**CSCI 301  
Computer Science 2**

**Project EXAMPLE: User Document**

**Formatting** text is arranging it on the screen or page. The program format is a text formatter. It reads a file of text and prints a new file containing the same text, but formatted into lines no longer than a maximum length. The user enters the names of the input and output files and the maximum line length, which must fall between 30 and 80. The program inserts line breaks in the white space between words, which are defined to be blocks of contiguous non-blank characters.

The program's name is format.cxx; to compile and link it, simply enter:

g++ -o format format.cxx

To run the program, enter format, then respond to the program's prompts to specify the input and output files and the maximum line length. The program will continue to prompt for input should it be unable to open a file or should the entered maximum line length not fall between 30 and 80. The program assumes that no word is longer than the entered line length.

For example, if an input file called inp.dat contains this text:

Genetic algorithms (GAs) are population-based search procedures

inspired by the mechanisms that drive biological evolution:

natural selection and genetic recombination and mutation.

GAs are thus characterized by selection

algorithms that favor the more fit

chromosomes in their populations and by crossover and

mutation operators that combine and modify existing chromosomes

to generate novel offspring.

the following exchange will run the program on this file:

prompt> format

Enter input file name: inp.dat

Enter output file name: out.dat

Enter an integer value between 30 and 80: 48

When the program terminates, the output file out.dat will contain the following:

Genetic algorithms (GAs) are population-based

search procedures inspired by the mechanisms

that drive biological evolution: natural

selection and genetic recombination and

mutation. GAs are thus characterized by

selection algorithms that favor the more fit

chromosomes in their populations and by

crossover and mutation operators that combine

and modify existing chromosomes to generate

novel offspring.

Note that no line in the output file contains more than 48 characters, corresponding to the value entered in response to the program's prompt.