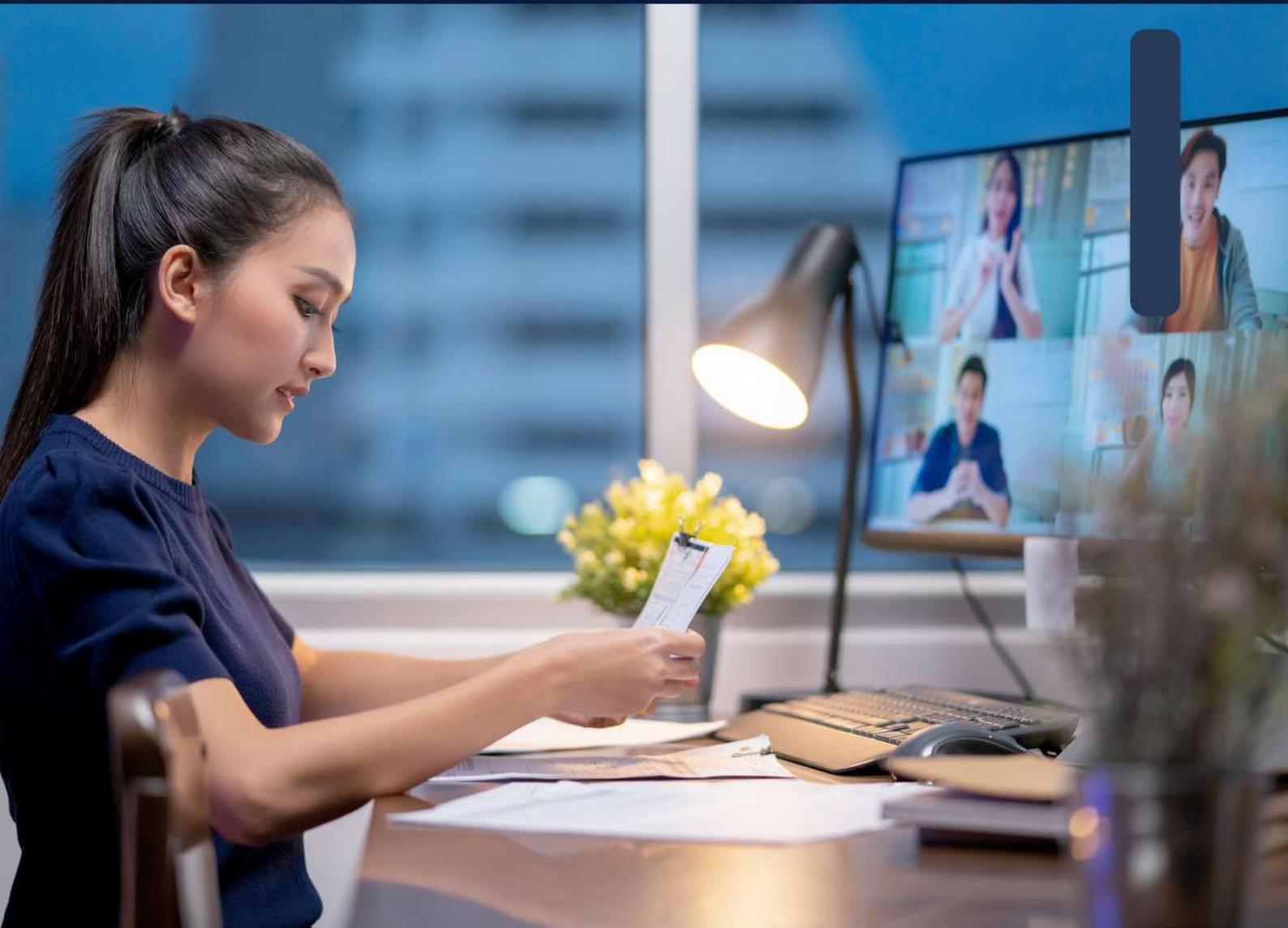


Java SE 8 Programmer IIe



Online Course



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Course Modules

1. Java Class Design

- Implement encapsulation
- Implement inheritance includg visibility modifiers & composition
- Implement polymorphism
- Override hashCode, equals, & toString methods from Object class
- Create and use singleton classes and immutable classes
- Develop code that uses static keyword on initialize blocks, rtc.,

2. Advanced Java Class Design

- Develop code that uses abstract classes and methods
- Develop code that uses the final keyword
- Create inner classes incld static inner class, local class, nested etc
- Use enumrtd typs including mthds, & constrctrs in an enum type
- Develop code that declares, implements and/or extnds interfaces
- Create and use Lambda expressions



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3. Generics and Collections

- Create and use a generic class
- Create & use ArrayList, TreeSet, TreeMap & 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

4. Lambda Built-in Functional Interfaces

- Use the built-in interfaces include in the java.util.function package
- 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

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5. Java Stream API

- Develop code to extract data from an object using peek() & map()
- Search for data by using search methods of the Stream classes
- Develop code that uses the Optional class
- Develop code that uses Stream data methods & calculation methods
- Sort a collection using Stream API
- Use flatMap() methods in the Stream API



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6. 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

7. Use Java SE 8 Date/Time API

- Create and manage date-based and time-based events
- Work with dates & times across & manage changes
- Define and manage date-based and time-based events

8. Java I/O Fundamentals

- Read and write data from the console
- Use BufferedReader, BufferedWriter, File, FileReader, etc.,

9. 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, etc.,
- Use Stream API with NIO.2



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10. Java Concurrency

- Create worker threads using Runnable, Callable & ExecutorService
- Identify potential threading problems among deadlock, starvation, etc
- Use synchronized keyword & java.util.concurrent.atomic package
- Use java.util.concurrent collections and classes
- Use parallel Fork/Join Framework
- Use parallel Streams including reduction, decomposition, etc.,

11. Building Database Applications with JDBC

- Describe the interfaces that make up the core of the JDBC API
- Identify the components required to connect to a database
- Submit queries and read results from the database

12. Localization

- Read and set the locale by using the Locale object
- Create and read a Properties file
- Build a resource bundle for each locale & load a resource bundle



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13. Assume the following:

- Missing package and import statements
- No file or directory path names for classes:
 - o All classes are in one file
 - o Each class is contained in a separate file, & all files are in 1 directory
- Unintndd line breaks: Sample code might have unintndd line breaks
- Code fragments: A code fragment is a small section of source code
- Descriptive comments: Take descriptive comments



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