

CSE 3461 Lab 1

Instructor: Adam C. Champion

Due: Tuesday, January 24, 2017, 11:59 p.m. (40 points)

Write a program called `copy.py` in Python that reads a file and creates a copy of it in a sub-directory named `recv` (*on the same system*). The program will be executed using the command

```
python3 copy.py <filename>
```

where `filename` is a file in a local directory that needs to be copied. The program opens the file specified in the command line in **binary mode** and creates a new file with the same name in the `recv` directory. In a loop, the program keeps reading the next block of bytes (e.g., 1,000 bytes) from the file and writing it to the new file until all bytes have been read from the file. Finally, the program closes the two files. Submit well-documented code using the following command:

```
submit c3461aX lab1 <code-directory-name>
```

where `X` is a “dummy variable.” If you’re in Section 1 (12:45 p.m.–2:05 p.m.), your submit directory is `c3461ab`; if you’re in Section 2 (2:20 p.m.–3:40 p.m.), your submit directory is `c3461aa`.

No buffer, array, or data structure used should exceed 1,000 bytes in size. You cannot read and keep the entire file in memory as your program should be able to work with files of arbitrary size. Your program should work for binary files (e.g., images). **Submit a `README.txt` file with your program.** You can use the sample images on the course webpage to test your program. Use `diff` or `md5sum` to ensure that the transferred file is bitwise identical to the original one.

Advice: The following may help you with the labs in this course.

- Labs 2–4 build on previous labs, respectively, so make sure your lab implementations are correct.
- Even if you have experience with Python 2, you are **strongly** encouraged to use Python 3 for the labs. Python 3 makes byte encoding and decoding much easier than Python 2, which requires tedious use of the `struct` package. (If you use Python 2, please note this in your `README.txt` file for the grader.)
- **Don’t procrastinate** – labs can take **much** longer than you might expect initially.