Chapter 0 Introduction to Computers, Programs, and Java

- What Is a Computer?
- Programming Languages
- Who am I?
- History of Java
- What is new in Java
- What is Procedural Programing
    - Variabler
    - Operators
    - İf else switch (int. to decision making)
    - Loops (for, while)
    - Methods
    - Arrays
- What is Object Oriented Programing
    - Encapsulation
    - Polymorphism
    - Inheritance

Chapter 1 Hello Java

- A Simple Java Program
- Creating, Compiling, and Executing a Java Program
- Programming Errors
- Developing Java Programs Using Eclipse

Chapter 2 Elementary ProgrammingIntroduction

- Reading Input from the Console
- Identifiers
- Named Constants
- Naming Conventions
- Numeric Data Types and Operations
- Evaluating Expressions and Operator Precedence
- Case Study: Displaying the Current Time
- Augmented Assignment Operators
- Increment and Decrement Operators
- Numeric Type Conversions
- Common Errors and Pitfalls

Chapter 3 int. to decision making (İf else switch)

- boolean Data Type
- if Statements
- Two-Way if-else Statements
- Nested if and Multi-Way if-else Statements
- Common Errors and Pitfalls
- Case Study: Computing Body Mass Index
- Logical Operators
- Case Study: Determining Leap Year
- switch Statements
- Conditional Expressions

Operator Precedence and Associativity

Chapter 4 Mathematical Functions, Characters, and Strings

- Common Mathematical Functions
- Character Data Type and Operations
- The String Type

Chapter 5 Loops

- The while Loop
- The for Loop
- Which Loop to Use?
- Nested Loops
- Keywords break and continue
- Case Study: Checking Palindromes
- Case Study: Displaying Prime Numbers

Chapter 6 Methods

- Defining a Method
- Calling a Method
- void Method Example
- Passing Arguments by Values
- Overloading Methods
- The Scope of Variables

Chapter 7 Single-Dimensional Arrays

- Array Basics
- Case Study: Analyzing Numbers
- Case Study: Deck of Cards
- Copying Arrays
- Passing Arrays to Methods
- Returning an Array from a Method

Chapter 9 Objects and Classes

- Defining Classes for Objects
- Example: Defining Classes and Creating Objects
- Constructing Objects Using Constructors
- Accessing Objects via Reference Variables
- Using Classes from the Java Library
- Static Variables, Constants, and Methods
- Visibility Modifiers
- Data Field Encapsulation
- Passing Objects to Methods
- Array of Objects
- The Scope of Variables

The this Reference

Chapter 10 Object-Oriented Thinking

- Class Abstraction and Encapsulation
- Thinking in Objects
- Case Study: Designing the Course Class
- Processing Primitive Data Type Values as Objects
- Automatic Conversion between Primitive Types and Wrapper Class Types
- The String Class

Chapter 11 Inheritance and Polymorphism

- Superclasses and Subclasses
- Using the super Keyword
- Overriding Methods
- Overriding vs. Overloading
- The Object Class and Its toString() Method
- Polymorphism
- Dynamic Binding
- Casting Objects and the instanceof Operator
- The Object ’s equals Method
- The protected Data and Methods
- Preventing Extending and Overriding

Chapter 12 Exception Handling and Text I/O

- Exception-Handling Overview
- Exception Types
- More on Exception Handling
- The finally Clause
- When to Use Exceptions
- Rethrowing Exceptions
- Chained Exceptions
- Defining Custom Exception Classes
- The File Class
- File Input and Output
- Reading Data from the Web
- Case Study: Web Crawler

Chapter 13 Abstract Classes and Interfaces

- Abstract Classes
- Case Study: the Abstract Number Class
- Case Study: Calendar and GregorianCalendar
- Interfaces
- The Comparable Interface
- The Cloneable Interface
- Interfaces vs. Abstract Classes
- Case Study: The Rational Class
- Class Design Guidelines