<u>**OCJP-Paper II**</u>

Java SE 8 Programmer II Exam Number: 1Z0-809 OCJP

TOPICS

Java Class Design
- Implement encapsulation
- Implement inheritance including visibility modifiers and composition
- Implement polymorphism
- Override hashCode, equals, and toString methods from Object class
- Create and use singleton classes and immutable classes
- Develop code that uses static keyword on initialize blocks, variables, methods, and classes

Advanced Java Class Design
- Develop code that uses abstract classes and methods
- Develop code that uses final keyword
- Create inner classes including static inner class, local class, nested class, and anonymous inner class
- Use enumerated types including methods, and constructors in an enum type
- Develop code that declares, implements and/or extends interfaces and use the atOverride annotation.
- Create and use Lambda expressions

Generics and Collections
- Create and use a generic class
- Create and use ArrayList, TreeSet, TreeMap, and ArrayDeque objects
- Use java.util.Comparator and java.lang.Comparable interfaces
- Collections Streams and Filters
- Iterate using forEach methods of Streams and List
- Describe Stream interface and Stream pipeline
- Filter a collection by using lambda expressions
- Use method references with Streams

Lambda Built-in Functional Interfaces
- ➢ Use the built-in interfaces included in the java.util.function package such as Predicate, Consumer, Function, and Supplier
- ➢ Develop code that uses primitive versions of functional interfaces
- ➢ Develop code that uses binary versions of functional interfaces
- ➢ Develop code that uses the UnaryOperator interface

Java Stream API
- ➢ Develop code to extract data from an object using peek() and map() methods including primitive versions of the map() method
- ➢ Search for data by using search methods of the Stream classes including findFirst, findAny, anyMatch, allMatch, noneMatch
- ➢ Develop code that uses the Optional class
- ➢ Develop code that uses Stream data methods and calculation methods
- ➢ Sort a collection using Stream API
- ➢ Save results to a collection using the collect method and group/partition data using the Collectors class
- ➢ Use flatMap() methods in the Stream API

Exceptions and Assertions
- ➢ Use try-catch and throw statements
- ➢ Use catch, multi-catch, and finally clauses
- ➢ Use Autoclose resources with a try-with-resources statement
- ➢ Create custom exceptions and Auto-closeable resources
- ➢ Test invariants by using assertions

Use Java SE 8 Date/Time API
- ➢ Create and manage date-based and time-based events including a combination of date and time into a single object using LocalDate, LocalTime, LocalDateTime, Instant, Period, and Duration
- ➢ Work with dates and times across timezones and manage changes resulting from daylight savings including Format date and times values
- ➢ Define and create and manage date-based and time-based events using Instant, Period, Duration, and TemporalUnit

Java I/O Fundamentals
- ➢ Read and write data from the console
- ➢ Use BufferedReader, BufferedWriter, File, FileReader, FileWriter, FileInputStream, FileOutputStream, ObjectOutputStream, ObjectInputStream, and PrintWriter in the java.iopackage.

- ➢ Java File I/O (NIO.2)
- ➢ Use Path interface to operate on file and directory paths
- ➢ Use Files class to check, read, delete, copy, move, manage metadata of a file or directory
- ➢ Use Stream API with NIO.2

Java Concurrency
- ➢ Create worker threads using Runnable, Callable and use an ExecutorService to concurrently execute tasks
- ➢ Identify potential threading problems among deadlock, starvation, livelock, and race conditions
- ➢ Use synchronized keyword and java.util.concurrent.atomic package to control the order of thread execution
- ➢ Use java.util.concurrent collections and classes including CyclicBarrier and CopyOnWriteArrayList
- ➢ Use parallel Fork/Join Framework
- ➢ Use parallel Streams including reduction, decomposition, merging processes, pipelines and performance.

Building Database Applications with JDBC
- ➢ Describe the interfaces that make up the core of the JDBC API including the Driver, Connection, Statement, and ResultSet interfaces and their relationship to provider implementations
- ➢ Identify the components required to connect to a database using the DriverManager class including the JDBC URL
- ➢ Submit queries and read results from the database including creating statements, returning result sets, iterating through the results, and properly closing result sets, statements, and connections

Localization
- ➢ Read and set the locale by using the Locale object
- ➢ Create and read a Properties file
- ➢ Build a resource bundle for each locale and load a resource bundle in an application

REFERENCE

Oracle Certified Professional Java® SE 8 Programmer II STUDY GUIDE
EXAM 1ZO-809 (SYBEX)

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