Programma Certificazione Oracle OCA Oracle Certified Associate, Java SE

Java Building Blocks

- Understanding the Java Class Structure
    - Fields and Methods
    - Comments
    - Classes vs. Files
- Writing a main() Method
- Understanding Package Declarations and Imports
    - Wildcards
    - Redundant Imports
    - Naming Conflicts
    - Creating a New Package
    - Code Formatting on the Exam
- Creating Objects
    - Constructors
    - Reading and Writing Object Fields
    - Instance Initializer Blocks
    - Order of Initialization
- Distinguishing Between Object References and Primitives
    - Primitive Types
    - Reference Types
    - Key Differences
- Declaring and Initializing Variables
    - Declaring Multiple Variables
- Identifiers
- Understanding Default Initialization of Variables
    - Local Variables
    - Instance and Class Variables
- Understanding Variable Scope
- Ordering Elements in a Class
- Destroying Objects
    - Garbage Collection
    - finalize()
- Benefits of Java

Operators and Statements

- Understanding Java Operators
- Working with Binary Arithmetic Operators
    - Arithmetic Operators
    - Numeric Promotion
- Working with Unary Operators

    - Logical Complement and Negation Operators
    - Increment and Decrement Operators
- Using Additional Binary Operators
    - Assignment Operators
    - Compound Assignment Operators
    - Relational Operators
    - Logical Operators
    - Equality Operators
- Understanding Java Statements
    - The if-then Statement
    - The if-then-else Statement
    - The switch Statement
    - The while Statement
    - The do-while Statement
    - The for Statement
- Understanding Advanced Flow Control
    - Nested Loops
    - Adding Optional Labels
    - The break Statement
    - The continue Statement

Core Java APIs

- Creating and Manipulating Strings
    - Concatenation
    - Immutability
    - The String Pool
    - Important String Methods
    - Method Chaining
- Using the StringBuilder Class
    - Mutability and Chaining
    - Creating a StringBuilder
    - Important StringBuilder Methods
    - StringBuilder vs. StringBuffer
- Understanding Equality
- Understanding Java Arrays
    - Creating an Array of Primitives
    - Creating an Array with Reference Variables
    - Using an Array
    - Sorting
    - Searching
    - Varargs
    - Multidimensional Arrays
- Understanding an ArrayList
    - Creating an ArrayList
    - Using an ArrayList
    - Wrapper Classes

    - Autoboxing
    - Converting Between array and List
    - Sorting
- Working with Dates and Times
    - Creating Dates and Times
    - Manipulating Dates and Times
    - Working with Periods
    - Formatting Dates and Times
    - Parsing Dates and Times

Methods and Encapsulation

- Designing Methods
    - Optional Specifiers
    - Return Type
    - Method Name
    - Parameter List
    - Optional Exception List
    - Method Body
- Working with Varargs
- Applying Access Modifiers
    - Private Access
    - Default (Package Private) Access
    - Protected Access
    - Public Access
    - Designing Static Methods and Fields
    - Calling a Static Variable or Method
    - Static vs. Instance
    - Static Variables
    - Static Initialization
    - Static Imports
- Passing Data Among Methods
- Overloading Methods
- Creating Constructors
    - Default Constructor
    - Overloading Constructors
    - Final Fields
    - Order of Initialization
- Encapsulating Data
    - Creating Immutable Classes
- Writing Simple Lambdas
    - Lambda Example
    - Lambda Syntax
    - Predicates

Class Design

- Introducing Class Inheritance
    - Extending a Class
    - Applying Class Access Modifiers
    - Creating Java Objects
    - Defining Constructors
    - Calling Inherited Class Members
    - Inheriting Methods
    - Inheriting Variables
- Creating Abstract Classes
    - Defining an Abstract Class
    - Creating a Concrete Class
    - Extending an Abstract Class
- Implementing Interfaces
    - Defining an Interface
    - Inheriting an Interface
    - Interface Variables
    - Default Interface Methods
    - Static Interface Methods
- Understanding Polymorphism
    - Object vs. Reference
    - Casting Objects
    - Virtual Methods
    - Polymorphic Parameters
    - Polymorphism and Method Overriding

Exceptions

- Understanding Exceptions
    - The Role of Exceptions
    - Understanding Exception Types
    - Throwing an Exception
- Using a try Statement
    - Adding a finally Block
    - Catching Various Types of Exceptions
    - Throwing a Second Exception
- Recognizing Common Exception Types
    - Runtime Exceptions
    - Checked Exceptions
    - Errors
- Calling Methods That Throw Exceptions
    - Subclasses
    - Printing an Exception