

Introduction to Computer Networks

Assignment 1: Concurrent File Copies

1. Goal

- Copy multiple files concurrently.
- Be able to receive new copy requests while copying files.
 - Non-blocking mode or asynchronous mode

2. Development environments

- TA will evaluate your results on Linux.
Therefore we recommend you use C or C++ on Linux.
You can also use Python (version 3.x) on Linux or Windows.
- You have to describe your development environments in detail in the report.

3. Functionalities to implement

- Assume that there are files (text files, image files, and video files) in the directory where the program is located.
- Get two input strings; one for the existing file name, and one for the new file name to be copied.
- Should allow a new copy request while copying files in parallel
 - You need to copy multiple files concurrently (up to 100 files)
- If a file copy is completed, write what file name is copied with time information in "log.txt".
 - The time is assumed to be zero seconds when the program starts.

* You don't need to implement 'exit the program'. ('ctrl + break' is OK)

4. Sample Results

```
Input the file name: GoodMovie.avi
Input the new name: GreateMovie.avi

Input the file name: BadMovie.avi
Input the new name: NotBadMovie.avi

Input the file name:
```

Figure 1. Console screen

```
3.00  Start copying GoodMovie.avi to GreateMovie.avi
10.00 Start copying BadMovie.avi to NotBadMovie.avi
32.00 NotBadMovie.avi is copied completely
47.00 GreateMovie.avi is copied completely
```

Figure 2. A sample of log.txt

5. Submission

- The deadline is 10.7 (Mon) 23:59.
 - For delayed submissions, a penalty of -15 points applies every 24 hours. After 72 hours, you get zero points.
 - In the case of plagiarism, you will receive 0 points for the first time and **F** for the second.
- Submit a zip file including a **report** and a **source code** for your program to iCampus
 - Name the zip file as flows StudentID_Name.zip (ex: 2018001_홍길동.zip)
 - The reports includes;
 - 1) Describe your development environments in detail:
(versions of operating systems, programming languages, compilers/interpreter versions, compile options...)
 - 2) Present how to design your assignment such as data structures and algorithms.
 - 3) Explain how to test your program by showing the screen capture.

6. Scoring criteria

- Total 100 points
 - 20 points: allow user input from keyboard while copying files
 - 20 points: copy multiple files concurrently
 - 20 points: a log of the copy completion should be appended in 'log.txt'
 - 20 points: the new (copied) files must be valid. (e.g. possible to play videos)
 - 20 points: The report file should describe your development environment and how to run your programs (for evaluating by TA).

7. Q&A

- Leave your questions on the google sheet