

CSE344

HW#5

Report

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Approach to the Problem:

First, I have created the design pattern. In the producer part, files to be used in the destination file are created, and then in the consumer part, data from the source file is read and subsequently written to the target file. The other files found under the source directory are also created in the same way in the destination directory.

Afterwards, the necessary consumer threads are created based on the inputs received from the user. These threads wait until the producer thread generates the path.

Meanwhile, the producer is creating the necessary files and storing information about those files in the buffer. This allows the consumer to access the information in the buffer and subsequently read the data from the source file and write it to the destination file.

After all these operations are completed, the program prints the elapsed time to the screen and then terminates.

Thanks to the created threads, the program is able to perform the copying process in parallel.

Additionally, it is required to handle the necessary signals in the program.

```
signal(SIGINT, signal_handler);
```

I have implemented the necessary signal handling as shown above

Output Example:

```
mustafa@mustafa:~/Desktop/system-hw04/hw01$ ./a.out 10 10 ~/Desktop/system-hw04/test1 ~/Desktop/system-hw04/dest
/home/mustafa/Desktop/system-hw04/test1/test4 copied to/home/mustafa/Desktop/system-hw04/dest/test4
/home/mustafa/Desktop/system-hw04/test1/test2/test7 copied to/home/mustafa/Desktop/system-hw04/dest/test2/test7
/home/mustafa/Desktop/system-hw04/test1/test2/test6 copied to/home/mustafa/Desktop/system-hw04/dest/test2/test6
/home/mustafa/Desktop/system-hw04/test1/test2/test5 copied to/home/mustafa/Desktop/system-hw04/dest/test2/test5
/home/mustafa/Desktop/system-hw04/test1/testasd.txt copied to/home/mustafa/Desktop/system-hw04/dest/testasd.txt
/home/mustafa/Desktop/system-hw04/test1/test3/deneme1.txt copied to/home/mustafa/Desktop/system-hw04/dest/test3/deneme1
.txt
/home/mustafa/Desktop/system-hw04/test1/test3/deneme2.txt copied to/home/mustafa/Desktop/system-hw04/dest/test3/deneme2
.txt
/home/mustafa/Desktop/system-hw04/test1/test3/deneme3.txt copied to/home/mustafa/Desktop/system-hw04/dest/test3/deneme3
.txt
/home/mustafa/Desktop/system-hw04/test1/test3/deneme.txt copied to/home/mustafa/Desktop/system-hw04/dest/test3/deneme.t
xt
```

Errors:

The program is unable to terminate 2 consumer threads for reasons unknown to me. As a result, the program hangs and requires termination by using Ctrl+C. Due to my inability to solve this issue, I couldn't fully complete all the required stages in the project.