



国外计算机科学教材系列

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双语教学示范课程
使用教材

双语版 Java 程序设计

何月顺 主编
李祥 张军 副主编

Learn Java
through English and Chinese



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内 容 简 介

Java 是一种良好的跨平台、可移植性好、安全性高、纯面向对象的程序设计语言,是目前软件开发的主流编程语言之一。本书由浅入深、循序渐进地介绍了 Java 语言的发展、编程环境、开发工具、基本语法、面向对象编程、异常处理、线程、输入输出流、GUI 编程、网络编程、数据库编程等内容,并结合大量的实例进行讲解。

本书是国内首次出版的中英文对照混排式双语版 Java 程序设计教材。本书内容注重理论与实践结合,参考了 Java 在线官方文档及国内外优秀的 Java 程序设计教材的知识体系。针对中国学生英文水平及实际教学状况,做了针对性的编写,并对重要的、难以理解的内容进行了中文解释,方便了读者对英文的理解。本书配有电子课件、案例分析、实验指导等教学资源,可登录电子工业出版社华信教育资源网(www.hxedu.com.cn),免费注册、下载。

通过本书的学习,可使学生了解 Java 语言的发展,理解 Java 面向对象编程的基本思想,掌握 Java 语言的基本语法、面向对象程序设计的实现思想、多线程编程、网络程序开发及数据库访问等方面的基本技术。

本书贯彻理论与实践相结合的原则,深入浅出,配以大量实例分析,同时作为中英文对照教材,非常适合高校进行“Java 程序设计”课程的双语教学。本书既可作为高等学校 Java 程序设计或专业英语课程的教材,也可供从事 Java 程序开发的从业人员学习、参考。

Brief Introduction

Java is an excellent cross-platform, portable, safe, pure object-oriented programming language. It is one of mainstream programming languages.

The book introduces Java language progressively. The main chapters of the book include development of Java, programming environment, developing tool, basic syntax, object-oriented programming, exception handling, thread, input and output stream, GUI programming, network programming and database programming. In addition, large numbers of examples are injected in each chapter in order that reader can easily understand the correspondent contents.

The content arrangement of the book highlights combination of theory and practice. Author referred to Java official document and many excellent Java programming textbooks at home and abroad.

Considering Chinese student's English level and actual teaching situation, author provides necessary comments for difficult concepts, so that reader can understand them easily. Related teaching sources of the book such as PPT, case analysis and experimental guidance could be provided to reader. So reader log on www.hxedu.com.cn and obtain these free resources.

By learning the book, students will understand basic concepts of object-oriented programming, master basic syntax of Java language and basic skill of object-oriented programming.

The outstanding features of the book such as combination of theory and practice and large number of examples makes itself suitable for bilingual textbook of "Java programming" course at college. The book as textbook is available for undergraduate students and beginning graduate students. Java programmers could also use the book for reference.

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前 言

Java 语言以它独特的魅力赢得了世界上大部分程序员的认可，它良好的跨平台性、可移植性、安全性等优点使之风靡全球。Sun 公司(2009 年 4 月并入甲骨文公司)最初开发 Java 语言是为了解决智能家用电器的控制和通信问题。随着 Internet 的发展，Sun 公司逐步将 Java 改造成适合计算机网络应用的程序设计语言。目前 Java 语言已经成为网络程序设计的主流编程语言之一，在全球云计算和移动互联网的产业环境下，Java 更具备了显著优势和广阔前景。

“Java 程序设计”是高等院校计算机及相关专业教学计划中的一门重要专业课程，主要包括 Java 语言基本语法、面向对象编程、字符串处理、异常处理、线程、输入输出流、GUI 编程、网络编程、数据库编程等内容。

本书采用中英文对照方式对内容进行编排，以英文为主，对重要的、难理解的知识用中文进行了解释，兼顾了英语基础较差的读者。全书图文并茂，通俗易懂，在介绍理论知识的同时穿插了丰富的实例进行讲解，不仅介绍了 Java 的基础语法，降低了没有编程基础读者学习的难度，又全面介绍了 Java 面向对象程序设计、多线程、异常处理机制、输入输出流、网络编程等重点内容，使读者学完后能进行初级的 Java 程序设计。

本书将阐释：

- Java 的发展历史及 Java 特性、Java 运行环境及编程工具
- Java 语法基础
- Java 面向对象编程，包括类、继承、接口、多态等特性
- 多线程编程
- Java 异常处理机制
- 输入输出流
- GUI 编程
- 网络程序设计
- 数据库访问

本教材基于作者多年来教学实践与改革的经验，以及对开展双语教学的研究，并已经在作者所在学校多次使用之后，特别是收集了学生的反馈意见，教师的教学建议并结合目前国内外 Java 程序设计优秀教材的优点且考虑到学生对双语课程学习特点而编写。主要特色包括以下几个方面：

(1) 中英文结合，突出双语特色。本书以英文为主，中文解释为辅，一方面注重知识点的编排，另一方面也注重英语的应用技巧，可以锻炼读者的英文应用能力。

(2) 增强理论与实践相结合，注重引导式讲解。本书对理论知识的讲解采用循序渐进的方式融入大量实例中，使得对理论知识的理解更加容易，并以国外教材常见的 step by step 的方式完成实例的分析讲解，读者在读完相应的章节后就能进行相应的程序设计。

(3) 突出组织逻辑，增加趣味性。目前国内教材和选用的国外经典教材，用于本科教学后，学生普遍反映概念原理介绍过多，内容组织的逻辑思路不是很明显，以及介绍得比较技术性，不是很生动等。针对学生的反馈，本教材进行了改进。

(4) 重点突出, 本书着重论述了 Java 语言在多线程编程、异常处理机制、网络编程、数据库访问技术等常用技术, 同时对于 Java 语言的特色技术 Applet 也进行了介绍, 使读者能更全面了解 Java 的应用。

本书既可作为高等学校 Java 程序设计或专业英语课程的教材, 也可供从事 Java 程序开发的从业人员学习、参考。

本书由何月顺主编, 李祥、张军副主编。高永平、汪雪元、章伟、吴光明、王志波参加了本书的编写工作, 并得到 Ashok 的大力支持, 在此表示诚挚的感谢。本书是编写组成员对以上内容大量理论知识与实践经验的积累结果, 因时间仓促, 可能存在不妥之处, 欢迎指正 (Email: shipj@phei.com.cn)。

编 者

Foreword

Java is a very appealing language, specific characteristics of which such as cross-platform, portability, security have attracted attention of most programmers in the world. Originally, Java was developed by Sun (Incorporated into the Oracle Corporation in April 2009) to solve problem of control and communication among smart home-appliances. With the development of the Internet, Java was gradually reconstructed into new programming language which can be well suitable for computer network application. Currently Java language has become one of the mainstream programming languages in network programming. Combined with cloud computing technology and global mobile internet, Java's advantages and broad prospects will be more obvious.

"Java Programming" is a key professional course in teaching plan of software engineering faculty and relative faculty. The main teaching content include the basic syntax of the Java language, object-oriented programming, string manipulation, exception handling, thread, input and output streams, GUI programming, network programming and database programming.

The book is bilingual textbook in which English is first language. For some poor-English reader, some important and difficult contents are translated into Chinese. In the book structure, theoretical concepts are associated with examples and images in order that reader can easily understand these concepts. In addition, for different levels of readers, the book not only narrates Java's basic syntax, but also introduces some advanced features of object oriented programming such as multithread, exception handling, input and output streams and network programming. So reader can program after finishing this book.

The main content of the book:

- Java's history, runtime environment and programming tools
- Java syntax
- Object-oriented programming including classes, inheritance, interfaces, polymorphism and other features
- Multithread programming
- Exception handling mechanism
- Input output stream
- GUI programming
- Network programming
- Database

The author has extensive bilingual teaching experience. The draft of the book has been used as textbook at author's school. Combined with the feedback from students and teachers and other excellent textbook, the first version of the book will be published.

The main feature of the book:

- (1) The combination of English and Chinese. English is the first language in the book while some

contents are translated into Chinese. The arrangement will not only contribute to understanding knowledge, but also can improve English language proficiency.

(2) The combination of theory and practice. Problem-based learning model is adopted in the book. A large number of examples are integrated with theoretical knowledge so that these knowledge can be more easily understood. The examples in the book are listed in accordance with the step-by-step procedure. So reader can complete appropriate program after finish the corresponding chapter.

(3) The combination of logicality and delight. Traditional textbook, whether home or abroad, focus much attention on concept and notion. It is difficult for the student in the undergraduate level to understand the architecture of knowledge. The abstract contents seriously impact the interest of the students on learning. So these defects are improved in our book.

(4) Emphasizing key contents. The book focuses mainly on the key features of Java language such as multithread programming, exception handling mechanism, network programming and database access technology. In addition, Applet is introduced so that reader can fully understand the Java language.

The book as textbook is available for undergraduate students and beginning graduate students. Java programmers also can refer to the book.

Prof He yue shun as editor in chief guide the whole editing process. Li Xiang and Zhang Jun as deputy editor are in charge of different chapters. At last, several people such as Gao Yong Ping, Wang Xueyuan, Zhang Wei, Ashok, Wu Guangming and Wang Zhibo need to be acknowledged. Those people make this book possible.

Completion of the book is based on theoretical knowledge and practical experience of editor group. Due to time constraint, there are some deficiencies in the book. If you find problem, please contact us!

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