Core Java

Strings and Immutability

Why is String immutable?

Difference between StringBuffer and StringBuilder

Why is String thread-safe in Java?

What is StringJoiner in Java 8?

Exceptions and Error Handling

What are checked and unchecked exceptions?

Explain exception handling.

What is the difference between throw and throws?

Overriding exception rules

What is ConcurrentModificationException?

Collections and Data Structures

How does HashMap work internally?

What is the difference between HashMap and ConcurrentHashMap?

Give an example of a thread-safe collection in Java.

Difference between HashSet and TreeSet

Will ConcurrentModificationException occur with HashTable?

What is ComputeIfAbsent in ConcurrentHashMap?

How do locks work in ConcurrentHashMap?

Explain fail-fast vs fail-safe iterators.

Multithreading and Concurrency

How does multithreading work in Java?

Why do wait and notify methods belong to the Object class?

What is a deadlock in Java and how can it be prevented?

What is the Executor framework?

What is the Callable interface?

Explain the Future interface.

When should parallel stream be used in Java 8?

OOP Concepts and Design Patterns

What is the difference between an abstract class and an interface?

Difference between == and equals() method

Explain the SOLID design principles.

What is the difference between the Factory and Abstract Factory design pattern?

What is the Singleton pattern?

Explain method overloading and method overriding.

What is method hiding?

How is polymorphism used in your project?

Java 8 Features

What is a lambda expression and what is its syntax?

What is a functional interface?

What are the new features of Java 8?

Explain the Stream API.

What is the Optional class?

What is a method reference?

Explain intermediate and terminal operations in streams.

What is the difference between findFirst() and findAny() methods?

General Java Concepts

What is static in Java?

Can we override static methods?

Why is Java not fully object-oriented?

Explain the memory structure in Java.

Is Java pass-by-value or pass-by-reference?

What is serialization and what is its purpose?

How does garbage collection work in Java?

Explain reflection in Java.

Advanced Java

Spring and Spring Boot

What is IOC and Dependency Injection?

Explain the Spring MVC flow.

What are the advantages of using Spring Boot over Spring?

What is the @SpringBootApplication annotation?

What is the difference between @Controller and @RestController?

What are the different bean scopes in Spring?

Explain autowiring in Spring.

What is Spring Boot Actuator?

What is the Spring Web dependency?

How do you handle exceptions in a Spring Boot application?

How do you configure profiles in Spring Boot?

JPA and Hibernate

What is JPA and how do you use it?

Explain lazy loading and eager loading in Hibernate.

What is the difference between get() and load() methods in Hibernate?

How do you achieve second-level caching in Hibernate?

What are the advantages of Hibernate?

Web Technologies

Servlets and Web Services

What is a Servlet?

Difference between GenericServlet and HttpServlet

What are REST and RESTful web services?

What is ResponseEntity in Spring?

HTTP and Security

What is HTTP and how does it work?

What is HTTPS?

How do you secure a web application?

What are OAuth and JWT?

What is content negotiation?

Agile and Methodologies

Agile Methodology

What is Agile methodology?

What is the difference between Agile and Scrum?

How do you use Agile in your projects?

Miscellaneous

Database and SQL

What are ACID properties in databases?

What is a deadlock in databases and how can it be prevented?

What is normalization in databases?

What is a primary key and a unique key?

What is a foreign key?

What is a trigger in a database?

How do you measure database performance?

Testing and Tools

What is JUnit and how does it work?

What is Mockito?

How do you use SonarQube for code quality?

What tools do you use for checking logs?

Miscellaneous Concepts

How do you detect memory leaks in Java?

What is the use of the Volatile keyword?

Explain shallow copy vs deep copy.

How do you create a deep copy of an object in Java?

What is a marker interface?

Programming Tasks and Examples

Code Examples

Given two arrays, find common elements and unique elements.

Sum all the even numbers from a given array using Java 8.

Count the occurrences in a given ArrayList using Java 8.

Check if all elements are divisible by 2 in a list using allMatch().

Check if at least one element is divisible by 2 in a list using anyMatch().

Reverse a given number and provide two solutions.

Find the top 3 highest salary employees from a list using Java 8.

Remove duplicates from an ArrayList using Java 8.

Convert a List to a Set and explain what happens next.

Commonly Asked Questions Breakdown

Very Common: Frequently asked in almost every Java interview.

Common: Asked in many Java interviews, but not always.

Less Common: Rarely asked, but good to know for comprehensive preparation.

Very Common Topics

String immutability

Checked vs unchecked exceptions

Multithreading and concurrency

Lambda expressions and Stream API in Java 8

Spring and Spring Boot basics

JPA and Hibernate basics

Agile methodology

Common Topics

OOP concepts (abstract class vs interface, SOLID principles)

Exception handling and specific exceptions

Collections framework (HashMap, ConcurrentHashMap)

HTTP and web security (HTTP vs HTTPS, OAuth, JWT)

Testing frameworks (JUnit, Mockito)

Database fundamentals (ACID, normalization)

Less Common Topics

Specific design patterns

Deep vs shallow copy

Advanced multithreading concepts (Executer framework, Future interface)

Specific tools (SonarQube, logging tools)

Detailed Spring concepts (bean scopes, Spring Boot annotations)