20875 Software Engineering

Tutorial 3

1. Write a program that enumerates all n-bit binary numbers $j = 0, 1, 2, \ldots$. For each j, print this number in binary, and print how many 1 bits it contains.

2. Write a program that reads a file, parses it, and writes its contents in a slightly different form:

   - The first three lines of the input file consist in a series of words separated by arbitrary amounts of spaces. For each of the first three lines, print its words on a single line, but reversed and separated by commas.

   - After the first three lines, the input file consists in a series of integers separated by arbitrary amounts of spaces (and newlines). Parse those integers and print them in hexadecimal, each on a single line, with the prefix "0x". If one of the integers has value zero, stop parsing the file after printing it ("0x0").

   - Ignore the rest of the file

   For example, given this input file:

   ```
   first    line
   this is the second line
   and the      third
   9 16 10
   1
   0 ignore this
   and this
   and that
   ```

   we must produce the following output:

   ```
   line,first
   line,second,the,is,this
   third,the,and
   0x9
   0x10
   0xa
   0x1
   0x0
   ```