

## CS 3423.01

### Assignment 5 : Simple File I/O

Due 12:00 Midnight Wednesday, March 9, 2016

Write a program, `ckit`, in C using only low-level I/O (`stdio` can be used with error output and `perror`) which will accept two or three command-line arguments, which should be file names, and will concatenate the first file followed by the second file, writing the result to the third file.

1. The program must have **complete** error trapping. In particular the program should use `perror()` to report system errors. The error message should include the argument for which the error occurred, thus the `perror()` call, if argument 2 causes the error, should be:

```
perror(argv[2]);
```

2. All files should be closed explicitly, i.e. the operating system should not be used to close the files. In particular when an error occurs some files might be open, they must be closed before exit.

3. If there are two command-line arguments, then the output should be written on standard-out while if there are three command-line arguments the output should be written to the third file.

4. If one of the first two files is a “-” then that file should be read from standard-in.

5. Two command-line arguments of “-” is an error. Notice that this is not a system error and hence `perror()` should not be used!

6. **Extra Credit:** Have the output be alternating **lines** from the two files until the shorter file is exhausted at which point only the longer file is printed. All lines in both files must be printed. Remember that only low-level I/O is permitted except for error messages. Any extra credit attempt should be in the file `ckit.c` and must use a buffer size of 1024 with reads/writes of the appropriate **maximal size** and be prepared to handle lines much longer than the buffer.

Don't turn in `xckit.c` UNLESS it is working correctly. `ckit.c` must always be turned in and working!

#### 7. Example Invocations:

```
ckit file1.in file2.in file3.out
ckit file1.in file2.in
ckit file1.in - file3.out
ckit - file2.in file3.out
ckit file1.in -
ckit - file2.in
```

8. The assign5 directory should be turned in to project5 using the command:

```
submit assign5 project5 3423
```

After the "cutoff" date of this project, the project may be submitted to project5-late for one additional week. There will be a 10% penalty associated with a late submission. The state of all projects can be seen with the command

```
projects cs3423
```