Ruby

1. Introduction to Computer Science

1.1 Introduction

1.2 Application Development

Step 1: Understand the Problem

Step 2: Write Out the Solution in Plain Language

Step 3: Translate the Language into Code

Step 4: Test the Code in the Computer

1.3 Algorithms

1.3.1 Algorithm Efficiency

1.4 Summary

1.4.1 Key Concepts

1.4.2 Key Definitions

1.5 Exercises

2. How Does the Computer Really Work?

2.1 Introduction

2.2 Basic Nomenclature and Components of a Computer System

2.3 Scales of Magnitude

2.4 Instruction Execution–Speed and Timing Scales

2.5 Bit Strings and Their Meaning

2.6 The Interpreter Process and Ruby

2.7 Summary

2.7.1 Key Concepts

2.7.2 Key Definitions

2.8 Exercises

3. Core Programming Elements

6. Arrays

7. Sorting and Searching.

8. Using Objects

9. Defining Classes and Creating Objects

10. Object Inheritance

10.1 Introduction

10.2 Inheritance

10.3 Basic Method Overriding

10.4 Accessing the Superclass

10.5 Applications

10.5.1 Person Database

10.5.2 Grocery Store

10.5.3 Video Games

10.6 Summary

10.6.1 Key Concepts

10.6.2 Key Definitions

10.7 Exercises

11. File Input/Output.

11.1 Introduction

11.2 File Access: Reading and Writing

11.2.1 File Reader Class

11.2.2 FileWriter Class

11.2.3 File Reader/Writer Example

11.3 Summary

11.3.1 Key Concepts

11.3.2 Key Definitions

11.4 Exercises

12. Putting It All Together: Tic-Tac-Toe

12.1 Introduction

12.2 Programming Approach

12.3 Tic-Tac-Toe

12.4 Tic-Tac-Toe Revised

12.5 Summary

12.6 Exercises