Text Book Of

ADVANCED JAVA PROGRAMMING

For

Semester - VI

Third Year Diploma Course in Computer Engineering Group

As Per MSBTE's 'G' Scheme Syllabus

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Preface ...

While writing this book on **"Advanced Java Programming"**, we thought that, there are large numbers of books available on this subject and all these books have been written by experts of this subject. What made us to write this book is requirement of all topics as per 'G' Scheme syllabus of MSBTE in one book.

This book has been written for T.Y. (Computer Engineering Group) Sixth Semester. After reading this book students will find all the topics as per new revised syllabus. Though the book has been written in exam point of view, we have made efforts to strike balance between quality of content that reference books have and examination point of view which academic books have. The book has been organized in such a way that it will encourage students to use other resources on that topic by generating their interest in that topic. The language of book has been kept very easy and concepts have been explained with lot of figures. While giving this book to students we hope that students will appreciate the right mixture of examination point of view and knowledge point of view.

Our special appreciation goes to Shri. Dineshbhai Furia, Shri. Jigneshbhai Furia, Mr. Amar Salunkhe, Mr. Akbar Shaikh and Miss Chaitali Takle of Nirali Prakashan, Pune for publishing this book in a good and presentable manner within very short time.

Suggestions and constructive criticisms to improve the book are most welcome !

... **Authors**

Syllabus ...

1. Introduction to Abstract Windowing Toolkit (AWT) and Swings (Hours 16, Marks 14)

1.1 Component, Container, Window, Frame, Panel

1.2 Creating Windowed Programs and Applets

1.3 AWT Controls and Layout Managers: Understanding the use of AWT Controls: Labels, Buttons, Checkbox, Checkbox Group, Scroll Bars, Text Field, Text Area Understanding the use of Layout Managers: flowLayout, borderLayout, gridLayout, cardLayout, gridbagLayout, menubars, Menus, Dialog boxes, File Dialog

1.4 Introduction to Swing: Swing Features, MVC Architecture, Combo Boxes, Progress Bar, Tool Tips, Seperator, Tables, Trees, Toggle Button

2. Event Handling (Hours 10, Marks 20)

2.1 The Delegation Event Model: Event Sources, Event Listeners, Event Classes. The Action Event Class, The Component Event Class, The Container Event Class, The Focus Event Class, The Item Event Class, The Key Event Class, The Mouse Event Class, The Text Event Class, The Window Event Class

2.2 Adapter Classes

2.3 Inner Classes

2.4 Event Listener Interfaces: The ActionListener Interface, The ComponentListener Interface, The ContainerListener Interface, The FocusListener Interface, The ItemListener Interface, The KeyListener Interface, The MouseListener Interface, The MouseMotion Interface, The TextListener Interface, The WindowsListener Interface, The WindowFocusListener Interface

3. Networking and Security (Hours 08, Marks 16)

3.1 Basics of Networking

- Socket, IP, TCP, UDP, Proxy Server, Internet Addressing

3.2 The InetAddress Class

- Factory Methods
- Instance Methods

3.3 TCP/IP Sockets

- Socket, Server Socket, Methods

3.4 URL

- URL Connection, http, URL Connection Methods, Creating and Using TCP/IP Client and Server

3.5 Security with Java: Theoretical Introduction to java.security

- Package
- Permission Class
- Policy Class

4. Interacting with Database **(Hours 06, Marks 20)**

4.1 JDBC, ODBC and Other APIS

- JDBC Two Tier and Three Tier Models

4.2 Connecting to Database

- Driver Interface, Driver Manager Class, Connection Interface
- Statement Interface, The java.sql.package
- Establishing Connection and Retrieving Information Resultset Interface

5. Servlets and JSP **(Hours 08, Marks 20)**

5.1 Servlet

- Type of Servlet, Servlet Life Cycle

5.2 Using Servlets, Response Redirection

5.3 Basic Concepts of Sessions, Cookies and Session Tracking

5.4 Introduction to Servlet Chaining and Filters, Introduction to Applet Servlet Communication

5.5 JSP, Expression, Directives and Declarations, Life Cycle of a JSP Page TLD and JSTL, Java Beans

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