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.