

Bit Operations

1. Copy the files `bits.h`, `bits.c`, `testbits.c`, and `Makefile` from `/home/mathcs/courses/cs246`.
2. Edit `bits.c` to complete the functions.
3. Turn in `bits.c` with assignment name `bits`.
4. Write a program called `encrypt` that encrypts files read from `stdin` as follows:

There is one command line argument, an encryption key. Your program will encrypt each character read from `stdin` by xoring it with one character from the key. The first character will be encrypted with the first character from the key, the second with the second character from the key, and so on. When you have used all the characters from the key, start over with the first. For example, if the key is `foo`, then the first character read will be xored with `f`, the second and third with `o`, the fourth with `f`, the next two with `o`, and so on.

The output will go to `stdout`.

Make sure you check for the presence of a command line argument.

You can test the program by redirecting input to come from a file. You will probably also want to redirect the output to a file. It will mostly be unrecognizable garbage.

If you encrypt an already encrypted file using the same key, you will get the original file back because of the way `xor` works.

You can display the output by piping it through the command `od -t o1`. We will discuss this in class along with how to debug the program.