

# 7 Arrays and ArrayLists

## Objectives

In this chapter you'll:

- Learn what arrays are.
- Use arrays to store data in and retrieve data from lists and tables of values.
- Declare arrays, initialize arrays and refer to individual elements of arrays.
- Iterate through arrays with the enhanced `for` statement.
- Pass arrays to methods.
- Declare and manipulate multidimensional arrays.
- Use variable-length argument lists.
- Read command-line arguments into a program.
- Build an object-oriented instructor gradebook class.
- Perform common array manipulations with the methods of class `Arrays`.
- Use class `ArrayList` to manipulate a dynamically resizable array-like data structure.

## Outline

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2. 7.2 Arrays

3. 7.3 Declaring and Creating Arrays
4. 7.4 Examples Using Arrays
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  2. 7.4.2 Using an Array Initializer
  3. 7.4.3 Calculating the Values to Store in an Array
  4. 7.4.4 Summing the Elements of an Array
  5. 7.4.5 Using Bar Charts to Display Array Data Graphically
  6. 7.4.6 Using the Elements of an Array as Counters
  7. 7.4.7 Using Arrays to Analyze Survey Results
5. 7.5 Exception Handling: Processing the Incorrect Response
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  3. 7.5.3 `toString` Method of the Exception Parameter
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7. 7.7 Enhanced `for` Statement
8. 7.8 Passing Arrays to Methods
9. 7.9 Pass-By-Value vs. Pass-By-Reference
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11. 7.11 Multidimensional Arrays
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  2. 7.11.2 Two-Dimensional Arrays with Rows of Different Lengths
  3. 7.11.3 Creating Two-Dimensional Arrays with Array-Creation Expressions
  4. 7.11.4 Two-Dimensional Array Example: Displaying Element Values

5. 7.11.5 Common Multidimensional-Array Manipulations Performed with for Statements
12. 7.12 Case Study: Class GradeBook Using a Two-Dimensional Array
13. 7.13 Variable-Length Argument Lists
14. 7.14 Using Command-Line Arguments
15. 7.15 Class Arrays
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17. 7.17 (Optional) GUI and Graphics Case Study: Drawing Arcs
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  4. Exercises
  5. Special Section: Building Your Own Computer
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