

Exposure Java, 2008 AB Table of Contents

Chapters XXIII - XXXIX

XXIII Review of Java Syntax		
23.1	Introduction	23.2
23.2	Primitive Data Types	23.3
23.3	Control Structures	23.11
23.4	Program Input	23.18
23.5	Summary	23.28
XXIV Focus on OOP, Encapsulation and AWT Review		
24.1	Introduction	24.2
24.2	OOP Terminology	24.3
24.3	The Person Case Study	24.7
24.4	Objects Are References	24.27
24.5	Scope of an Object	24.34
24.6	Using the "this" Reference	24.36
24.7	Static Attributes and Methods	24.38
24.8	OOP Encapsulation Summary	24.46
24.9	Review of AWT Graphics	24.49
XXV Focus on OOP, Inheritance, Composition and Graphics		
25.1	Introduction	25.2
25.2	Inheritance Syntax	25.5
25.3	Passing Information to a Super Class	25.11
25.4	Overriding Super Class Methods	25.16
25.5	Public, Private and Protected	25.24
25.6	Composition	25.27
25.7	Multiple Inheritance	25.31
25.8	OOP Inheritance and Composition Summary	25.33
25.9	Advanced Graphics Review	25.34

XXVI Static Arrays and ArrayList		
26.1	Introduction	26.2
26.2	Array Definition	26.7
26.3	Static One-Dimensional Arrays	26.9
26.4	Static Two-Dimensional Arrays	26.16
26.5	The List Case Study	26.23
26.6	The ArrayList Class	26.48
26.7	Are Strings Arrays of Characters?	26.63
26.8	The Enhanced For Loop.	26.65
26.9	Autoboxing	26.69
26.10	Generics with ArrayList	26.72
26.11	Summary	26.75
XXVII Focus on OOP, Redefining Existing Java Methods		
27.1	Introduction	27.2
27.2	Redefining the toString Method	27.3
27.3	The TimeTest Class	27.16
27.4	Redefining the equals Method	27.21
27.5	Implementing compareTo	27.28
27.6	A Close Look at Parameter Passing	27.34
27.7	Summary	27.47
XXVIII Input/Output with Sequential Files		
28.1	Introduction	28.2
28.2	Different Types of Files	28.5
28.3	Using the File Class	28.6
28.4	Files of Character Strings	28.11
28.5	Files of Numbers	28.21
28.6	A Note About the Scanner Class.	28.27
28.7	Summary	28.30
XXIX The Stack ADT		
29.1	Introduction	29.2
29.2	Data Vocabulary	29.3
29.3	Information Hiding	29.8
29.4	Stacks at the Abstract Level	29.11
29.5	Using Java's Stack Class	29.16
29.6	Processing Data with a Stack Class	29.20
29.7	Using Stack with Different Data	29.23
29.8	Implementing MyStack Statically.	29.28

29.9	Implementing MyStack Dynamically	29.34
29.10	Completing Stack Methods.	29.45
29.11	Infix, Prefix, and Postfix Notations	29.52
29.12	Summary	29.58
XXX The Queue and Priority Queue		
30.1	Introduction	30.2
30.2	Queues at the Abstract Level	30.2
30.3	Using Java's Queue Interface.	30.6
30.4	Processing Data with a Queue Class	30.12
30.5	Using Queue with Different Data.	30.17
30.6	Implementing a Queue Statically.	30.22
30.7	Implementing a Queue Dynamically	30.26
30.8	Completing Queue Methods	30.35
30.9	Priority Queue at the Abstract Level	30.38
30.10	Enumerated Types	30.40
30.11	Using Java's PriorityQueue Class	30.50
30.12	Summary	30.52
XXXI Focus on OOP, Collections, Interfaces, Abstract Classes, Iterators & Polymorphism		
31.1	Introduction	31.2
31.2	What is an Interface?.	31.3
31.3	The Collection Hierarchy.	31.5
31.4	Java Collections	31.10
31.5	Linked Lists, Hashing and Trees.	31.20
31.6	Interfaces and Implementations	31.31
31.7	Abstract Classes	31.44
31.8	Iterators	31.53
31.9	Polymorphism	31.64
31.10	Summary	31.74
31.11	Program Design Review	31.83
XXXII Recursion II		
32.1	Introduction	32.2
32.2	Pre-Recursion Assignment.	32.3
32.3	Recursion Requires an Exit.	32.5
32.4	Recursion Fundamentals	32.8
32.5	Recursive Return Methods.	32.17
32.6	Fibonacci, a Recursive Nono	32.24
32.7	Evaluating Recursive Methods.	32.27
32.8	Manipulating Parameters of Recursive Methods	32.34

32.9	Multiple Recursive Calls and the Tower of Hanoi.	32.41
32.10	Why Recursion?	32.50
32.11	The recursive Bubble Sort	32.57
32.12	The Merge Sort Case Study	32.61
32.13	Mutual Recursion	32.78
32.14	Summary	32.82
XXXIII Linked Lists I		
33.1	Introduction	33.2
33.2	Review of the Linked List Class	33.4
33.3	Multiple Queue Implementations.	33.13
33.4	Pre-OOP ListNode Class	33.17
33.5	OOP ListNode Class	33.22
33.6	Loops and Linked Lists	33.29
33.7	Considering Cases	33.32
33.8	An Ordered Linked List	33.41
33.9	Linked Lists and Memory	33.44
33.10	The GfxNode Class.	33.46
33.11	Practice Exercises	33.50
33.12	Summary	33.62
XXXIV Linked Lists II		
34.1	Introduction	34.2
34.2	Dereferencing Null.	34.2
34.3	The MyStack Class.	34.10
34.4	Queues and Circular Lists	34.15
34.5	Doubly Linked Lists	34.22
34.6	Linked Lists of Linked Lists.	34.25
34.7	Practice Exercises	34.43
34.8	Summary	34.55
XXXV Binary Trees		
35.1	Introduction	35.2
35.2	Binary Tree Vocabulary	35.5
35.3	The Binary Search Tree	35.9
35.4	Declaring a Binary Tree Node.	35.11
35.5	Creating a Three-Node Binary Tree	35.12
35.6	Traversal Methods.	35.17
35.7	Creating a Binary Search Tree	35.27
35.8	Traversing a Binary Tree by Levels.	35.32
35.9	Deleting Nodes from a Binary Tree	35.37
35.10	Different Types of Binary Trees	35.50

35.11	Using an Auxiliary Method	35.58
35.12	To Auxiliary or <u>not</u> to Auxiliary, That is the Question.	35.64
35.13	Binary Tree Methods	35.67
35.14	The Tree Statistics Program	35.74
35.15	Summary	35.80
XXXVI Algorithmic Analysis		
36.1	Introduction	36.2
36.2	Measuring Execution Efficiency.	36.4
36.3	Measuring Simple Algorithms	36.8
36.4	Linear Search and Binary Search	36.18
36.5	Adding a Node to a Linked List	36.24
36.6	Measuring Nested Loop Algorithms.	36.30
36.7	Measuring the Merge Sort	36.37
36.8	Algorithms with Drastic Behavior.	36.44
36.9	Measuring Algorithmic Consistency	36.50
36.10	Algorithmic Analysis Methods	36.64
36.11	What Good is Big-O?	36.72
36.12	Computing Big-O Methods	36.74
36.13	Best, Worst and Average Case Scenarios	36.88
XXXVII Sets and Maps		
37.1	Introduction	37.2
37.2	Review of the Set Data Structure.	37.3
37.3	Set Implementations.	37.6
37.4	HashSet & TreeSet Methos.	37.9
37.5	Set Operations	37.17
37.6	HashMap & TreeMap Basics	37.23
37.7	HashMap & TreeMap Methods	37.29
37.8	A Practical Map Program Example	37.34
37.9	Summary	37.38
XXXVIII Algorithms II		
38.1	Introduction	38.2
38.2	Evaluating Algorithms	38.3
38.3	Testing Sorting Methods	38.5
38.4	The Elapsed Time Matrix	38.8
38.5	The Bubble Sort	38.10
38.6	The Selection Sort.	38.13
38.7	The Insertion Sort	38.14
38.8	The Shell-Metzner Sort	38.20
38.9	The Merge Sort	38.23

38.10	The Quick Sort	38.27
38.11	The Heap Sort	38.32
38.12	The Binary Tree Sort	38.38
38.13	Sorting Summary	38.43
38.14	Linear Search and Binary Search Review	38.49
38.15	Hashing	38.58
38.16	Searching Summary	38.68
XXXIX The AP CS 'AB' Examination		
39.1	Introduction	39.2
39.2	The Exam Format	39.4
39.3	The AP Java Subset	39.6
39.4	Java Standard Libraries	39.9
39.5	The Case Study.	39.16
39.6	Multiple Choice Sample Questions	39.17
39.7	Free Response Sample Questions	39.21
39.8	Exam Day Important Reminders.	39.25

