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21世纪新工具软件开发指南丛书 2

最新Java编程指南

[美] 弗·海斯布洛克 著

Programming Guide for JAVA

英文版

本光盘内容是:
本版电子书

VisualAge for Java version 3.5

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内 容 简 介

这是一本关于 Java 最新版编程指南专著。书中详述了 Java 应用程序、Java 小应用程序、小服务程序和 JSP 编程，以及 3 层应用程序设计概念，并指导用户使用关系数据库和 WebSphere 测试环境，以及帮助用户学会如何使用开发工具所提供的各种功能，诸如综合式调试、WebSphere 测试环境，以及 Web 站点资源的发表。

全书由 12 章和一个附录组成。各章内容分述如下。第 1 章环境概述；第 2 章组织代码；第 3 章迁移到 Java 2；第 4 章 ATM 工程；第 5 章创建小服务程序；第 6 章创建 JSP（Java 服务器网页）；第 7 章创建图形用户界面（GUI）应用程序；第 8 章变更代码的型式；第 9 章 Web 应用程序的测试与调试；第 10 章如何使用关系数据库；第 11 章国际化；第 12 章如何运用 Web 应用程序。

本书既适用于 Java 和 Web 应用环境下从事软件开发的广大编程人员，又是高等院校师生教学、自学参考书，以及科研院所必备的馆藏读物。

本光盘内容包括本版电子书。

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Contents

Chapter 1

VisualAge for Java product is IBM's integrated, visual development environment for building Java applications, servlets, applets, and Java Beans. VisualAge for Java supports the complete cycle of Java program development. Using the true rapid application development (RAD) capability provided by VisualAge for Java, you can shorten the development life cycle of your applications and improve their time to market.

VisualAge for Java is a comprehensive, best-of-breed Java tool for creating e-business applications that target the IBM WebSphere software platform for e-business — the industry's most flexible and reliable e-business foundation for the rapid development and delivery of a brave new world of e-business applications. The ability to rapidly build, test, and deploy e-business applications sets VisualAge for Java apart from its competition.

In this chapter you will find a short description of the VisualAge for Java product family and an overview of VisualAge for Java Version 3.5. You will learn the basic terms that you need to understand to create your first program. Before you finish reading this chapter, you will have your first Java program up and running on the Web!

1.1 | VisualAge for Java product family

VisualAge for Java Version 3.5 is available in four editions:

- VisualAge for Java Professional Edition
- VisualAge for Java Entry Professional Edition
- VisualAge for Java Enterprise Edition
- VisualAge for Java Entry Enterprise Edition

This book covers the VisualAge for Java Version 3.5 Professional Edition and the VisualAge for Java Version 3.5 Entry Professional Edition, without describing the features of VisualAge for Java Enterprise Edition and VisualAge for Java Entry Enterprise Edition.

IBM also has several other offerings related to VisualAge for Java, including:

- VisualAge Developer Domain (VADD)

  VisualAge Developer Domain (VADD) is Java developer's central access point for products, JavaBeans, tools, tech tips, demos and samples, product support, and product updates. In addition, VADD gives you access to an ever-expanding technical library of Java information, including newsletters, IBM Redbooks, technical articles, white papers, IBM Systems Journal articles, product documentation, FAQs, presentations, and educational opportunities. VADD is also a great place for you to exchange information with a worldwide community of Java developers through the forums and newsgroups.VADD offers you different access levels, depending on your needs.

  You can learn more about VisualAge Developers Domain at:

  `www.software.ibm.com/vadd`

- WebSphere Application Server

  IBM WebSphere Application Server is an e-business application deployment environment built on open standards-based technology. It is the cornerstone of WebSphere application offerings and services. The Standard Edition lets you use Java servlets, Java Server Pages and XML to quickly transform static Web sites into vital sources of dynamic Web content. The Advanced Edition is a high-performance EJB server for implementing EJB components that incorporate business logic. The Enterprise Edition integrates EJB and CORBA components to build high-transaction, high-volume e-business applications.

1.1.1 VisualAge for Java Professional Edition

VisualAge for Java Professional Edition is an integrated visual environment that supports the complete cycle of Java program development. VisualAge for Java gives you everything you need to perform the development tasks. described below. The IDE includes:

- Incremental compiler

  Changes to your code are compiled "on-the-fly" as you work with individual methods and class declarations. Errors in your code are immediately flagged so that they can be fixed while you are concentrating on that part of the code.

- Repository-based environment

  All of the code in the development environment is stored in a ***repository***. This

repository enables incremental compilation and provides for very powerful search capabilities. The code that you are working with is stored in a *workspace*. Version management is built into the repository, and versions or *editions* of code are automatically stored when you change any *program element* (method, class, package, or project) in your workspace.

VisualAge for Java Professional Edition is a single-user, repository-based environment. If you work as part of a development team, you may want to consider using VisualAge for Java Enterprise Edition.

- Project-based development

  VisualAge for Java provides *projects*. The basic Java environments provide only the concept of a package to organize your work. In VisualAge for Java you organize your packages in projects.
- Source code editor

  A full-featured syntax editor, which helps you write error-free source code.
- Advanced coding tools such as automatic formatting, automatic code completion, fix-on-save, and suggested corrections feature
- An integrated debugger
- A Visual Composition Editor, which enables you to develop your application visually
- A JavaBean creation tool to create 100% pure Java beans that you can use with the Visual Composition Editor

New powerful features that come with Version 3.5 of VisualAge for Java Professional Edition include:

- Full Java 2 SDK, Standard Edition, V1.2.2 support

  - JDK 1.2.2

  - Swing 1.1
- Fix/Migrate SmartGuide assists with Swing 1.0.3 ->Swing 1.1 Migration
- Full source code editing

  The new option Open Source View provides you with another way to view entire source in editor. Code assist is available in source view. The file format/order is preserved. The editor-oriented programmers should like this!
- Improved inner class support

  You can Browse/Edit inner classes/methods like normal classes/methods in IDE.
- Manage non-Java artifacts from Resources view

  Non-Java artifacts are not stored in repository. They are managed based on date/time stamp when resources are released

- Enhanced code formatting
- Servlet SmartGuide generates servlets, JSP files, and prototype HTML
- All Problems page filtering
  Filter warnings/errors on All Problems page
- New WebSphere Test Environment Control Center
  You can Start/Stop Servlet Engine, Start/Stop Persistent Name Server (PNS),Set JSP Execution Monitor Settings and Define Data Sources

1.1.2 VisualAge for Java Entry Professional Edition

The VisualAge for Java Entry Professional Edition provides the same functions as VisualAge for Java Professional, with a limit of 750 Java types (classes and interfaces).

To download VisualAge for Java, Entry Professional Edition, Version 3.5 you must be a registered user of VisualAge Developer Domain and logged in. Registration is free.

VisualAge Developer Domain(VADD) Web site:

```
www.software.ibm.com/vadd
```

1.1.3 VisualAge for Java Enterprise Edition

VisualAge for Java Enterprise Edition is an enterprise-aware, Java application development environment for teams of Java developers. Use it to extend existing server data, transactions, and applications to e-business.

In addition to the functions in the Professional Edition, VisualAge for Java V3.5 Enterprise Edition supports:

- Updated Enterprise Access Builder (EAB) functionality that consolidates connectors at a JDK 1.2.2 level and positions customers for compliance to the emerging Java 2 Platform, Enterprise Edition JCX API.
- Enhanced Enterprise Access Builders (CICS TS, IMS, Encina, MQSeries,TXSeries, Host-On Demand, and SAP R/3) that provide more connectivity than any other Java IDE.
- Test client generation that speeds testing of server side Java code (EJB components). Also generates clients to Enterprise Access Builders connectors.
- Enterprise JavaBeans components. Generation of and complete support for the EJB specification, through wizards, persistent mapping tools, dependency management, and improved test and advanced deployment tools.
- XMI Toolkit for integration with the Rational Rose product, and other XMI-based UML modelling tools.

- Interface definition language (IDL) development environment and improved support for multiple object request brokers (ORBs), which can now be loaded into and unloaded from the development environment.

1.1.4 VisualAge for Java Entry Enterprise Edition

The VisualAge for Java Entry Enterprise Edition provides the same functions as VisualAge for Java Enterprise Edition, with a limit of 750 Java types (classes and interfaces).

To download VisualAge for Java, Entry Enterprise Edition, Version 3.5, you must be registered user of VisualAge Developer Domain and logged in. Registration is free.

VisualAge Developer Domain(VADD) Web site:

```
www.software.ibm.com/vadd
```

1.1.5 Updates to VisualAge Java

Updates to the different editions of VisualAge Java are provided at the VisualAge Developer Domain (VADD) Web site:

```
www.software.ibm.com/vadd
```

1.2 | Building your first applet

Now that you have an idea of the capabilities of VisualAge for Java, you can build your first applet.

Before starting, you should familiarize yourself with the terms in Table 1. If you are not familiar with any of the terms in Table 1 or you are new to the Java language itself, first read some of the related resources.

Table 1 Object-oriented terms

Term	Definition
Class	A template for creating objects. A class defines the behavior and properties that are common to all objects of that class.
Interface	A specification of behavior that a class must provide if it implements the interface.
Object	An instance of a class. An object shares the behavior of all objects of the same class, but each object can have a different state.
Applet	A special kind of class introduced in Java. Its instances usually run in a Web browser such a Netscape Navigator. Contrast with *Application*.
JApplet	If you want to use Swing components in the applet, use JApplet as the super class rather then Applet.

Continued

Term	Definition
Swing Set	Swing Set = JFC (Java Foundation Classes) JFCs are building blocks that are helpful in developing interfaces to Java applications. They allow Java applications to interact more completely with existing operating systems.
Application	In Java programming, a self-contained, stand-alone Java program that includes a static main method. It does not require an applet viewer. Contrast with Applet.
Attribute or field	A data variable held by a class.
Access modifier	In Java the access modifiers are public, private, protected, and default or package.
Method or Message	Objects communicate with each other by sending messages. When an object receives a message, a corresponding method, defined in the class definition, is invoked to perform the required task.
Package	A collection of Java classes that typically serve a common purpose. This is Java's way of organizing classes into logical entities that are easier to maintain and understand than a huge set of classes at the same level.
Server	The computer that hosts the Web page that contains an applet. The .class files that make up the applet, and the .HTML files that reference the applet reside on the server.
Servlet	Server-side programs that execute on and add function to Web servers. Java servlets allow for the creation of high-performance, cross-platform Web applications.

1.2.1 Let's get started!

Before you go any further, you must have VisualAge for Java installed on your computer. Your first Java class is a simple applet that displays the text of your choice in the applet's window. You launch VisualAge for Java by double-clicking the **IBM VisualAge for Java** icon in the IBM VisualAge for Java folder or selecting **Start→ Programs→ IBM VisualAge for Java for Windows→ IBM VisualAge for Java**.

If this is the first time you have started VisualAge for Java, a dialog box will inform you that some features are being installed. Next, the Welcome to VisualAge dialog box (see Figure 1) is displayed. The Welcome to VisualAge dialog box is shown when you start the VisualAge for Java IDE, unless you deselect the checkbox at the bottom of the window. Click **Close** to close the dialog box.

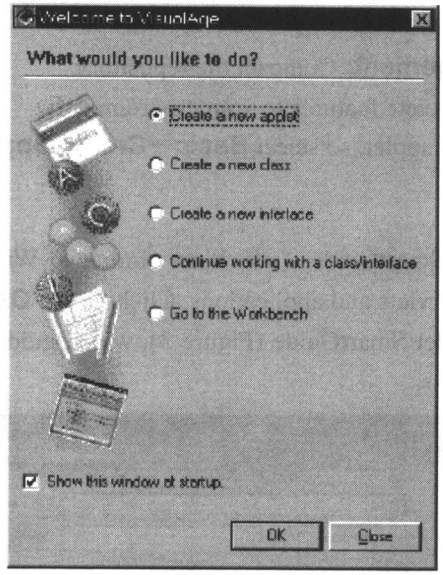

Figure 1. The VisualAge for Java Welcome dialog box

A different dialog, the Quick Start, can also be used to start. The Quick Start is available from the **Workbench→ File** menu (see Figure 2).

The Workbench window opens the first time you start VisualAge for Java. The Workbench is where you usually create and manipulate your classes. From the Workbench you can launch the Quick Start window. Open the Quick Start now, by selecting **File→Quick Start** from the menu bar.

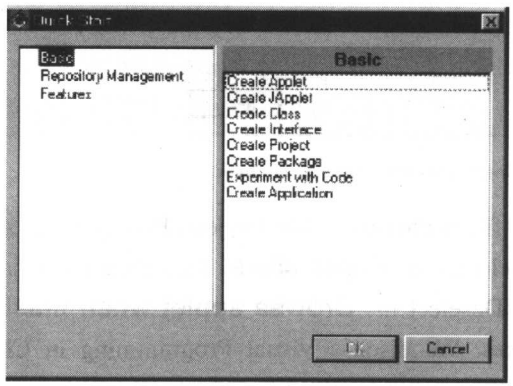

Figure 2. The Quick Start dialog box

Using the Quick Start dialog, you can select from three options:

- **Basic:** Create a new Applet, JApplet, Class, Interface, Project or Application, or