Java Parallel Streams Internals: Order of Results Overview

Douglas C. Schmidt

d.schmidt@vanderbilt.edu

www.dre.vanderbilt.edu/~schmidt

Professor of Computer Science

Institute for Software Integrated Systems

Vanderbilt University

Nashville, Tennessee, USA

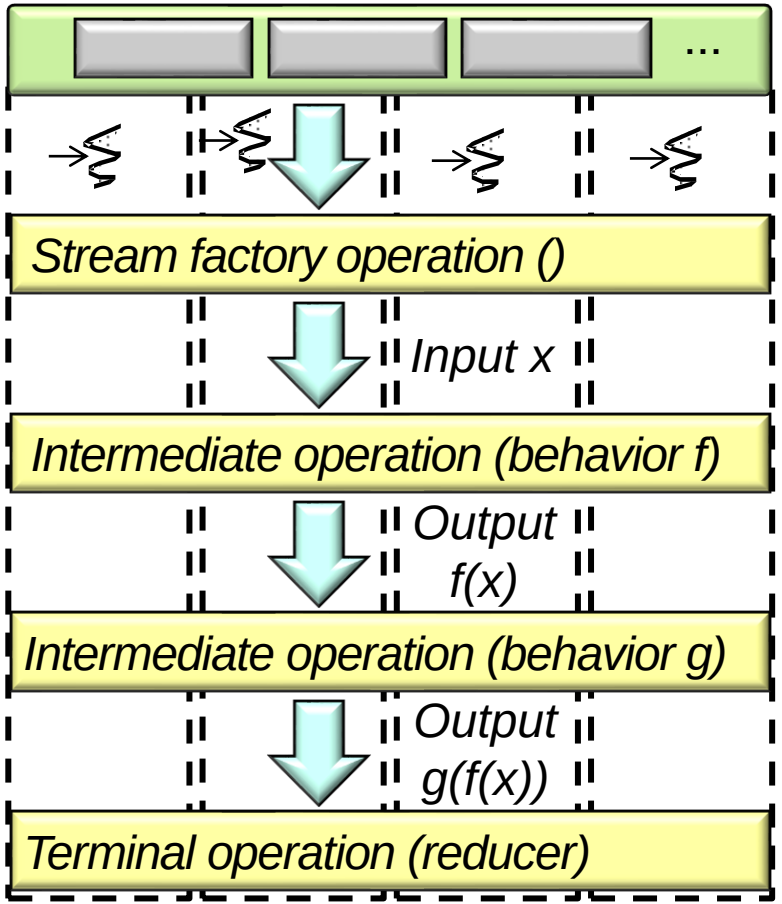
Learning Objectives in this Part of the Lesson

- Understand parallel stream internals, e.g.
  - Know what can change & what can't
    - Splitting, combining, & pooling mechanisms
    - Order of processing
    - Order of results
      - Overview

Java Parallel Stream Results Order

Java Parallel Stream Results Order

- The order of *results* in a parallel stream is more deterministic than processing order.

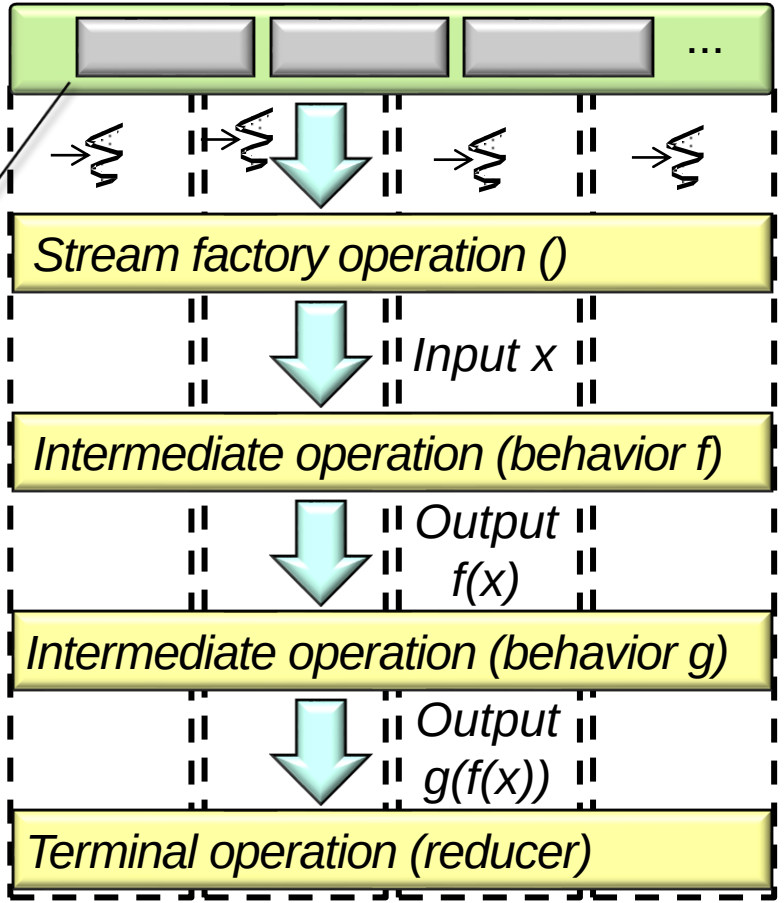


See en.wikipedia.org/wiki/Deterministic_algorithm

Java Parallel Stream Results Order

- The order of *results* in a parallel stream is more deterministic than processing order.
  - Programmers can control if results are presented in "encounter order" (EO)

EO is the order in which the stream source makes its elements available



See www.logicbig.com/tutorials/core-java-tutorial/java-util-stream/ordering

Java Parallel Stream Results Order

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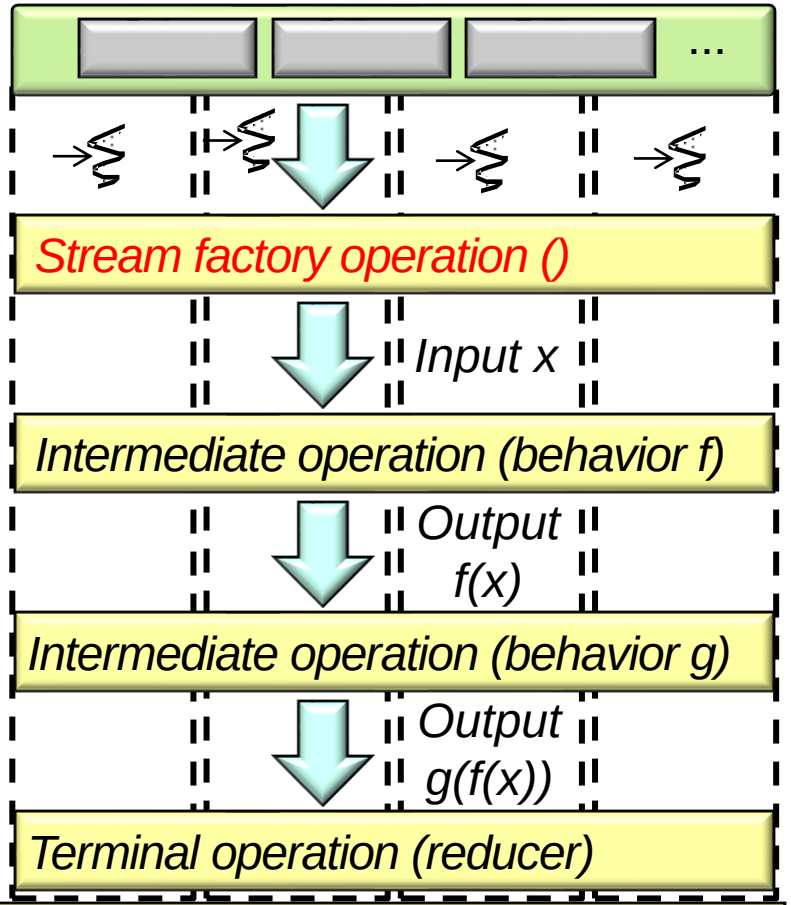
  - Programmers can control if results are presented in "encounter order" (EO)
    - EO is maintained if source is ordered & the aggregate operations used are obliged to maintain order



See developer.ibm.com/languages/java/articles/j-java-streams-3-brian-goetz/#eo

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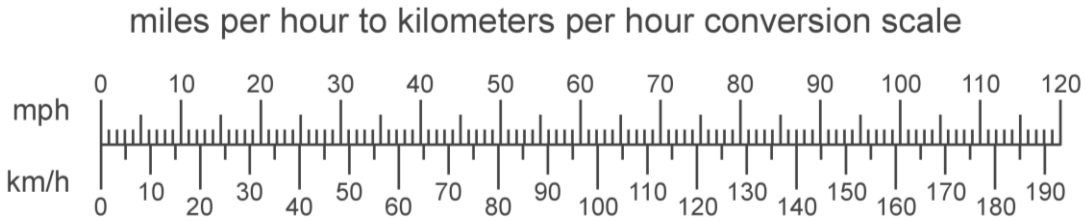
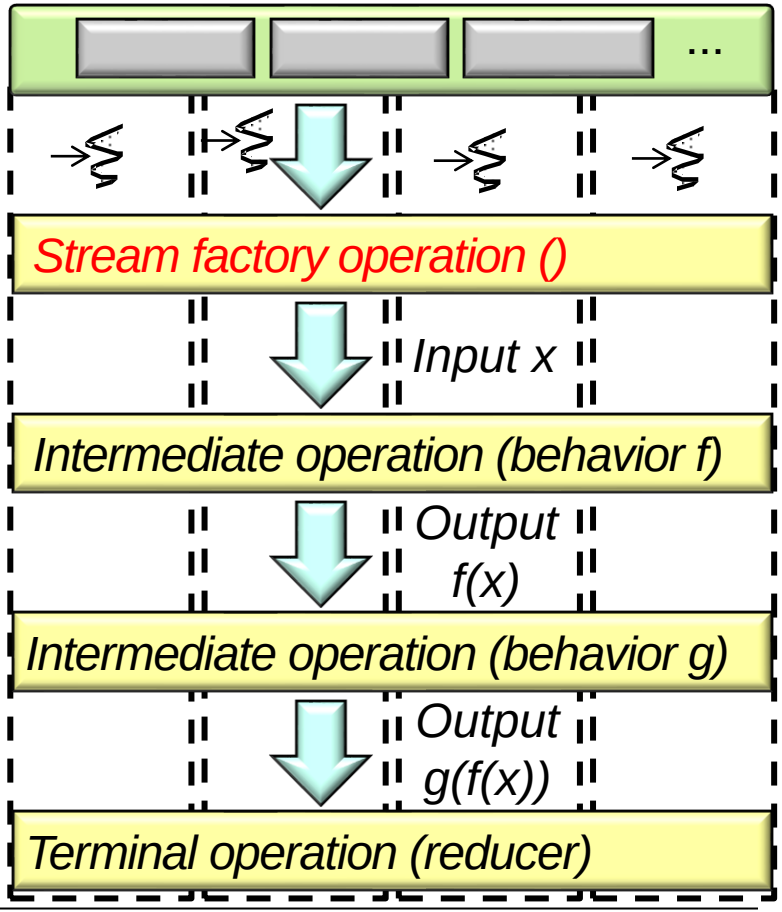
      - The semantics are the same whether the stream is parallel or sequential





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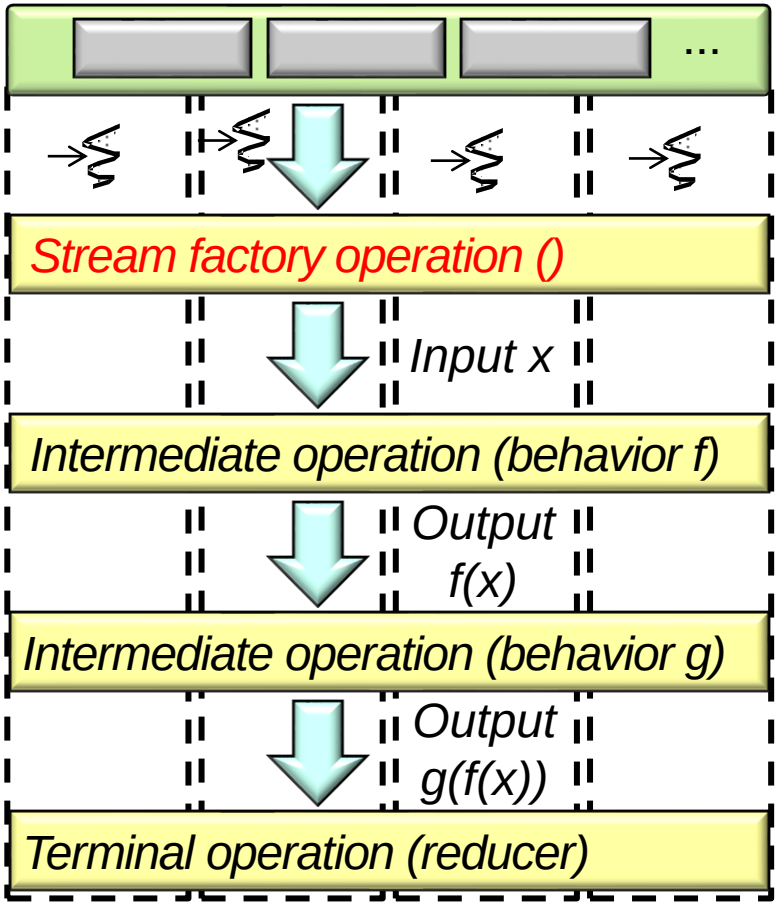
  - Programmers can control if results are presented in "encounter order" (EO)
    - EO is maintained if source is ordered & the aggregate operations used are obliged to maintain order
      - The semantics are the same whether the stream is parallel or sequential
    - Performance may differ, however



End of Java Parallel Stream Internals: Order of Results Overview