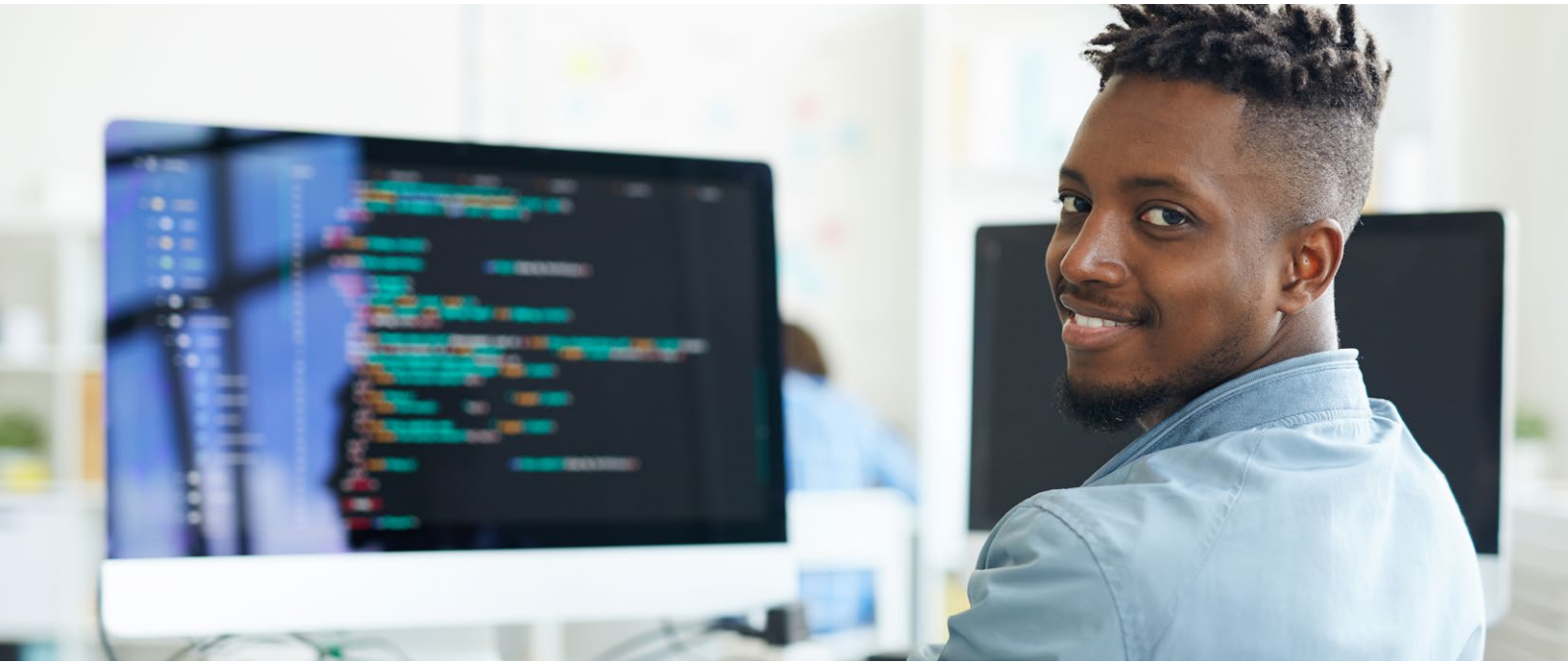
ORACLE Certification Program

Oracle Java

Java SE 11 Programmer I & Java SE 11 Programmer II Certification Overview and Sample Questions



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Introduction

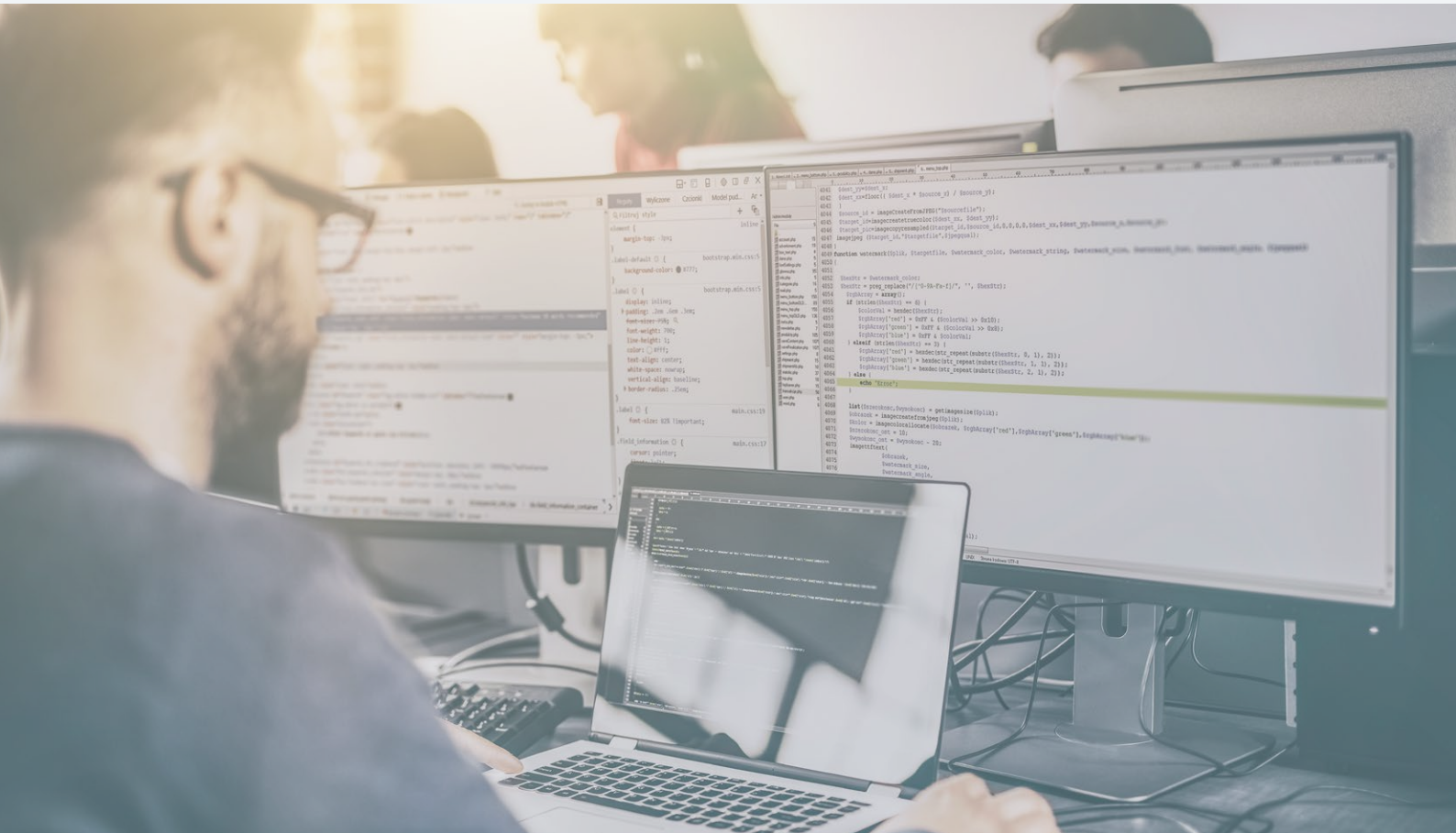
Being a Professional Java Developer, means you have the skills covered in both exams – Java SE 11 Programmer I and Java SE 11 Programmer II. The Java Developer certification at Oracle has always been to present the full stable of skills and knowledge through the Oracle Certified Professional credential.

The Programming I course and Java SE 11 Programmer I exam focus on fundamental Java topics that lay the foundation for a Java Developer job role.

The Programming II course and Java SE 11 Programmer II exam provide more-advanced layers of detail on previous topics and go into new advanced topics such as lambdas and modularity.

Certification Details

- **Credential Awarded:** Oracle Certified Professional Java SE 11 Developer
- **Exam Number:** 1Z0-815 & 1Z0-816
- **Target Audience:** Java Developers
- **Platform:** Delivered via Pearson VUE
- **Exam Duration:** 180 minutes
- **Number of Questions:** 80
- **Passing Score:** 63%
- **Digital Badge:** 2019 Oracle Certified Professional Java SE 11 Developer



Certification Benefits

What IT Certification Offers

Recognition
of having required skills

73%
Experienced a Greater Demand for Their Skills

January 2019 issue of Certification Magazine's annual salary survey

Opportunities
through new skills

65%
Received Positive Impact on Professional Image

January 2018 issue of Certification Magazine's annual salary survey

Confidence and Respect
by peers and management

71%
Said Certification was a Key Factor in Recent Raise

January 2019 issue of Certification Magazine's annual salary survey

The kind of longevity suggests that earning and maintaining a certification can keep you moving forward in your career, perhaps indefinitely.

What Oracle Certification Offers

By becoming a certified **Java SE 11 Developer**, you demonstrate proficiency in Java software developing recognized by a wide range of worldwide industries.

A Java certification is a validation of your skills. With a certification in-hand, you have a clear way to show employers how and why you are prepared for the job. You also gain the knowledge you need to earn more credibility, perform better in your daily job, and lead your team and company forward.

Oracle Certification Innovation with Digital Badging

Certification that Signifies Your Readiness to Perform

Earned badges represent recognized skills and capabilities

Display Your Oracle Certification Badge

You've earned it. Get the recognition you deserve.

2019 Oracle Certified Professional
Java SE 11 Developer

Display Your Achievement

A secure way to display and share your certification achievement

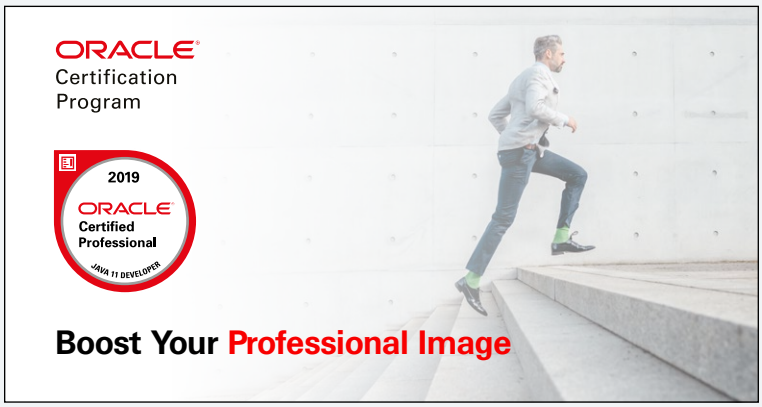
Modern Representation of Skills Tied to Real Time Job Markets

View from your profile and apply to jobs that are matched to your skills; based on location, title, employers or salary range

Use Your Badge to Apply for Jobs

Benefits

Oracle Certification Signifies a Candidates Readiness to Perform



- Industry Recognized
- Credible
- Role Based
- Product Focused Across Database, Applications, Cloud, Systems, Middleware and Java
- Globally one of the top 10 certification programs available

Learn More: education.oracle.com/certification

Exam Preparation

By passing this exam, a certified individual proves fluency in and solid understanding of the skills required to be a Java software developer.

Recommendation to successfully prepare for **Java SE 11 Programmer I 1Z0-815** & **Java SE 11 Programmer II 1Z0-816** certification are:

You should have:

- Minimum of 12 to 18 months of experience with Java.
- Knowledge of general programming concepts and techniques.
- Experience with any programming language.

You would benefit in having experience in:

- Writing programs in Java.
- Use of Java IDE.
- Package and deploy Java apps.

Attend Recommended Oracle Training:

The Java SE Programming I and Java SE Programming II courses are currently available, and are terrific tools to help you prepare not only for your exam, but for your job as a Java Developer.

Exam Topics (Java SE 11 Programmer I – 1Z0-815)

Understanding Java Technology and environment

- Describe Java Technology and the Java development environment
- Identify key features of the Java language

Creating a Simple Java Program

- Create an executable Java program with a main class
- Compile and run a Java program from the command line
- Create and import packages

Working With Java Primitive Data Types and String APIs

- Declare and initialize variables (including casting and promoting primitive data types)
- Identify the scope of variable
- Use local variable type inference
- Create and manipulate Strings
- Manipulate data using the StringBuilder class and its methods

Using Operators and Decision Constructs

- Use Java operators including the use of parenthesis to override operator precedence
- Use Java control statements including if, else, and switch
- Create and use do/while, while, for and for each loops, including nested loops, use break and continue statements

Working with Java Arrays

- Declare, instantiate, initialize and use a one-dimensional array
- Declare, instantiate, initialize and use two-dimensional array

Describing and Using Objects and Classes

- Declare and instantiate Java objects, and explain objects' lifecycles (including creation, dereferencing by reassignment, and garbage collection)
- Define the structure of a Java class
- Read or write to object fields

Creating and Using Methods

- Create methods and constructors with arguments and return values
- Create and invoke overloaded methods
- Apply the static keyword to methods and fields

Applying Encapsulation

- Apply access modifiers
- Apply encapsulation principles to a class

Exam Topics (Java SE 11 Programmer I – 1Z0-815)

Reusing Implementations Through Inheritance

- Create and use subclasses and superclasses
- Create and extend abstract classes
- Enable polymorphism by overriding methods
- Utilize polymorphism to cast and call methods, differentiating object type versus reference type
- Distinguish overloading, overriding, and hiding

Programming Abstractly Through Interfaces

- Create and implement interfaces
- Distinguish class inheritance from interface inheritance including abstract classes
- Declare and use List and ArrayList instances
- Understanding lambda Expressions

Handling Exception

- Describe the advantages of Exception handling and differentiate among checked, unchecked exceptions, and Errors
- Create try-catch blocks and determine how exceptions alter program flow
- Create and invoke a method that throws an exception

Understanding Modules

- Describe the Modular JDK
- Declare modules and enable access between modules
- Describe how a modular project is compiled and run

Exam Topics (Java SE 11 Programmer II – 1Z0-816)

Java Fundamentals

- Create and use final classes
- Create and use inner, nested and anonymous classes
- Create and use enumerations

Exception Handling and Assertions

- Use try-with-resources construct
- Create and use custom exception classes
- Test invariants by using assertions

Java Interfaces

- Create and use interfaces with default methods
- Create and use interfaces with private methods

Generics and Collections

- Use wrapper classes, auto-boxing and auto-unboxing
- Create and use generic classes, methods with diamond notation and wildcards
- Describe Collections Framework and use key collection interfaces
- Use Comparator and Comparable interfaces
- Create and use convenience methods for collections

Functional Interface and Lambda Expressions

- Define and write functional interfaces
- Create and use lambda expressions including statement lambdas, local-variable for lambda parameters

Java Stream API

- Describe the Stream interface and pipelines
- Use lambda expressions and method references

Built-in Functional Interfaces

- Use interfaces from java.util.function package
- Use core functional interfaces including Predicate, Consumer, Function and Supplier
- Use primitive and binary variations of base interfaces of java.util.function package

Lambda Operations on Stream

- Extract stream data using map, peek and flatMap methods
- Search stream data using search findFirst, findAny, anyMatch, allMatch and noneMatch methods
- Use Optional class
- Perform calculations using count, max, min, average and sum stream operations
- Sort a collection using lambda expressions
- Use Collectors with stream, including the groupingBy and partitioningBy operation

Exam Topics (Java SE 11 Programmer II – 1Z0-816)

Migration to a Modular Application

- Migrate the application developed using a Java version prior to SE 9 to SE 11 including top-down and bottom-up migration, splitting a Java SE 8 application into modules for migration
- Use jdeps to determine dependencies and identify way to address the cyclic dependencies

Services in a Modular Application

- Describe the components of Services including directives
- Design a service type, load services using ServiceLoader, check for dependencies of the services including consumer and provider modules

Concurrency

- Create worker threads using Runnable, Callable and use an ExecutorService to concurrently execute tasks
- Use java util concurrent collections and classes including CyclicBarrier and CopyOnWriteArrayList
- Write thread-safe codae
- Identify threading problems such as deadlocks and livelocks

Parallel Stream

- Develop the code that use parallel stream
- Implement decomposition and reduction with stream

I/O (Fundamentals and NIO2)

- Read data from and write console and file data using I/O stream
- Use I/O Stream to read and write files
- Read and write objects by using serialization
- Use Path interface to operate on file and directory paths
- Use Files class to check, delete, copy or move a file or directory
- Use Stream API with Files

Secure Coding in Java SE Application

- Preventing Denial of Service in Java applications
- Securing confidential information in Java application
- Implementing Data integrity guidelines-injections and inclusion and input validation
- Preventing external attack of the code by limiting Accessibility and Extensibility, properly handling input validation, and mutablity
- Securing constructing sensitive objects
- Securing Serialization and Deserialization

Database Applications with JDBC

- Connect to databases using JDBC URLs and DriverManager
- Use PreparedStatement to perform CRUD operations
- Use PreparedStatement and CallableStatement APIs to perform database operations

Localization

- Use Locale class
- Use resource bundles
- Format messages, dates, and numbers with Java

Exam Topics (Java SE 11 Programmer II – 1Z0-816)

Annotations

- Describe the purpose of annotations and typical usage patterns
- Apply annotations to classes and methods
- Describe commonly used annotations in the JDK
- Declare custom annotations

Sample Questions

1. Given the code fragment:

```
Stream<Integer> numStream = Stream.of(10, 20, 30);
numStream.map(n -> n + 10).peek(s -> System.out.print(s));
numStream.forEach(s -> System.out.println(s));
```

What it the result?

A.
```
203040
102030
```
B.
```
102030
203040
```
C.
```
102030
102030
```
D. An exception is thrown at runtime.

2. Given the code fragment:

```
List<String> strList = List.of("A", "B", "C", "D", "E", "F", "G", "H");
Spliterator<String> part1 = strList.spliterator().trySplit();
```

Which code fragment prints ABCD?

A. `part1.tryAdvance(s -> System.out.print(s));`
B. `part1.trySplit(s -> System.out.print(s))`
C. `part1.forEachRemaining(s -> System.out.print(s));`
D. `part1.forEach(s -> System.out.print(s));`

3. Given the code fragment:

```
10. var lst = List.of(1, 2, 3, 4);
11. lst.replaceAll(x -> x + 100);
12. System.out.println("-Completed-");
```

Which action enables to print -Completed-?

A. Replacing line 10, with `List<Integer> lst = List.of(1,2,3,4);`
B. Replacing line 11, with `lst.replaceAll(x = x + 100);`
C. Replacing line 10, with `var lst = Arrays.asList(1, 2, 3, 4);`
D. Replacing line 11, with `lst.forEach(x -> x + 100);`

Answers
1. **D**; *2.* **C**; *3.* **C**;

Sample Questions

4. Which two are guidelines for preventing denial of service attacks?

A. Release resources in all cases.
B. Resource limit checks should not suffer from numeric overflow.
C. Purge sensitive information from exceptions.
D. Validate file formats before processing untrusted files.
E. Make `public static` fields `final`.
F. Use mutable classes whenever possible.

5. Given:

```
public class Client {
   static void doCalc(byte... a)  {
      System.out.print("byte...");
   }
   static void doCalc(long a, long b) {
      System.out.print("long, long");
   }
   static void doCalc(Byte s1, Byte s2) {
      System.out.print("Byte, Byte");
   }
   public static void main (String[] args) {
      byte b = 5;
      doCalc(b, b);
   }
}
```

A. `byte...`
B. `long, long`
C. `Byte, Byte`
D. compilation error

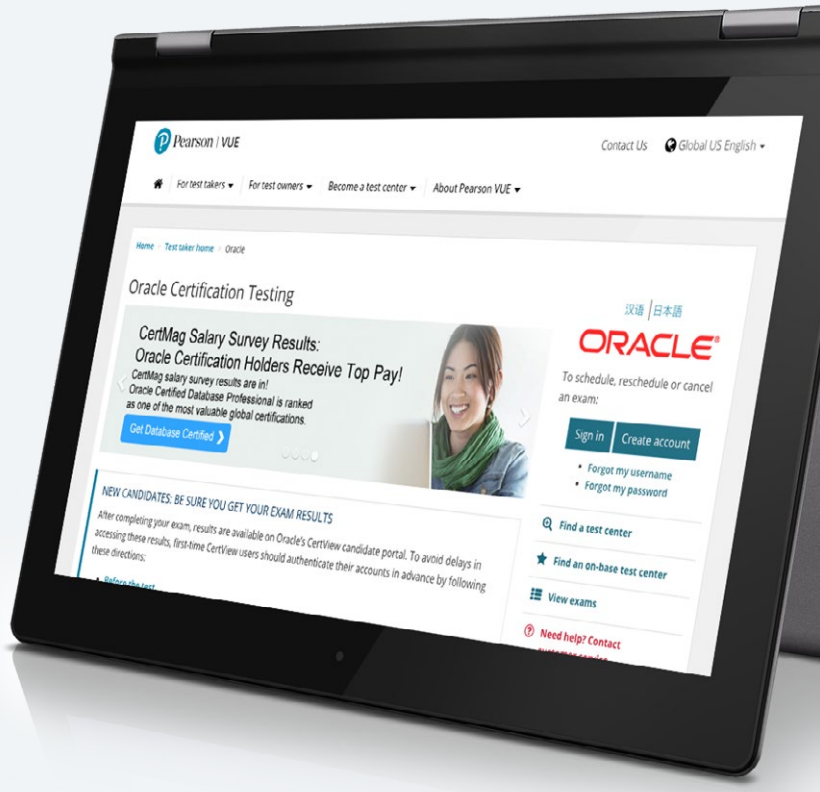
Answers
4. **A | B** ; *5.* **C**

Exam Registration Process

Oracle exams are delivered through the independent company Pearson VUE.
To create a login, go to www.pearsonvue.com/oracle.

Exam Score

After you have taken your exam,
view your results by visiting CertView.



Oracle Certification Program Candidate Agreement

In order to take your Oracle certification, you will need to agree to the Oracle Certification Program Candidate Agreement. Please review this document by going here.

Oracle Certification Program Guidelines

Learn more about Oracle Certification policies here.

This certification overview and sample questions were created in February 2019. The content is subject to change, please always check the web site for the most recent information regarding certifications and related exams: education.oracle.com/certification