

# Java Programming Lab Manual

Asadullah Shah

Zeeshan Bhatti



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INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

# **JAVA PROGRAMMING LAB MANUAL**

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**Editors**

**Asadullah Shah  
Zeeshan Bhatti**

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

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**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 17

### Two Dimensional Arrays

**Waseem Javaid Soomro, Zeeshan Bhatti, Asadullah Shah**

#### Abstract

The array is a very useful and elegant way to group similar objects and its capabilities can be enhanced by creating array of an array, also called two dimensional array. Two dimensional or 2-D arrays are used to represent tables, matrices, game boards, images and others. In this chapter 2-D arrays are discussed in detail along with their structures.

#### 17.1 Two Dimensional Arrays

2-D arrays are useful in representing tabular information in form of rows and columns such as shown in Figure 17.1 below. Element of a 2-D array is addressed using a pair of indices, “row” and “column.” For example:

```
board[ r ] [ c ] = 'x';
```

- In Java, a 2-D array is basically a 1-D array of 1-D arrays, its rows. Each row is stored in a separate block of consecutive memory locations.
- If *m* is a 2-D array, then *m*[*k*] is a 1-D array, the *k*-th row
  - *m*.length is the number of rows.
  - *m*[*k*].length is the length of the *k*-th row.
  - Consider this declaration plus initialization:

```
int[][] myInts = new int[3][4];
```