uCertify

Course Outline

Java 9.0 to 13.0

04 Aug 2025

1. Exercises, Quizzes, Flashcards & Glossary

   Number of Questions
2. Expert Instructor-Led Training
3. ADA Compliant & JAWS Compatible Platform
4. State of the Art Educator Tools
5. Award Winning Learning Platform (LMS)
6. Chapter & Lessons

   Syllabus

   Chapter 1: Preface

   Chapter 2: Insight of Versioning

   Chapter 3: What's New in Java 9

   Chapter 4: Understanding JDK 10-Step towards JDK 11

   Chapter 5: Dive in JDK 11

   Chapter 6: Migrating the Code

   Chapter 7: Working with JShell

   Chapter 8: Reactive Programming and Concurrency Updates

   Chapter 9: What's New in Java12

   Chapter 10: Introduction to Java 13

   Videos and How To

1. Expert Instructor-Led Training

uCertify uses the content from the finest publishers and only the IT industry's finest instructors. They have a minimum of 15 years real-world experience and are subject matter experts in their fields. Unlike a live class, you can study at your own pace. This creates a personal learning experience and gives you all the benefit of hands-on training with the flexibility of doing it around your schedule 24/7.

2. ADA Compliant & JAWS Compatible Platform

uCertify course and labs are ADA (Americans with Disability Act) compliant. It is now more accessible to students with features such as:

- Change the font, size, and color of the content of the course
- Text-to-speech, reads the text into spoken words
- Interactive videos, how-tos videos come with transcripts and voice-over
- Interactive transcripts, each word is clickable. Students can clip a specific part of the video by clicking on a word or a portion of the text.

JAWS (Job Access with Speech) is a computer screen reader program for Microsoft Windows that reads the screen either with a text-to-speech output or by a Refreshable Braille display. Student can easily navigate uCertify course using JAWS shortcut keys.

3. State of the Art Educator Tools

uCertify knows the importance of instructors and provide tools to help them do their job effectively. Instructors are able to clone and customize course. Do ability grouping. Create sections. Design grade scale and grade formula. Create and schedule assessments. Educators can also move a student from self-paced to mentor-guided to instructor-led mode in three clicks.

4. Award Winning Learning Platform (LMS)

uCertify has developed an award winning, highly interactive yet simple to use platform. The SIIA CODiE Awards is the only peer-reviewed program to showcase business and education technology's finest products and services. Since 1986, thousands of products, services and solutions have been recognized for achieving excellence. uCertify has won CODiE awards consecutively for last 7 years:

- **2014**
    1. Best Postsecondary Learning Solution

- **2015**
    1. Best Education Solution

2. Best Virtual Learning Solution
3. Best Student Assessment Solution
4. Best Postsecondary Learning Solution
5. Best Career and Workforce Readiness Solution
6. Best Instructional Solution in Other Curriculum Areas
7. Best Corporate Learning/Workforce Development Solution

- **2016**
    1. Best Virtual Learning Solution
    2. Best Education Cloud-based Solution
    3. Best College and Career Readiness Solution
    4. Best Corporate / Workforce Learning Solution
    5. Best Postsecondary Learning Content Solution
    6. Best Postsecondary LMS or Learning Platform
    7. Best Learning Relationship Management Solution

- **2017**
    1. Best Overall Education Solution
    2. Best Student Assessment Solution
    3. Best Corporate/Workforce Learning Solution
    4. Best Higher Education LMS or Learning Platform

- **2018**
    1. Best Higher Education LMS or Learning Platform
    2. Best Instructional Solution in Other Curriculum Areas
    3. Best Learning Relationship Management Solution

- **2019**
    1. Best Virtual Learning Solution
    2. Best Content Authoring Development or Curation Solution
    3. Best Higher Education Learning Management Solution (LMS)

- **2020**

1. Best College and Career Readiness Solution
2. Best Cross-Curricular Solution
3. Best Virtual Learning Solution

5. Chapter & Lessons

uCertify brings these textbooks to life. It is full of interactive activities that keeps the learner engaged. uCertify brings all available learning resources for a topic in one place so that the learner can efficiently learn without going to multiple places. Challenge questions are also embedded in the chapters so learners can attempt those while they are learning about that particular topic. This helps them grasp the concepts better because they can go over it again right away which improves learning.

Learners can do Flashcards, Exercises, Quizzes and Labs related to each chapter. At the end of every lesson, uCertify courses guide the learners on the path they should follow.

Syllabus

Chapter 1: Preface

Chapter 2: Insight of Versioning

- Introduction
- Project Green: the beginning
- Versions of Java
- Time-based release version
- Conclusion
- Questions

Chapter 3: What’s New in Java 9

- Introduction
- Project Jigsaw
- Compact profiles
- Java Platform Module System
- Explore module
- Module types
- Listing JDK modules
- Java module graph
- Declaring the module
- Download Java 9
- Create your first Java module
- Compiling module
- Executing module
- Working with multiple modules
- Working with Eclipse
- Working with Apache NetBeans
- Java Enhancement Proposals (JEP) in JSE 9.0

- JEP 102: Process API updates
- JEP 110: HTTP/2 Client (Incubator)
- JEP 158: unified JVM logging
- JEP 213: Milling Project Coin
- JEP 214: remove GC combinations deprecated in JDK 8
- JEP 220: modular run-time images
- JEP 221: new Doclet API
- JEP 222: JShell (Read-Eval-Print Loop)
- JEP 238: Multi release JAR file
- JEP 248: make G1 the default garbage collector
- JEP 251: multi-resolution images
- JEP 254: compact Strings
- JEP 282: jlink, the Java linker
- JEP 289: deprecate Applet API
- JEP 291:deprecate the concurrent mark sweep garbage collector
- Conclusion

Chapter 4: Understanding JDK 10-Step towards JDK 11

- Introduction

- Downloading JDK 10
- JEP 286: local variable type inference
- Compile time safety
- Polymorphism
- Working with collections & arrays
- Working with traditional for loop
- Working with for each loop
- Working with Java streams
- Working with anonymous class
- Working with try-with-resources
- JEP 296: consolidate the JDK forest into a single repository
- JEP 304: Garbage collector interface
- JEP 307: Parallel full GC for G1
- JEP 310: Application class data sharing
- JEP 313: Remove the native-header generation tool (javah)
- JEP 314: Additional Unicode language-tag extensions
- JEP 316: Heap allocation on alternate memory devices
- JEP 317: experimental Java-based compiler

- JEP 319: root certificates
- JEP 322: time-based release versioning
- API
- System properties
- Removed features and options
- Deprecated features and options
- Conclusion
- Questions

Chapter 5: Dive in JDK 11

- Introduction
- Downloading JDK11
- JEP 181: nest-based access control
- Change in the reflective access
- JEP 309: Dynamic class-file constants
- JEP 315: Improve Aarch64 intrinsic
- JEP 318: Epsilon: no-op garbage collector
- How to implement no-op GC
- JEP 320: remove the Java EE and CORBA modules

- JEP 321: HTTP client (standard)
- JEP 323: local-variable syntax for lambda parameters
- JEP 324: Key agreement with Curve25519 and Curve 448
- API changes
- JEP 327: Unicode 10
- JEP 328: Flight recorder
- JEP 329: ChaCha20 and Poly1305 cryptographic algorithms
- JEP 330: Launch Single-File Source-Code Programs
- Working with Shebang files
- JDK 332: Transport Layer Security (TLS) 1.3
- JEP 333: ZGC: scalable low-latency garbage collector (experimental)
- Pointer colouring
- Multimapping
- Marking
- Relocation
- Enabling the ZGC
- JEP 335: deprecate the Nashorn JavaScript Engine
- Command line tool jjs

- Working programmatically with Nashorn
- JEP 336: deprecate the Pack200 tools and API
- Conclusion
- Questions

Chapter 6: Migrating the Code

- Introduction
- Unnamed module
- Jdeps tool
- Override module configuration
- --add-reads
- --add-exports
- --opens-add
- Working with jLink
- Multi-release JAR file
- Conclusion
- Questions

Chapter 7: Working with JShell

- Introduction
- Launching JShell
- Writing the code in JShell
- Adding classpath to JShell
- Forward references in method declaration
- Working with commands in JShell
- Editors
- Internal Shell editing
- External editor
- Feedback in JShell
- Setting up the feedback:
- Conclusion
- Questions

Chapter 8: Reactive Programming and Concurrency Updates

- Introduction
- The reactive manifesto
- Resilient
- Responsive

- Elastic
- Message driven
- Journey to be reactive
- Pull and push model
- Reactive streams
- Reactive stream implementation for Java
- Publish-subscribe mechanism
- Publisher
- Subscriber
- Subscription
- The processor
- Working of publisher-subscriber
- Situation 1: normal publishing and subscription of items
- Situation 2: cancellation of the items
- Situation 3: Exception raised due to some reason
- Working of publisher-processor-subscriber
- Backpressure
- Updates in concurrency

- Conclusion
- Questions

Chapter 9: What’s New in Java12

- Introduction
- Downloading Java12
- JEP 189: Shenandoah: A low-pause-time garbage collector
- JEP 230: Microbenchmark suit
- Microbenchmark concerns
- JEP 325: Switch expression
- Change in expression label by using -> symbol
- Multiple case labels
- Returning values from switch
- JEP 344: JVM Constant API
- JEP 340: One AArch64 Port, not two
- JEP 341: Default CDS archives
- JEP 344: Abortable mixed collections for G1
- JEP 346: Promptly return unused committed memory from G1
- New features and enhancements

- Removed features and options
- Conclusion
- Questions

Chapter 10: Introduction to Java 13

- Introduction
- Downloading Java 13
- JEP 350: Dynamic CDS archive
- JEP 351:ZGC: uncommit unused memory
- JEP 353: Reimplement the legacy socket API
- JEP 354: Switch expressions (preview)
- Yield statement in switch
- JEP 355: Text blocks (preview)
- Writing HTML
- Writing SQL query string
- Polyglot language example
- Conclusion
- Questions

You can’t stay away! Get in touch with our team to

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