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The Java Tutorial

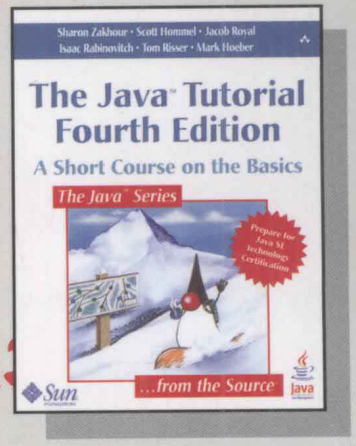
A Short Course on the Basics

4th Edition

[美] Sharon Zakhour Scott Hommel Jacob Royal
Isaac Rabinovitch Tom Risser Mark Hoeber 著

Java语言导学

(第4版)(英文版)



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Java 语言导学

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内容提要

本书是 Sun 公司指定 Java 教程的最新版。书中除了讲解面向对象的编程概念、语言基础、类和对象、接口和继承、包、数字和字符串、异常、基本 I/O、集合、并发、Swing、把程序打包到 JAR 文件中、applet 之外，还介绍了 Java Web Start、平台环境和正则表达式，同时涵盖了 Java 5.0 和 6.0 引入的新特性，比如泛型和并发、注解。附录 B 中还给出如何准备 Java 编程语言认证考试方面的内容。此外，本书配套的网上资源还包含本书的示例以及问题和练习的答案、在线 Java SE 指南、Java SE 开发工具包（Java SE Development Kit，JDK）、相应的 API 规范和指导文档等。

本书既适合作为高校相关专业 Java 程序设计语言课程的教材，也适合各种层次的 Java 程序员阅读。

Foreword

IT is with some pleasure that I write this foreword to the new edition of the *Java Tutorial.*

One of the distinguishing characteristics of the Java platform has been the quality of its documentation. This has included the tutorials, as well as the detailed documentation of the APIs by means of JavaDoc, and the many books published in the Java series. One could argue that the quality of the documentation resources has been every bit as important to the widespread adoption of the Java platform as the quality of the language and libraries themselves. Indeed, they are all of a piece, and each deserves recognition and credit for the qualities it manifests.

Millions of developers spend their professional lives enveloped in the ecosystem engendered by the Java platform. There are myriad standards, APIs and tools. There is so much to learn! What's more, the amount of information you need to know keeps on growing. While this growth is something we software professionals should all be thankful for, it is an ongoing challenge for developers. I hope this tutorial will make it easier to meet this challenge and obtain competence and even mastery of the Java platform.

Whether you become a truly "competent programmer," as Edsger Dijkstra put it many years ago, is up to you; but if you don't, it cannot be blamed on the lack of a good Java tutorial. A number of dedicated professionals have done their best to see to that.

I hope this new edition meets and even exceeds the high standards set by its predecessors. Ultimately, it is you, the reader, who must be the judge. I expect you will not be disappointed.

Gilad Bracha
Los Altos, California
June 2006

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Acknowledgments

Many Internet readers have helped us maintain and improve the quality of the tutorial by sending us email and cheerfully pointing out typos, broken links, and areas of the tutorial that caused confusion or could benefit from rewriting.

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We want to thank our former colleague, Joshua Bloch, the original author of the Collections chapter who made the time to provide us with updated information. Thanks also to our external reviewers and longtime supporters, Doug Lea and Brian Goetz.

Debra Scott, our manager, gave us encouragement and the support necessary to do our work — and bring it in on time.

Our program managers, Mary Lautner and Ian Hardie, tracked schedules, ran interference, and provided comic relief.

Illustrators Michael Quillman and Dwayne Wolff created the professional graphics, quickly and efficiently.

We also thank the members of the SQE team who have provided valuable feedback.

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About the Authors

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Scott Hommel is a technical writer on staff at Sun Microsystems, where he documents the Java Platform, Standard Edition. Since 1999, he has contributed to every major

前　言

自从最初的 JDK（Java Development Kit，Java 开发工具包）于 1995 年 5 月发布以来，Sun 公司的工程人员为改进和增强 Java 平台付出了艰苦的努力。本版与 Java SE（Java Platform Standard Edition，Java 平台标准版）6 相一致，并且反映了这一版本的 API。

本版介绍了从第 3 版（对应 Java SE 1.3）出版以来 Java 平台添加的新特性，比如介绍泛型和注解的一章（第 6 章）。还有关于 Java Web Start（第 17 章）、平台环境（第 14 章）和正则表达式（第 13 章）的几章。并发（原来的“线程”）（第 12 章）、I/O（第 10 章）、面向对象的编程概念（第 2 章）和语言基础（第 3 章）这几章都完全重新编写了。集合（第 11 章）从附录中提取出来成为独立的一章。新的附录 B 包含如何准备 Java 编程语言认证（Java Programming Language Certification）考试的信息。

本书的所有资料都经过了 Sun 公司 Java 开发人员的仔细审核，以便确保信息是准确的和最新的。

本书包含的信息（经常被称为“核心教程”或者“基础”）针对初级到中级程序设计人员的需要。

像以往一样，我们的目的是编写容易阅读的实用程序员指南，并且用很多示例帮助读者理解程序。

■　本书面向的读者

本书既适合初学者，也适合有经验的程序员。

- 新程序员通过从头到尾阅读本书可以得到最大的收获，包括按照第 1 章中的分步讲解编译和运行自己的第一个程序。
- 有程序语言（比如 C）经验的程序员可以从 Java 编程语言的面向对象概念和特性开始学习。
- 经验丰富的程序员可以跳到更高级的主题，比如关于泛型、并发或者 Java Web Start 的内容。

本书包含的内容可以满足各种不同经验的程序员的学习需要。

■ 如何使用本书

本书的设计方式使读者既可以通读，也可以在各主题之间跳转。信息按照逻辑的顺序编排，并且尽可能避免向前引用。

书中的示例是在6.0版本下编译的。为了编译和运行大多数示例，读者需要下载这个版本。

本书的网上下载资源包含示例、问题和练习的答案，以及在线Java SE教程、Java SE开发工具包（Java SE Development Kit，JDK）、相应的API规范和指导文档。

在本书中你会看到这样的脚注：

```
docs/api/java/lang/Class.html
```

和

```
tutorial/deployment/applet/examples/TalkServer.java
```

要查看最新的在线页面，在docs脚注前面加http://java.sun.com/javase/6/；在tutorial脚注前面加http://java.sun.com/docs/books/即可：

```
http://java.sun.com/javase/6/docs/api/java/lang/Class.html
http://java.sun.com/docs/books/tutorial/deployment/applet/examples/TalkServer.java
```

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