SUMMARY

- Computers make decisions by comparing data.
- In C++, true is represented by 1 and false is represented by 0.
- Relational operators are used to create expressions that result in a value of 1 or 0.
- Logical operators can combine relational expressions.
- Selection structures are how C++ programs make decisions.
- The if structure is a one-way selection structure. When a control expression in an if statement is evaluated to be true, the statements associated with the structure are executed.
- The if/else structure is a two-way selection structure. If the control expression in the if statement evaluates to true, one block of statements is executed; otherwise another block is executed.
- The switch structure is a multi-way selection structure that executes one of many sets of statements depending on the value of the control expression. The control expression must evaluate to an integer or character value.

PROJECTS

PROJECT 7-1 • LENGTH CONVERSION

1. Open *LENGTHS.CPP* and analyze the source code.
2. Run it several times and try different conversions and values.
3. Add a conversion for miles to the program. Use 0.00018939 for the conversion factor.
4. Test the program.

PROJECT 7-2 • FINANCE

Obtain the exchange rates for at least three foreign currencies. Write a program similar in form to *LENGTHS.CPP* that asks for an amount of money in American dollars and then prompts the user to select the currency into which the dollars are to be converted.

PROJECT 7-3 • COMPUTERIZED TESTING

Write a program that asks the user a multiple-choice question on a topic of your choice. Test the user's answer to see if the correct response was entered. When the program works for one question, add two or three more.

PROJECT 7-4 • ASTRONOMY

Write a program that determines your weight on another planet. The program should ask for the user's weight on Earth, then present a menu of the other planets in our solar system. The user should choose one of the planets from the menu, and use a switch statement to calculate the weight on the chosen planet. Use the following conversion factors for the other planets.

Planet	Multiply by	Planet	Multiply by
Mercury	0.37	Saturn	1.15
Venus	0.88	Uranus	1.15
Mars	0.38	Neptune	1.12
Jupiter	2.64	Pluto	0.04

PROJECT 7-5 • CONSTRUCTION

Write a program that calculates the number of fence posts and amount of barbed wire necessary to build a barbed-wire fence. Ask the user how long the fence is to be, the distance between the posts, and how many strands of wire are to be placed on the fence.