Outline

2.1 Introduction

The C language facilitates a structured and disciplined approach to computer-program design. In this chapter we introduce C programming and present several examples that illustrate many important features of C. Each example is analyzed one statement at a time. In Chapters 3 and 4 we present an introduction to structured programming in C. We then use the structured approach throughout the remainder of the C portion of the text. We provide the first of many "Secure C Programming" sections.

2.2 A Simple C Program: Printing a Line of Text

C uses some notations that may appear strange to people who have not programmed computers. We begin by considering a simple C program. Our first example prints a line of text. The program and its screen output are shown in Fig. 2.1.

```
1  // Fig. 2.1: fig02_01.c
2  // A first program in C.
3  #include <stdio.h>
4
5  // function main begins program execution
6  int main( void )
7  {
8     printf( "Welcome to C!\n" );
9  } // end function main
```

```
Welcome to C!
```

Fig. 2.1 | A first program in C.

Comments

Even though this program is simple, it illustrates several important features of the C language. Lines 1 and 2

```
// Fig. 2.1: fig02_01.c
// A first program in C
```

begin with `//`, indicating that these two lines are **comments**. You insert comments to **document programs** and improve program readability. Comments do *not* cause the computer to perform any action when the program is run—they're *ignored* by the C compiler and