# Chapter 7

**Programming with Recursion**

7.1 What Is Recursion?

7.2 The Classic Example of Recursion

7.3 Programming Recursively

Coding the Factorial Function

7.4 Verifying Recursive Functions

Three-Question Method

7.5 Writing Recursive Functions

Writing a Boolean Function

7.6 Using Recursion to Simplify Solutions

7.7 Recursive Linked List Processing

7.8 A Recursive Version of Binary Search

7.9 Recursive Versions of PutItem and DeleteItem

Function PutItem

Function DeleteItem

7.10 How Recursion Works

Static Storage Allocation

Dynamic Storage Allocation

7.11 Tracing the Execution of Recursive Function Insert

7.12 Recursive Quick Sort

7.13 Debugging Recursive Routines

7.14 Removing Recursion

Iteration

Stacking

7.15 Deciding Whether to Use a Recursive Solution

Summary

Exercises