Java Stream API – Interview Questions & Answers

1. What is a Stream in Java?

Stream is a pipeline for processing data in a functional and lazy manner without storing it.

2. Difference between Stream and Collection?

Collection stores data, Stream processes data and cannot be reused.

3. What is Lazy Evaluation?

Stream operations are not executed until a terminal operation is called.

4. Intermediate vs Terminal operations?

Intermediate returns Stream and is lazy, Terminal triggers execution.

5. Difference between filter and map?

filter selects elements, map transforms elements.

6. Difference between map and flatMap?

map produces one output per input, flatMap flattens nested streams.

7. What does reduce do?

Reduces stream elements into a single value using BinaryOperator.

8. reduce vs collect?

reduce returns immutable value, collect returns mutable container.

9. Why streams are single-use?

Because terminal operation closes the stream.

10. What is parallelStream?

It divides data into multiple threads using ForkJoinPool for parallel execution.

11. Is parallelStream always faster?

No, it is beneficial only for large data and independent operations.

12. Difference between forEach and forEachOrdered?

forEach does not guarantee order in parallel stream, forEachOrdered does.

13. Are streams thread-safe?

Stream pipeline is thread-safe, shared mutable state is not.

14. How to handle exceptions in stream?

Wrap checked exceptions inside RuntimeException.

15. Why primitive streams are faster?

They avoid boxing and unboxing overhead.