# Solution Manual for Starting Out with C++ from Control Structures to Objects 8th Edition Gaddis 0133769399 9780133769395

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**LESSON SET 2** 

# Introduction to the C++ Programming Language

# **OBJECTIVES FOR STUDENT**

### Lesson 2A:

- 1. To learn the basic components of a C++ program
- 2. To gain a basic knowledge of how memory is used in programming
- 3. To understand the basic data types:
  - a. Integer
    - b. Character
    - c. Float
    - d. Boolean
    - e. String (the string class is treated as a data type here)
- 4. To introduce the five fundamental instructions and to use the assign and output statements

### Lesson 2B:

- 5. To develop a small program using simple C++ instructions
- 6. To work with characters and strings

# **ASSUMPTIONS**

### Lesson 2A:

1. Students have a basic knowledge of the programming environment. They can open, edit, compile and run simple programs.

Lesson 2B:

- 1. Students are familiar with the output and assignment statements in C++
- 2. Students are familiar with the general basic outline of a C++ program so that they can generate a simple program
- 3. Students are familiar with the basic data types including character and string (class treated as a data type)

# PRE-LAB WRITING ASSIGNMENT SOLUTIONS

1. constant

2. Integer

3. Real or Floating point

4. Modulus or mod

5. output 6. Boolean

7.8

/. 0

8. comment 9. variable

10. string

# LAB ASSIGNMENTS

### Lesson 2A:

Lab 2.1: Working with the cout statement. Lab 2.2: Working with constants, variables and arithmetic operators

### Lesson 2B:

Lab 2.3: Rectangle area and perimeter Lab 2.4 Working with characters and Strings

# **LESSON 2A**

### LAB 2.1: Working with the cout Statement

This is a simple lab that works with the cout statement.

A solution is found in nameKey.cpp in the instructor's folder for Lesson Set 2.

### LAB 2.2: Working with Constants, Variables and Arithmetic Operators

This is a simple lab that continues to work with the cout statement and introduces the assignment statement.

A solution is found in circleareaKey.cpp in the instructor's folder for Lesson Set 2.

## **LESSON 2B**

### LAB 2.3: Rectangle Area and Perimeter

Although Lab 2.3 asks students to create a program from scratch, it is not labeled as optional since it is so similar to Lab 2.2 that most students should not find it too difficult.

A solution is found in rectangleKey.cpp in the instructor's folder for Lesson Set 2.

### LAB 2.3: Working with characters and Strings

This lab introduces characters and the string class which is treated as a data type. The distinction of the string class from true data types is not explained until the student is introduced to arrays of characters later in the manual.

A solution is found in stringcharkey.cpp in the instructor's folder for Lesson Set 2.

Possible solutions to all labs are given in the instructor's folder for Lesson Set 2.