Lab 7 More Branching

Introduction to Computer Science I

# Objectives:

After performing this lab, the students should be able to

* write C++ programs that involve switch statements
* write C++ programs that involve conditionals with logical expressions

# Names of Lab Group Members:

## Activity

Directions: For each programming exercise, provide your C++ source code and screenshot of your program output.

### Part I – Switch

**Display Spellings for 0 - 99**

Further modify the program in Figure 3.5.1 to display the spelling for a user-entered number between 0 and 99. Hint: To avoid having 100 cases, your program might first determine if the number is greater than twenty, using a switch a statement to display the spelling for the tens digit. This could then be followed with a switch statement to display the ones digits. Keep in mind that the values between 10 and 19 need special treatment.

**Figure 3.5.1: Switch example: Number spelling.**

|  |  |
| --- | --- |
| #include <iostream>  **using** **namespace** std;  **int** main() {  **int** userNum;    cout << "Enter a number between 0 and 5: ";  cin >> userNum;    **switch** (userNum) {  **case** 0:  cout << userNum << " is spelled zero.\n";  **break**;  **case** 1:  cout << userNum << " is spelled one.\n";  **break**;  **case** 2:  cout << userNum << " is spelled two.\n";  **break**;  **case** 3:  cout << userNum << " is spelled three.\n";  **break**;  **case** 4:  cout << userNum << " is spelled four.\n";  **break**;  **case** 5:  cout << userNum << " is spelled five.\n";  **break**;  **default**:  cout << "Uh-oh! Invalid number. Please try again.\n";  **break**;  }    **return** 0;  } | Enter a number between 0 and 5: 4  4 is spelled four.  ...  Enter a number between 0 and 5: 0  0 is spelled zero.  ...  Enter a number between 0 and 5: 7  Uh-oh! Invalid number. Please try again. |

### Part II – Conditionals with Logical Expressions

A leap year is any year divisible by 4, unless the year is divisible by 100 but not 400.

For example, 1996 is a leap year (1996 is divisible by 4 but not by 100), 2000 is a leap year (2000 is divisible by 400), but 1900 is not a leap year (1900 is divisible by 100 but not by 400).

Write a program that reads a year from the user and tells whether the year is a leap year.

For this problem you must make use of logical operators such as && and ||.