

ORACLE®

Lesson 2-2: Elements of a Stream

Stream Overview

At The High Level

- Abstraction for specifying aggregate computations
 - Not a data structure
 - Can be infinite
- Simplifies the description of aggregate computations
 - Exposes opportunities for optimisation
 - Fusing, laziness and parallelism

Stream Overview

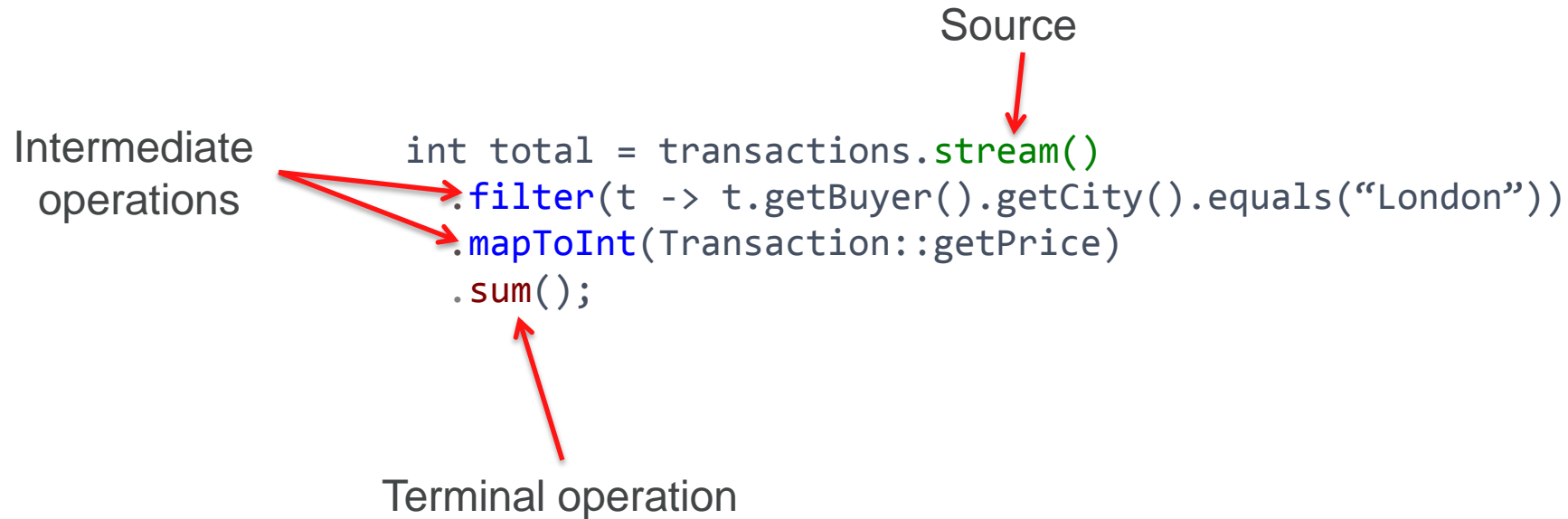
Pipeline

- A stream pipeline consists of three types of things
 - A source
 - Zero or more intermediate operations
 - A terminal operation
 - Producing a result or a side-effect



Stream Overview

Example



Stream Terminal Operations

- The pipeline is only evaluated when the terminal operation is called
 - All operations can execute sequentially or in parallel
 - Intermediate operations can be merged
 - Avoiding multiple redundant passes on data
 - Short-circuit operations (e.g. `findFirst`)
 - Lazy evaluation
 - Stream characteristics help identify optimisations
 - `DISTINCT` stream passed to `distinct()` is a no-op

Section 2

Summary

- Think of a Stream as like a pipeline
- Processes data from the source
 - No explicit loop used
 - Which means a Stream can easily be made parallel

ORACLE®