

Example Programs using Strings, Characters, and Math Functions

Hui Chen

Department of Computer & Information Science

Brooklyn College

Objectives

- To program using characters and strings (**GuessBirthday**) (§4.5.1).
- To convert a hexadecimal character to a decimal value (**HexDigit2Dec**) (§4.5.2).
- To revise the lottery program using strings (**LotteryUsingStrings**) (§4.5.3).

Outline

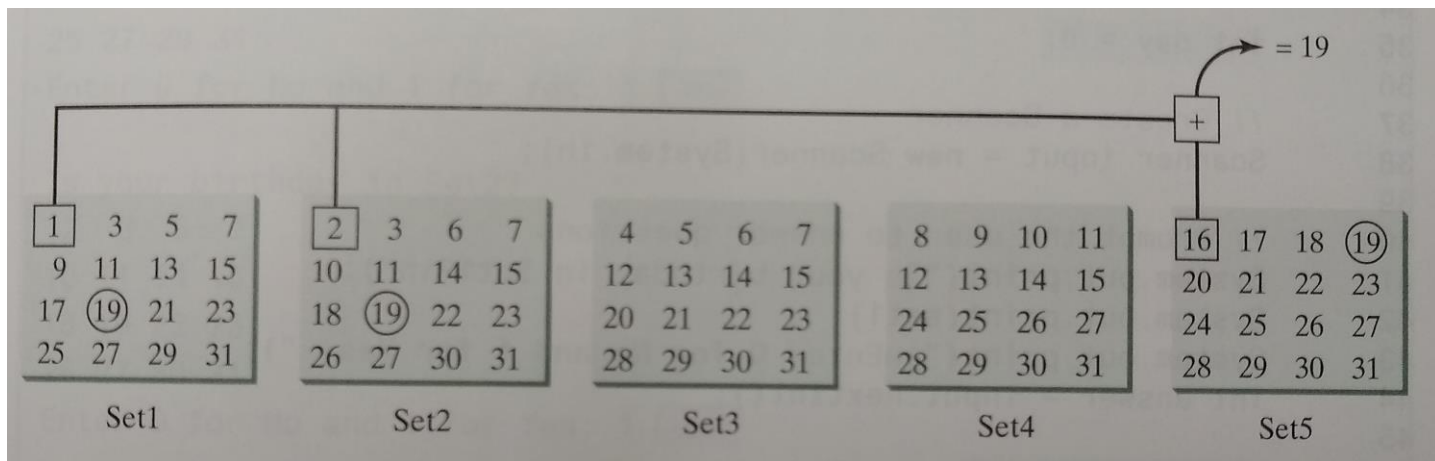
- Discussed
 - The Math class and its methods and constants
 - The char data type and The Character class
 - The String data type and operations
- Example programs
 - The guessing birth days game
 - The lottery game
 - Converting a hexadecimal digits to a decimal

Problem 1. Guess Birthday

- Give 5 sets of numbers below, you can find out the date of the month when your friend is born by asking five questions. Each question asks whether the day is in one of the five sets of numbers.
- The birthday is the sum of the first numbers in the sets where the day appears.

Problem 2. Converting Hexadecimal Digits to Decimal

- The hexadecimal number system has 16 digits, 0-9, A-F, representing 0 – 15 in the decimal number system. Write a program that prompts the user to enter a hexadecimal digit and display its decimal value.



Problem 3. Lottery Game Using Strings

4.5.3 Case Study: Revising the Lottery Program Using Strings

The lottery program in Listing 3.8, `Lottery.java`, generates a random two-digit number, prompts the user to enter a two-digit number, and determines whether the user wins according to the following rule:

1. If the user input matches the lottery number in the exact order, the award is \$10,000.
2. If all the digits in the user input match all the digits in the lottery number, the award is \$3,000.
3. If one digit in the user input matches a digit in the lottery number, the award is \$1,000.

The program in Listing 3.8 uses an integer to store the number. Listing 4.5 gives a new program that generates a random two-digit string instead of a number, and receives the user input as a string instead of a number.