

# CSE344 HOMEWORK 5

# REPORT

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# system architecture - producer

A black background with white rectangles

Description automatically generated with medium confidence

# system architecture – consumer

A black background with white rectangles

Description automatically generated with low confidence

# other system architecture features

## signal handling

When SIGINT or SIGTERM has arrived, it closes all open file descriptors and free the buffer. And exits.

## copy file

Read until end of the file and write every byte to the destination file.

## thread variables

### buffer mutex

For control buffer access.

### buffer not full condition

Buffer control condition for producer to access.

### buffer not empty contition

Buffer control condition for consumer to access.

# which requirements ı met

When I try to test with 2 subdirectory and additional files, because of the recursive function my program was just copying the first subdirectory and its files. When I use sleep function and make program to wait copying process, it is fixed. After a couple of tests, I noticed that when I use lock and unlock mutex in producer thread they occur the problem. I fix the problem when I fixed the places where these operations were made by making a small edit.

# testıng

## ./hw5 10 5 srcDir destDir

A screenshot of a computer program

Description automatically generated with medium confidence

***A screenshot of a computer

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Description automatically generated with medium confidence***

(src dir) (dest dir - before) (dest dir - after)

# testing - ./hw5 10 5 srcDir destDir

A screenshot of a computer

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Description automatically generated with medium confidenceA screenshot of a computer

Description automatically generated

# testing - ./hw5 10 5 srcDir destDir

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Description automatically generated

# testıng

## ./hw5 10 3 srcDir destDir

A screenshot of a computer program

Description automatically generated with medium confidence

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Description automatically generated with medium confidence***

(src dir) (dest dir - before) (dest dir - after)

# testing - ./hw5 10 3 srcDir destDir

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Description automatically generated with medium confidenceA screenshot of a computer

Description automatically generated with medium confidence

# testing - ./hw5 10 3 srcdir destdir

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Description automatically generated with medium confidenceA screenshot of a computer

Description automatically generated

# testing - ./hw5 10 3 srcdir destdir

A screenshot of a computer

Description automatically generated

# testing

### ./hw5 10 5 srcdir2 destdir2 (BIGFILE)

A screenshot of a computer

Description automatically generatedA screenshot of a computer program

Description automatically generated with medium confidence

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Description automatically generatedsrcdir destdir before destdir after

# testing - ./hw5 10 5 srcdir2 destdir2 (bıg file)

A screenshot of a computer program

Description automatically generated with medium confidence

# testing – consumer number is bıgger than buffer sıze

### ./hw5 10 30 srcdir destdir

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Description automatically generated with medium confidence

When there is 30 consumers but 10 buffer size, they waiting producer to fill buffer. But producer can just put 10 files to the buffer and consumers can process maximum 10 file each time. In this test, first time consumers take first 8 file and second part consumers take 8 more files. They can not process all 16 files at one time because there is not enough space in buffer for producer to put.