

## Chapter 6 Programming Projects (Choose 2)

### #1)

Students are often asked to write term papers containing a certain number of words. Counting words in a long paper is a tedious task, but the computer can help. Write a program that counts the number of words, lines, and total characters (not including whitespace) in a paper, assuming that consecutive words are separated either by spaces or end-of-line characters.

### #2)

Write a program that reads a file containing data about the changing popularity of various baby names over time and displays the data about a particular name. Each line of the file stores a name followed by integers representing the name's popularity in each decade: 1900, 1910, 1920, and so on. The rankings range from 1 (most popular) to 1000 (least popular), or 0 for a name that was less popular than the 1000th name. The following lines are a sample of the file format:

```
Sally 0 0 0 0 0 0 0 0 0 0 886
Sam 58 69 99 131 168 236 278 380 467 408 466
Samantha 0 0 0 0 0 0 272 107 26 5 7
Samir 0 0 0 0 0 0 0 0 920 0 798
```

Your program should prompt the user for a name and search the file for that name:

```
This program allows you to search through the
data from the Social Security Administration
to see how popular a particular name has been
since 1900.
```

```
Name? Sam
```

If the name is found, the program should display data about the name on the screen:

```
Statistics on name "Sam"
  1900: 58
  1910: 69
  1920: 99
  1930: 131
  ...
```

#3)

Write a program that plays a game where a player is asked to fill in various words of a mostly complete story without being able to see the rest. Then the user is shown his/her story, which is often funny. The input for your program is a set of story files, each of which contains "placeholder" tokens surrounded by < and >, such as:

```
One of the most <adjective> characters in fiction is named
"Tarzan of the <plural-noun> ." Tarzan was raised by a/an
<noun> and lives in the <adjective> jungle in the
heart of darkest <place> .
```

The user is prompted to fill in each of the placeholders in the story, and then a resulting output file is created with the placeholders filled in. For example:

```
Input file name? story1.txt
Please enter an adjective: silly
Please enter a plural noun: socks
Please enter a noun: tree
Please enter an adjective: tiny
Please enter a place: Canada
```

The resulting output story would be:

```
One of the most silly characters in fiction is named
"Tarzan of the socks ." Tarzan was raised by a/an
tree and lives in the tiny jungle in the
heart of darkest Canada .
```