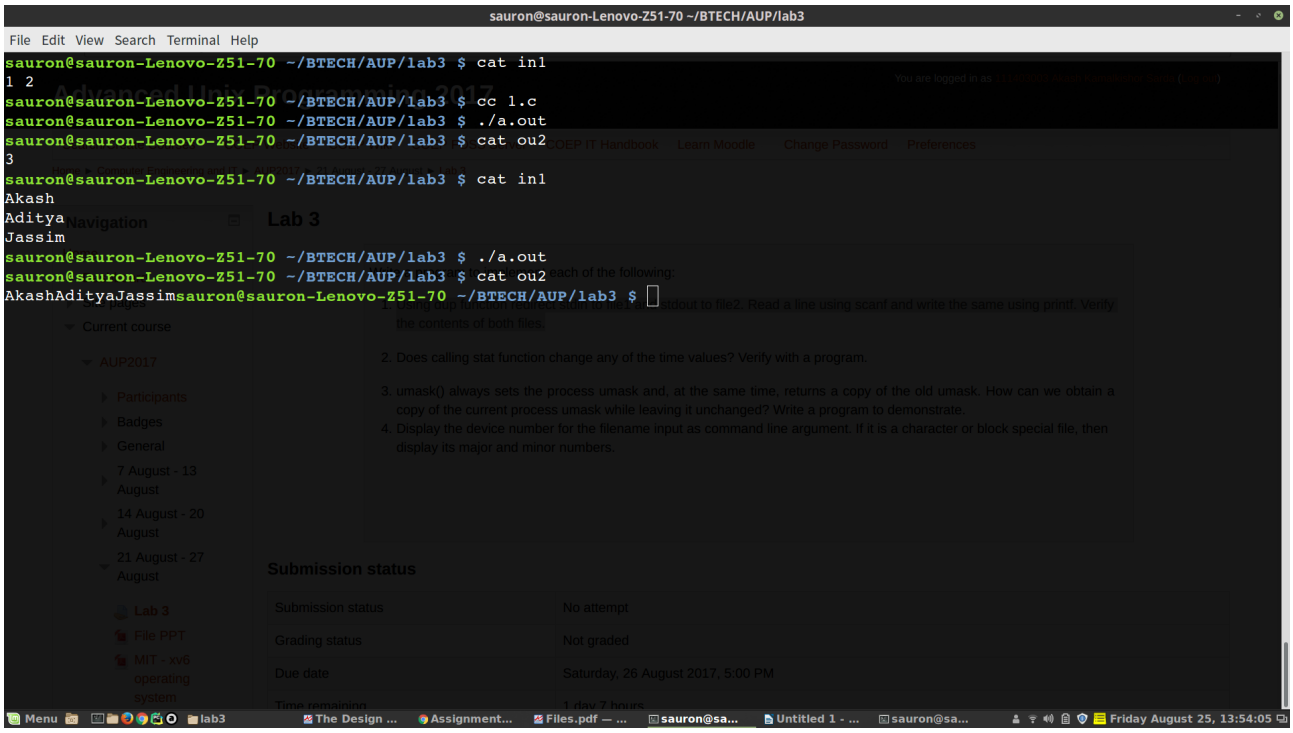
LAB #3

1. Using dup function redirect stdin to file1 and stdout to file2. Read a line using scanf and write the same using printf. Verify the contents of both files.

Program:

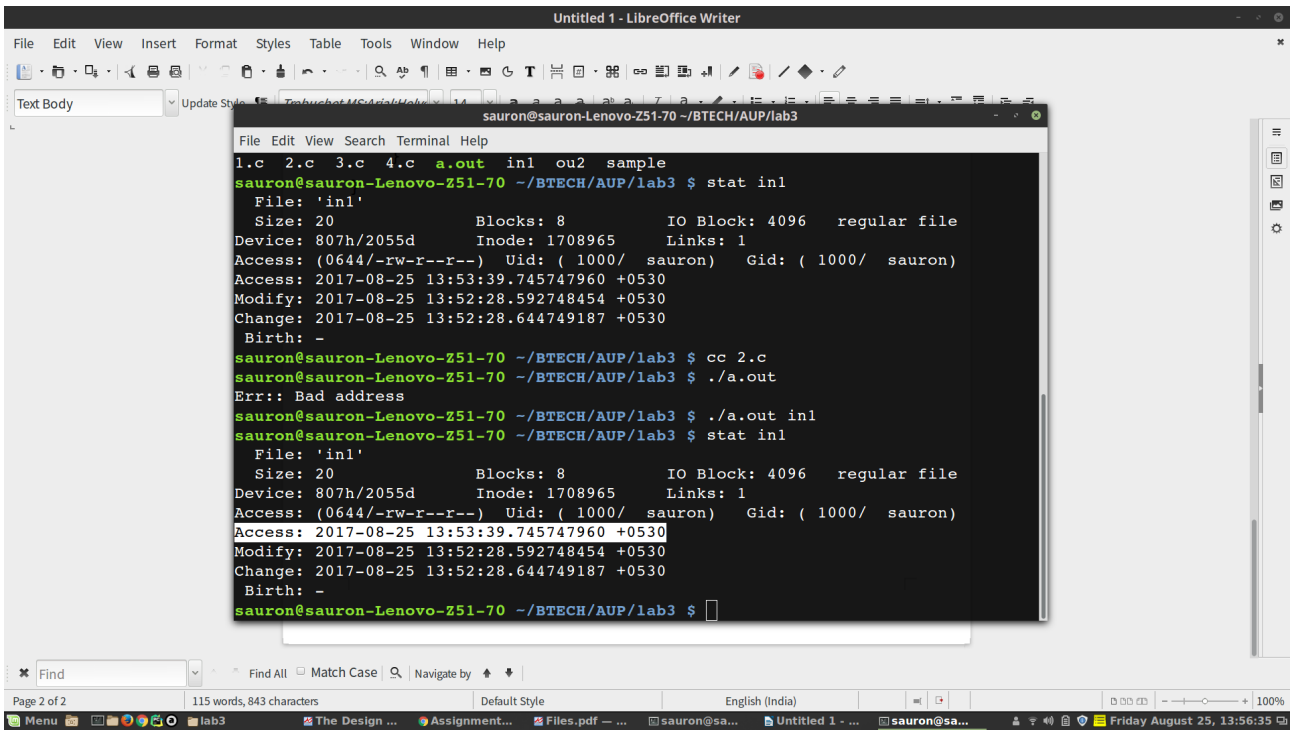
```
#include<stdio.h>
#include<unistd.h>
#include<fcntl.h>

int main(int argc, char *argv[]){
        int fd1, fd2, a,b;
        char str[100];
        fd1 = open("./in1", O_RDONLY);
        fd2 = open("./ou2", O_WRONLY);
        dup2(fd2, 1);
        dup2(fd1, 0);
        scanf("%d%d", &a, &b);
        printf("%d", a+b);
        close(fd1);
        close(fd2);
}
```

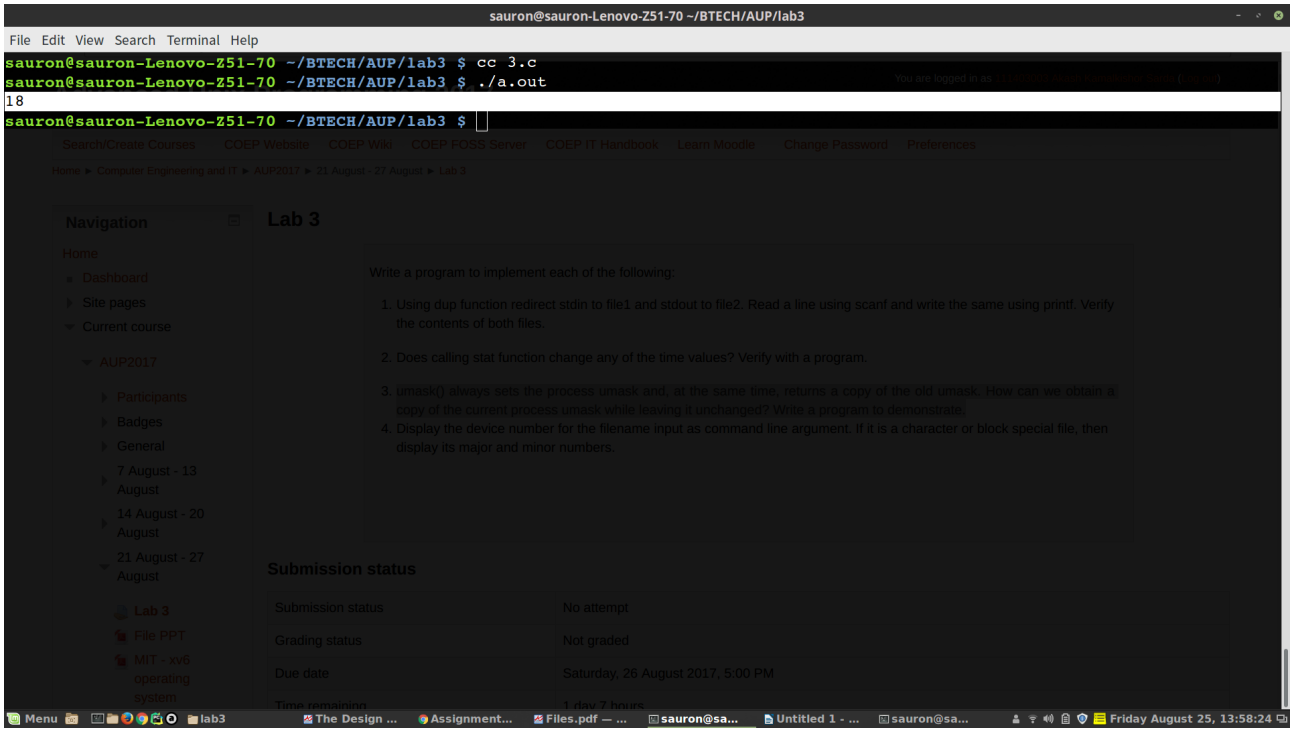


Ques. 2:
Does calling stat function change any of the time values? Verify with a program.

```
#include<stdio.h>
#include<stdlib.h>
#include<unistd.h>
#include<fcntl.h>
#include<sys/stat.h>
#include<sys/types.h>
int main(int argc, char *argv[]){
        struct stat statbuff;
        if(stat(argv[1], &statbuff) == -1){
                perror("Err:");
        }
}
```



Ques 3:
umask() always sets the process umask and, at the same time, returns a copy of the old umask. How can we obtain a copy of the current process umask while leaving it unchanged? Write a program to demonstrate.




```
#include<stdio.h>
#include<stdlib.h>
#include<unistd.h>
#include<fcntl.h>
#include<sys/stat.h>
#include<sys/types.h>

int main(int argc, char *argv[]){
        mode_t old;
        old = umask(0);
        printf("%d\n", old);
        umask(old);
}
```

Ques 4:

```
#include<stdio.h>
#include<stdlib.h>
#include<unistd.h>
#include<fcntl.h>
#include<sys/stat.h>
#include<sys/types.h>
#include<linux/limits.h>
#include<linux/kdev_t.h>
#include<string.h>
int main(int argc, char *argv[]){

        struct stat statbuff;
        char filename[PATH_MAX] = "./";
        strcat(filename, argv[1]);
        if (stat(filename, &statbuff) == -1){
                perror("ERR:");
                exit(1);
        }

        printf("device number : %d\n", statbuff.st_dev);
        if((statbuff.st_mode & S_IFMT) == S_IFCHR || (statbuff.st_mode &
S_IFMT == S_IFBLK)){
                printf("Major: %d, Minor %d\n", MAJOR(statbuff.st_rdev),
MINOR(statbuff.st_rdev));
        }
}
```