

# Java Programming Lab Manual

Asadullah Shah

Zeeshan Bhatti



IIUM PRESS

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

# **JAVA PROGRAMMING LAB MANUAL**

---

**Editors**

**Asadullah Shah  
Zeeshan Bhatti**

**Department of  
Kulliyah of Information & Communication Technology  
International Islamic University Malaysia**

**January 2011**



**IIUM Press**

Published by:  
IIUM Press  
International Islamic University Malaysia

First Edition, **2011**.  
©IIUM Press, IIUM

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without any prior written permission of the publisher.

Perpustakaan Negara Malaysia

Cataloguing-in-Publication Data

Bibliography p.  
Includes Index  
ISBN

ISBN: 978-967-418-086-7

Member of Majlis Penerbitan Ilmiah Malaysia – MAPIM  
(Malaysian Scholarly Publishing Council)

Printed by :  
**IIUM PRINTING SDN. BHD.**  
No. 1, Jalan Industri Batu Caves 1/3  
Taman Perindustrian Batu Caves  
Batu Caves Centre Point  
68100 Batu Caves  
Selangor Darul Ehsan

**TABLE OF CONTENTS**

Dedication	v
Preface	xi
Acknowledgement	xiii
Chapter 1: Introduction to Java	15
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 2: Compiling and Executing Java Code	21
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 3: Introduction to Data Types in Java	27
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 4: Arithmetic and Relational Operators	33
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 5: Relational and Logical Operators	39
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 6: Bitwise Operators and Type Casting	45
- Asadullah Shaikh	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 7: Conditional Statements	51
- Asadullah Shaikh	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 8: If-Else Statements	55
- Asadullah Shaikh	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 9: The If-Else-If Statements	61
- Asadullah Shaikh	
- Zeeshan Bhatti	
- Asadullah Shah	

Chapter 10: Switch Statement	67
- Asadullah Shaikh	
- Zeeshan Bhatti	
- Asadullah Shah	
	73
Chapter 11: Loops	
- Agha Javed Phatan	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 12: Do-While Loops	79
- Agha Javed Phatan	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 13: For Loops	85
- Agha Javed Phatan	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 14: Loop Pitfalls and Exercise	93
- Agha Javed Phatan	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 15: Nested Loops	99
- Agha Javed Phatan	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 16: Arrays in Java	105
- Waseem Javaid Soomro	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 17: Two Dimensional Arrays	111
- Waseem Javaid Soomro	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 18: Strings	119
- Waseem Javaid Soomro	
- Zeeshan Bhatti	
- Asadullah Shah	

Chapter 19: Methods of String Class	127
- Waseem Javaid Soomro	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 20: Object and Classes	135
- Waseem Javaid Soomro	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 21: Constructors	141
- Dil Nawaz Hakro	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 22: User defined Methods	147
- Dil Nawaz Hakro	
- Zeeshan Bhatti	
- Asadullah Shah	viii
Chapter 23: Arguments Passing	155
- Dil Nawaz Hakro	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 24: Return Statement	163
- Dil Nawaz Hakro	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 25: Working with Classes	169
- Dil Nawaz Hakro	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 26: Multiple Classes	177
- Muniba Shaikh	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 27: Method Overloading and Overriding	185
- Muniba Shaikh	
- Zeeshan Bhatti	
- Asadullah Shah	

Chapter 28: Modifiers for class data	191
- Muniba Shaikh	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 29: Inner Classes	199
- Muniba Shaikh	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 30: Comparison between different class types	207
- Muniba Shaikh	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 31: Exception Handling	215
- Kamran Khowaja	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 32: Throw & Throws Keyword	223
- Kamran Khowaja	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 33: Local Block and Static Block	231
- Kamran Khowaja	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 34: Abstract Classes	237
- Dini Oktarina Dwi	
- Zeeshan Bhatti	
- Asadullah Shah	
Chapter 35: Interfaces	245
- Dini Oktarina Dwi	
- Zeeshan Bhatti	
- Asadullah Shah	

## Chapter 12

### Do-While Loop

Agha Javad Phatan, Zeeshan Bhatti, Asadullah Shah

#### Abstract

The use of loops in programming is an immense importance. The do-while loop discussed in this chapter is a little unorthodox from its two counter parts while() and for() loops in a way that do-while loops execute its statement block first and then evaluates the condition. In this way the statements in a block execute at least once even if the condition is false in its first run. In this experiment the students are going to be taught a proper use of do-while() loop.

#### 12.1 The Do-While loop

Similar to the while loop but the main difference in the do-while construct is that the statements come first and then the condition. The execution similarly is also in this same order where the statements within the do block is executed first and then the condition in while() is evaluated.

This means the no matter what the condition is the statements or the do block gets executed first.

The syntax of the do-while loop is as follows:

```
do {  
    repeated_statement_or_block  
}  
  
while ( boolean_condition );
```

here you can see that the do block is written first, then the block is closed and followed by a while() statement.