



# Preface to the Fourth Edition

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Since the release of Java in 1995, Sun Microsystems has been constantly upgrading its products to enable users develop and deploy Java solutions with ease and confidence. Java Platform, Standard Edition (Java SE) software is the leading platform for developing and deploying portable applications that run on server and desktop systems spanning most operating systems. The current major release of the Java SE platform is Java SE 6 that enhances the power and scope of the language by incorporating key features and updates while preserving compatibility and stability. The new edition offers— (i) advantages to running applications on Java SE 6, (ii) benefits in upgrading developer environments to Sun’s Java SE 6, (iii) improved user experience, (iv) security features and enhancements, (v) integrated web services, (vi) scripting language support (JSR 223), (vii) enhanced management and serviceability and (viii) increased developer productivity.

## Users

This text offers lucid explanation of the fundamentals of Java Programming. It is well suited for a first level programming course in Java for the students of BCA, BSc and MSc in Computer Science and Information Technology, BE and BTech in Computers and Information Technology, and Diploma in Computer Science. It would also be a good reference for the students of MCA and DOEACC courses.

## New to the Edition

The fourth edition incorporates not only the major updates of JSE6 but also improves the content wherever necessary.

The restructuring of the updated edition successfully provides comprehensive coverage of fundamental concepts in Java programming, with an object orientation, simple explanation, abundant examples and programming exercises. Specifically, the new additions are—

- *Inclusion of new topics such as AWT Classes and Swings*
- *Expanded coverage of Multithreading and Event Handling*
- *More solved examples for Graphics class*
- *Two new projects—Notepad and Sketchpad*
- *Enrichment of pedagogical features*

- ❑ *Solved Examples: 98*
- ❑ *Review Questions: 201*
- ❑ *Debugging Exercises: 69*
- ❑ *Illustrations: 115*

## Chapter Organisation

The book is organised into 17 chapters and 15 appendices. **Chapter 1** provides a strong foundation in Object-Oriented Programming concepts. **Chapters 2 and 3** trace the evolution of Java and give an overview of the language. **Chapter 4** explains Constants, Variables and Data types, while **Chapter 5** deals with Operators and Expressions.

Decision Making and Branching are elucidated in **Chapter 6**, while Decision Making and Looping are covered in **Chapter 7**. **Chapter 8** gives a detailed exposition of Classes, Objects and Methods, followed by **Chapter 9** on Arrays, Strings and Vectors. **Chapter 10** on Multiple Inheritance explains how to define, extend, implement and access interfaces. **Chapter 11** helps you can understand how to put Classes together in Packages.

**Chapter 12** covers Multithreaded Programming in the requisite detail. **Chapter 13** talks about Managing Errors and Exceptions in **Chapter 13**. **Chapter 14 and 15** cover Applet and Graphics Programming. **Chapter 16** specifies how to Manage Input/output Files in Java. The **last Chapter 17** gives an overview of Java Collections—Interfaces, Classes and Algorithms.

Necessary and useful information on Java Language Reference, Keywords, Bit-level Programming, Java API Packages, Java Classes and their Package, Assertion and Design by Contract, Java Version History, Deprecated Classes and Methods, Statistics of Java Packages and SCJP Examination Model Questions are provided in the appendices. Points to Remember, Common Coding Errors, Glossary of Java Terms, and 2 new Projects (on Notepad and Sketchpad) prove to be valuable study and practice tools for students.

## Online Learning Centre

The existing website of the book has been updated and now includes—

### Resources for Instructors:

- \*Solutions to debugging exercises

### Resources for Students:

- \* Chapter-wise self test quiz
- \* Projects for implementation (4)
- \* Java Version History
- \* Statistics of Java packages

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