Visualizing Java Streams in Action

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Learning Objectives in this Part of the Lesson

- Understand Java streams structure & functionality, e.g.
  - Fundamentals of streams
  - Three streams phases
  - Operations that create a stream
  - Aggregate operations in a stream
  - Visualizing streams in action

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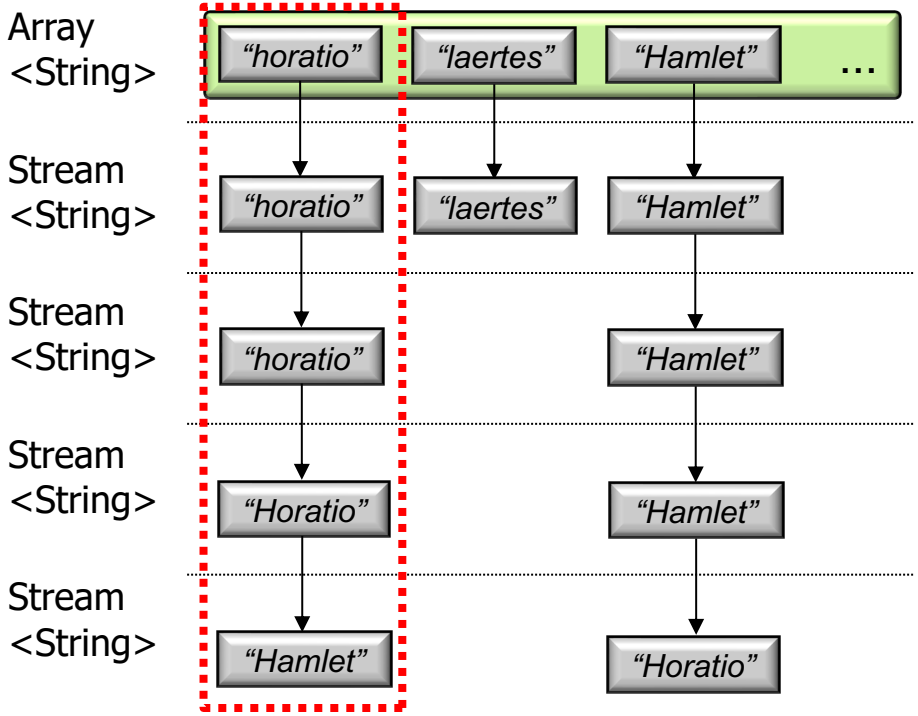
  - Three streams phases
  - Operations that create a stream
  - Aggregate operations in a stream
  - Visualizing streams in action
    - Be aware of how Java streams work in practice



Visualizing Streams in Action

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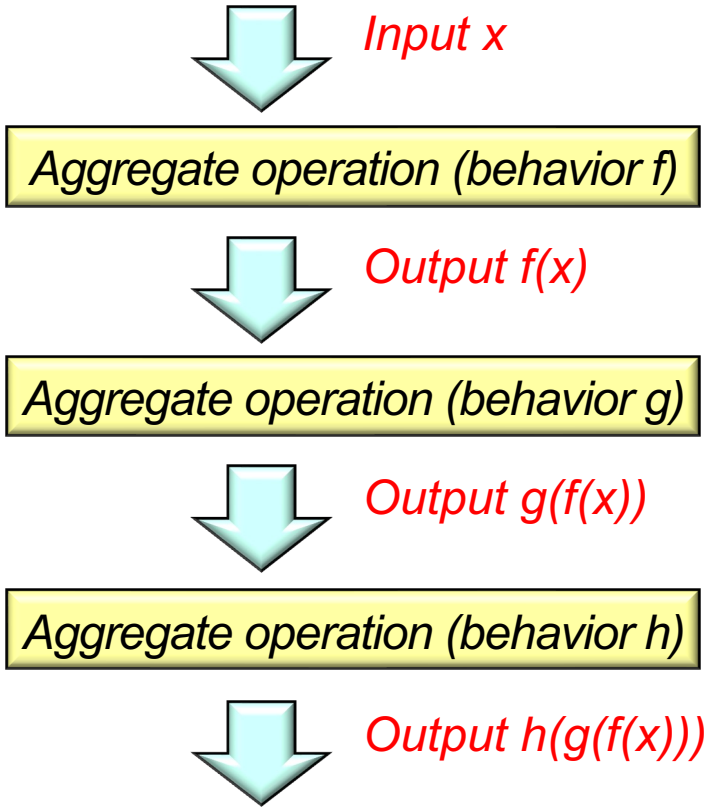
- Streams enhance flexibility by forming a "processing pipeline" that composes multiple aggregate operations together



See en.wikipedia.org/wiki/Pipeline_(software)

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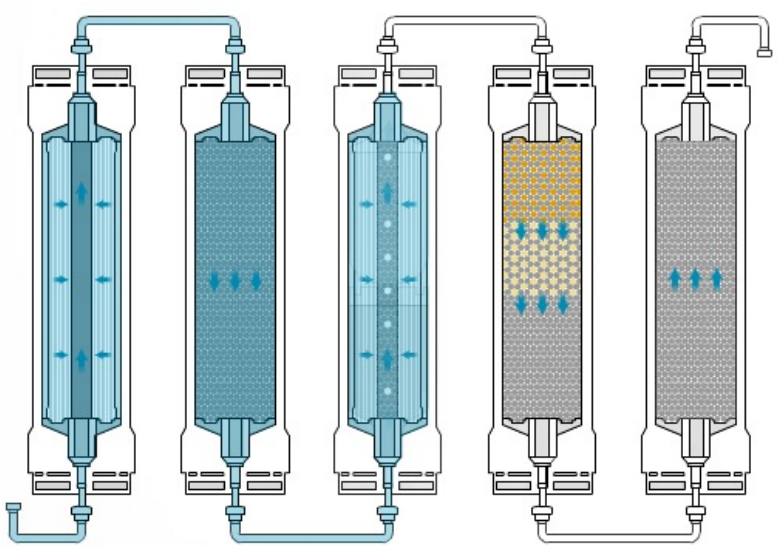
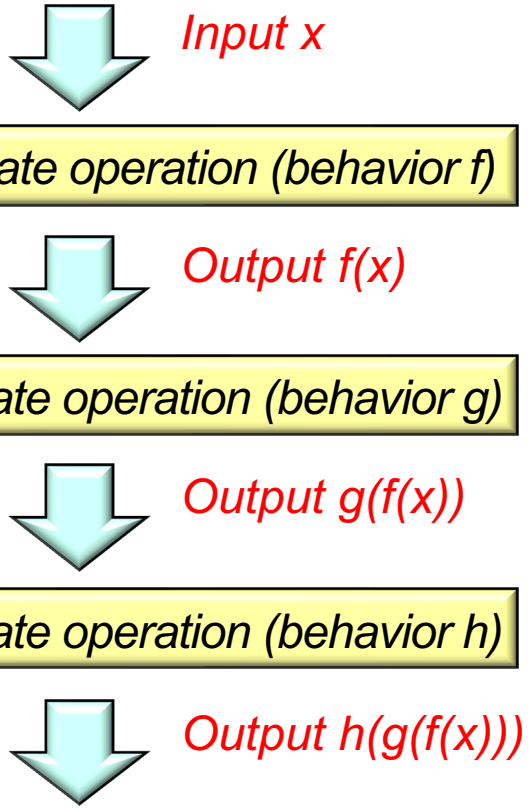


Each aggregate operation in the pipeline can filter and/or transform the stream.



See en.wikipedia.org/wiki/Water_filter#Point-of-use_filters

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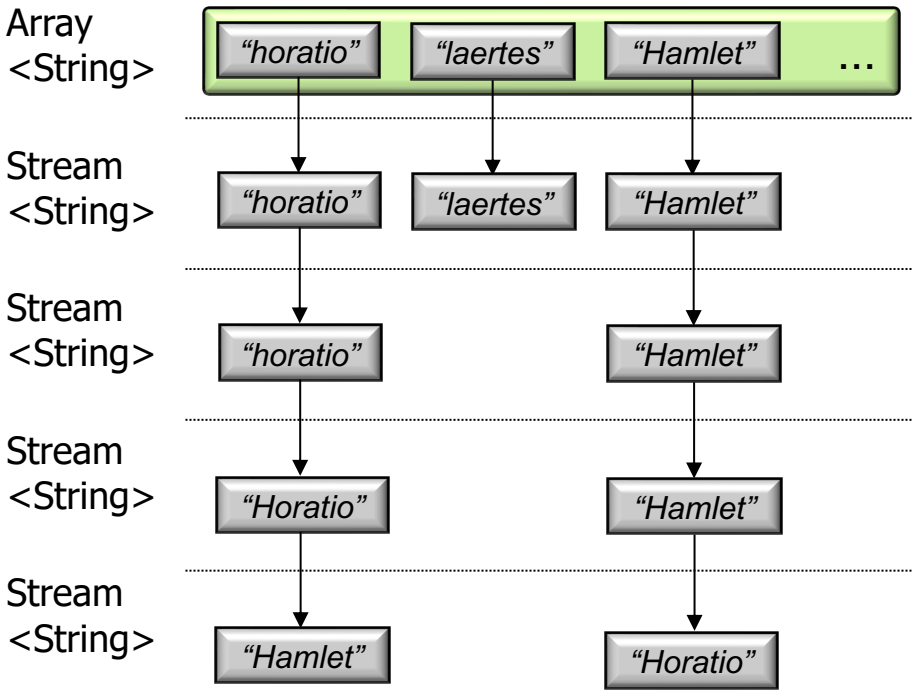

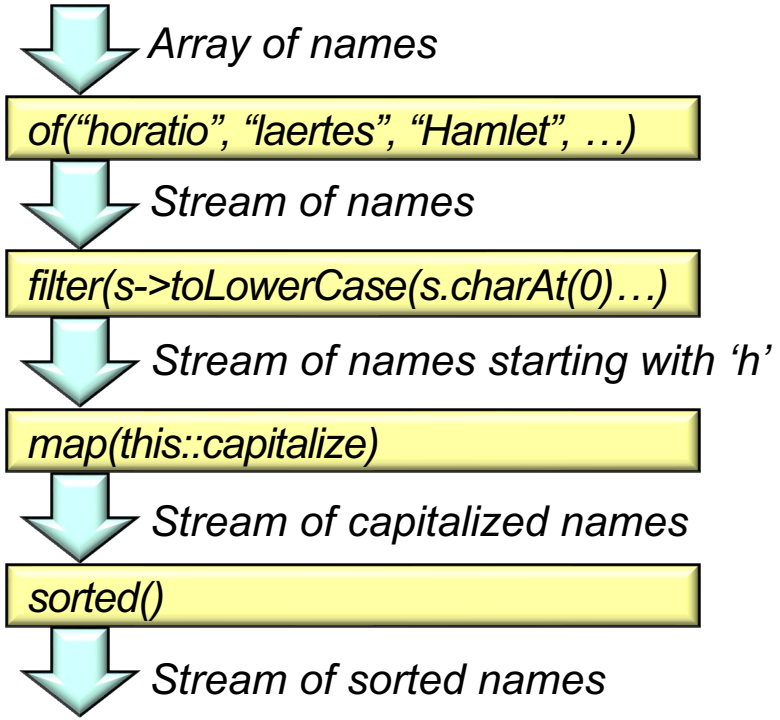

See github.com/douglascraigschmidt/LiveLessons/tree/master/Java8/ex12

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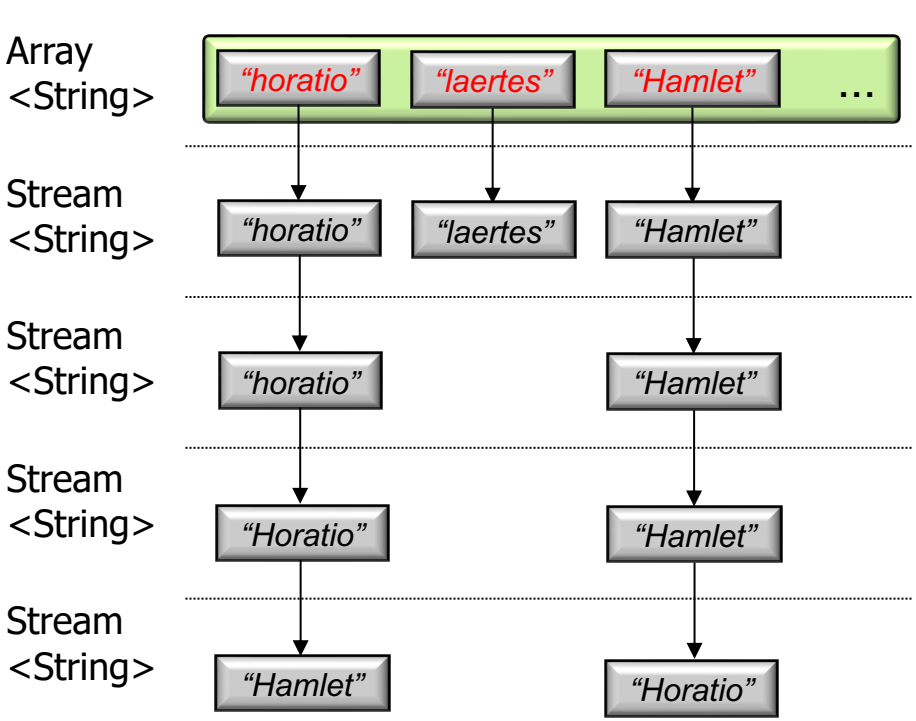

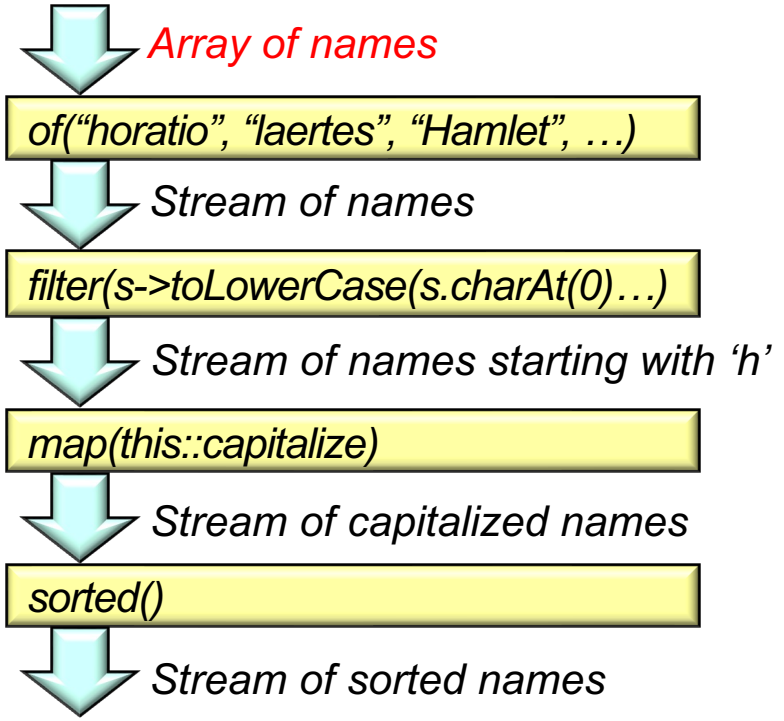

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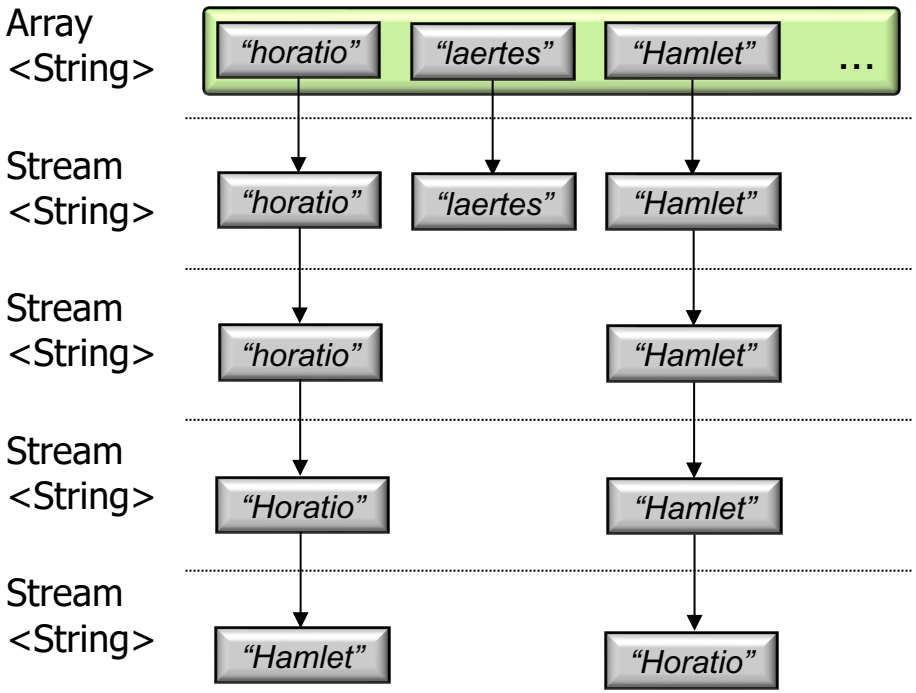

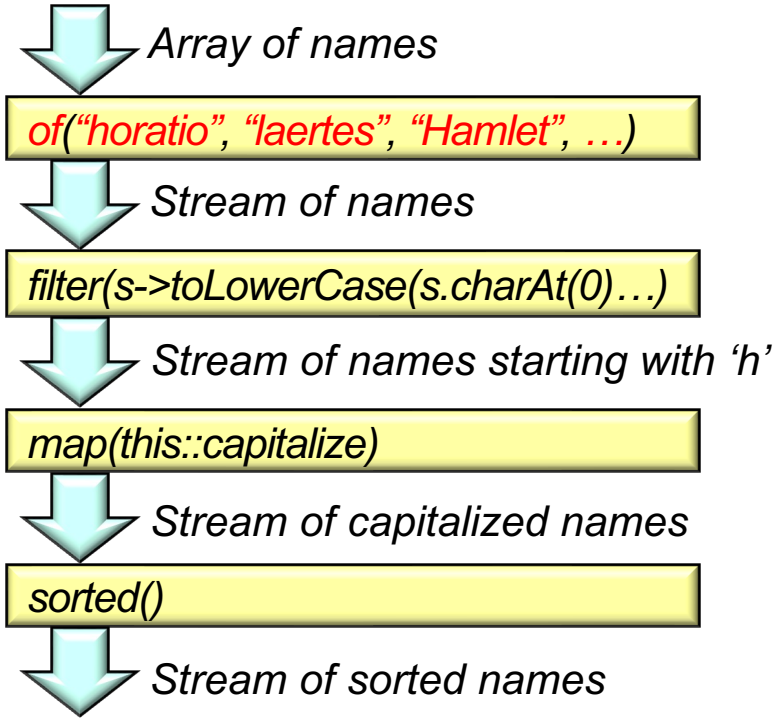

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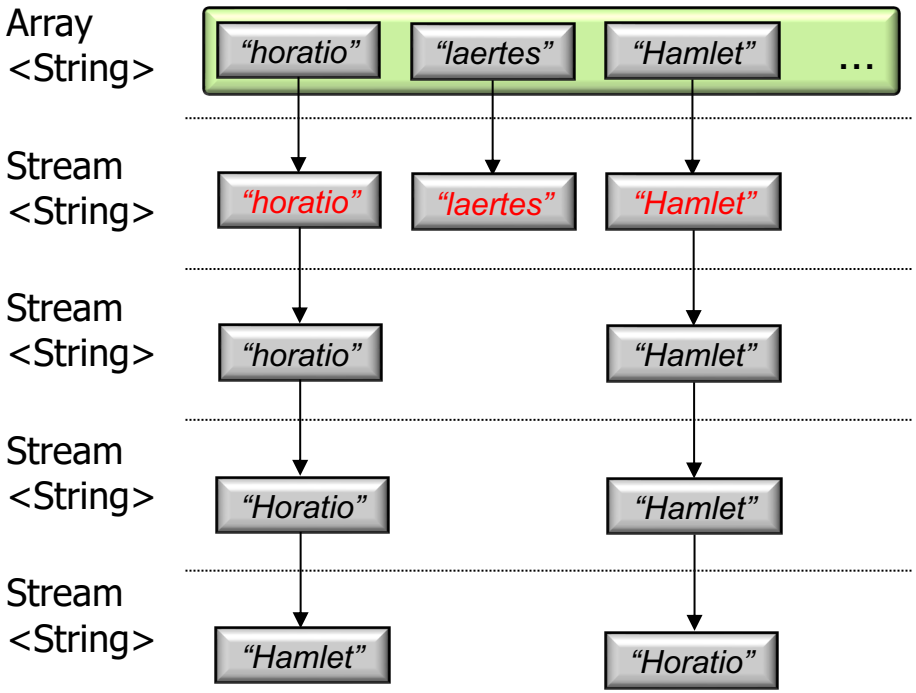

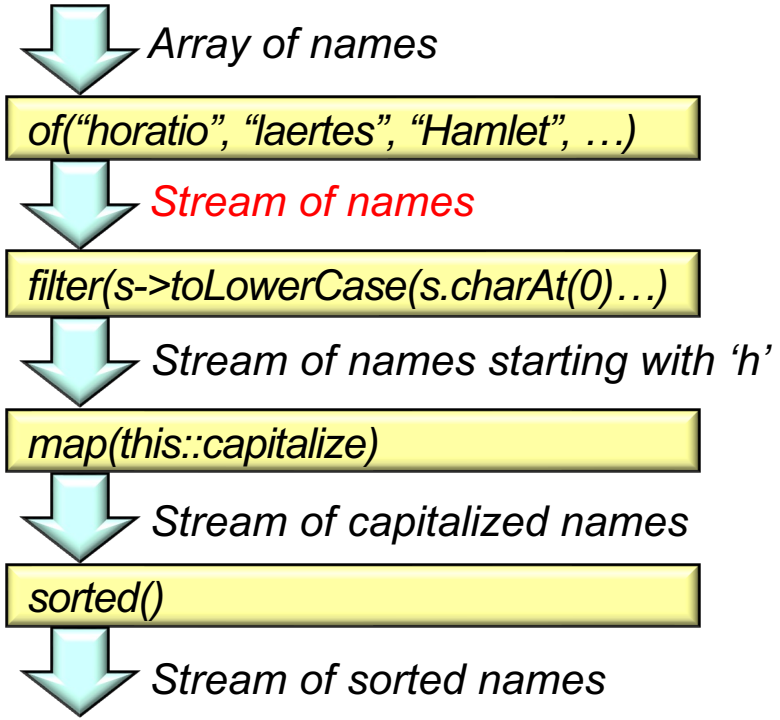

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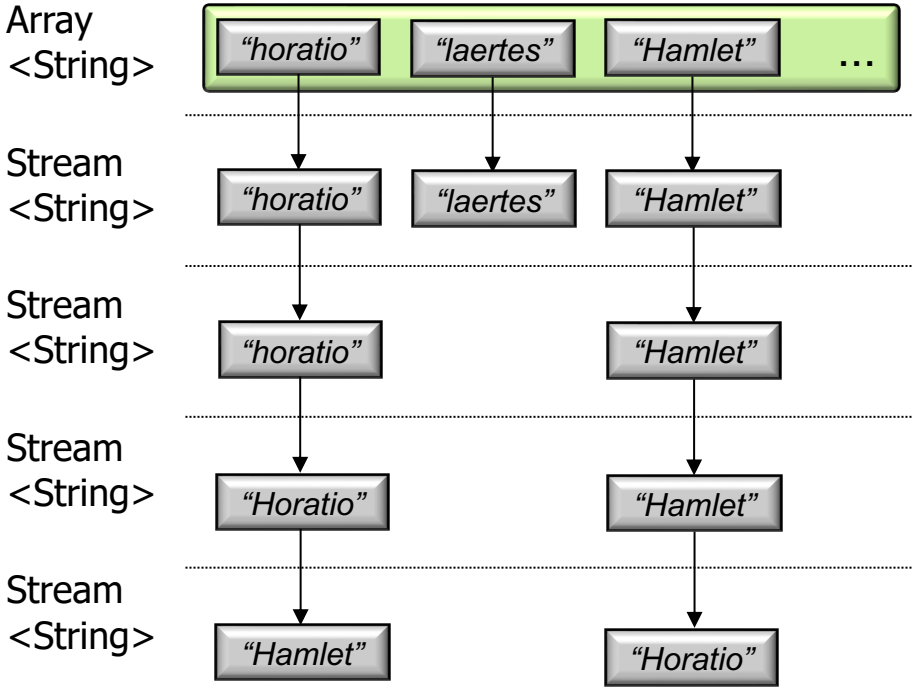

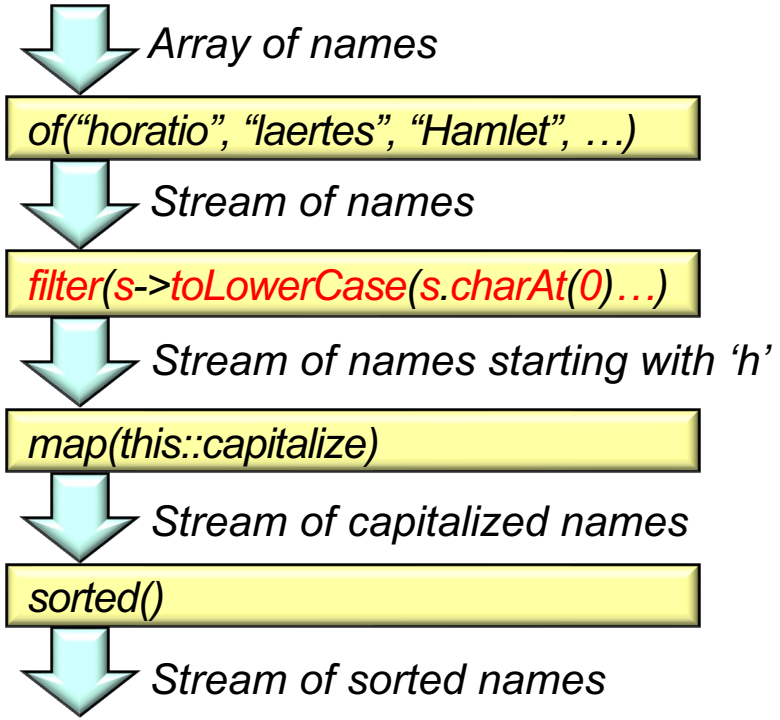

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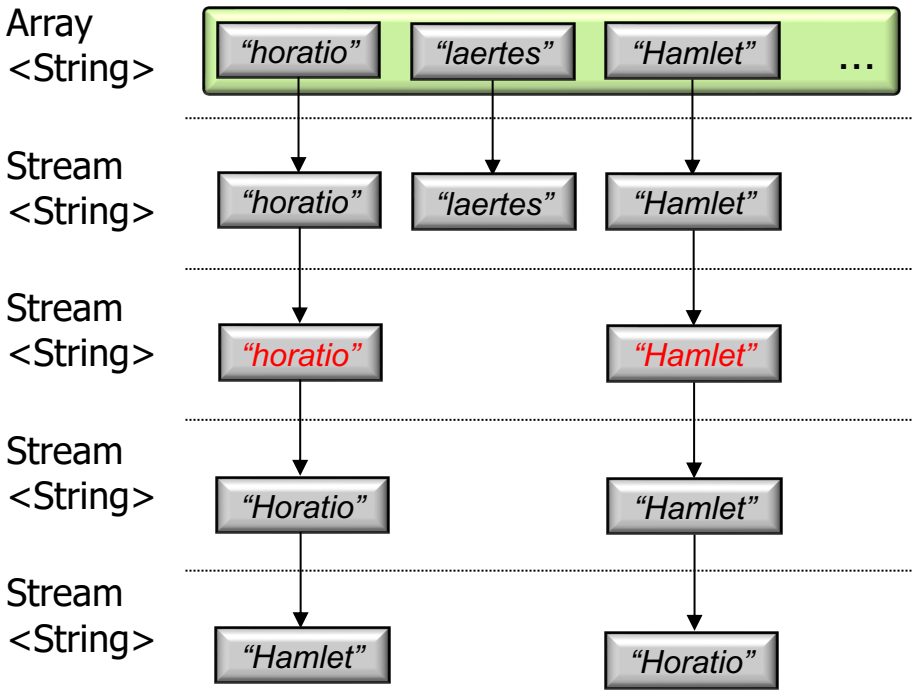

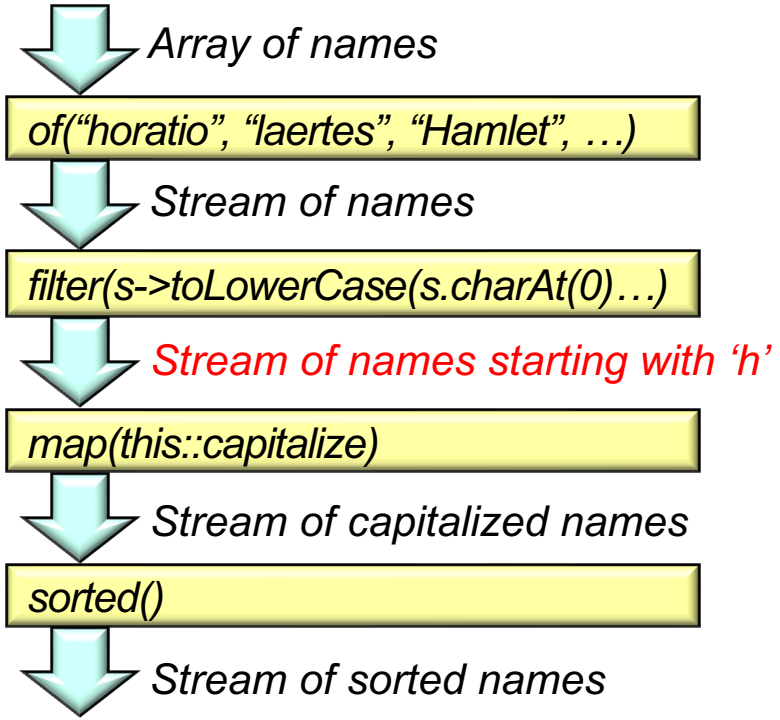

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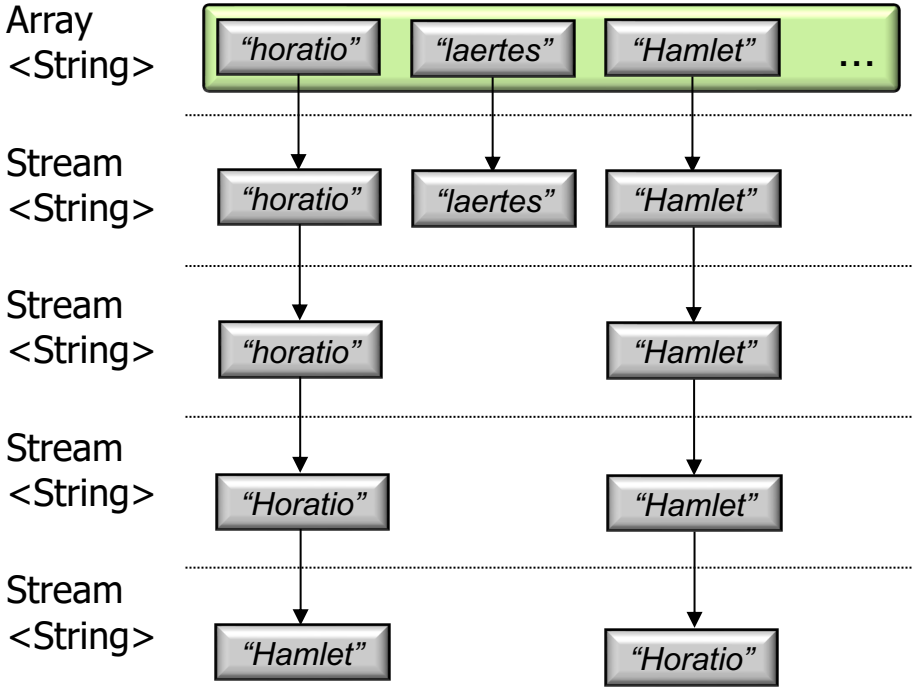

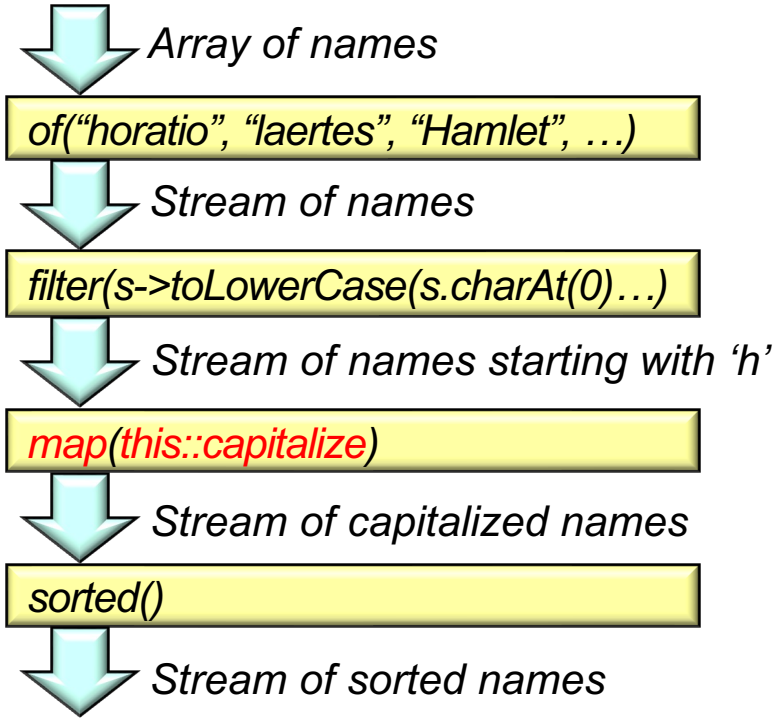

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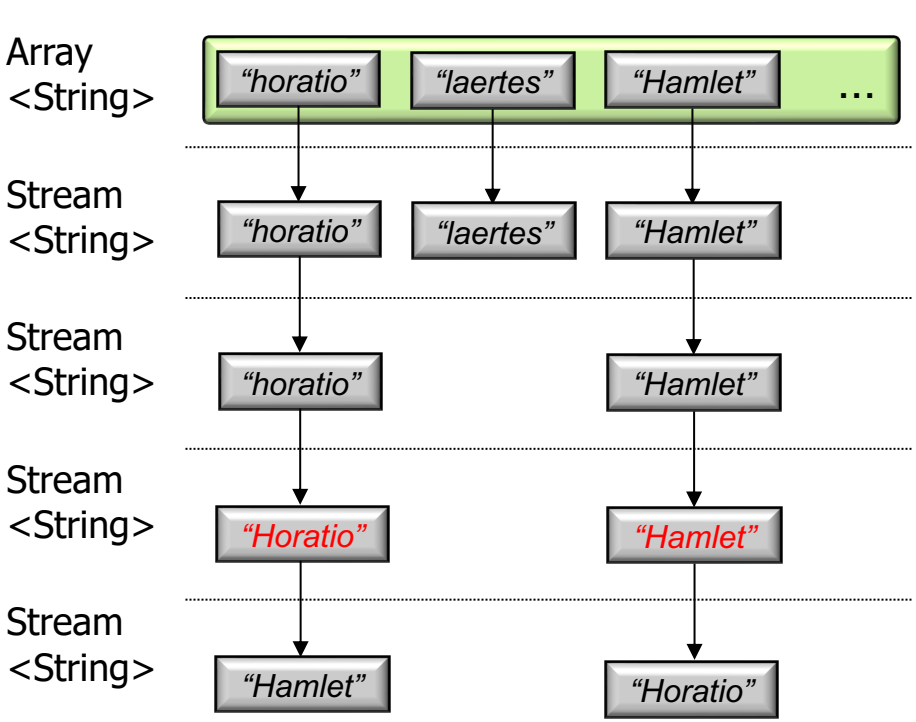

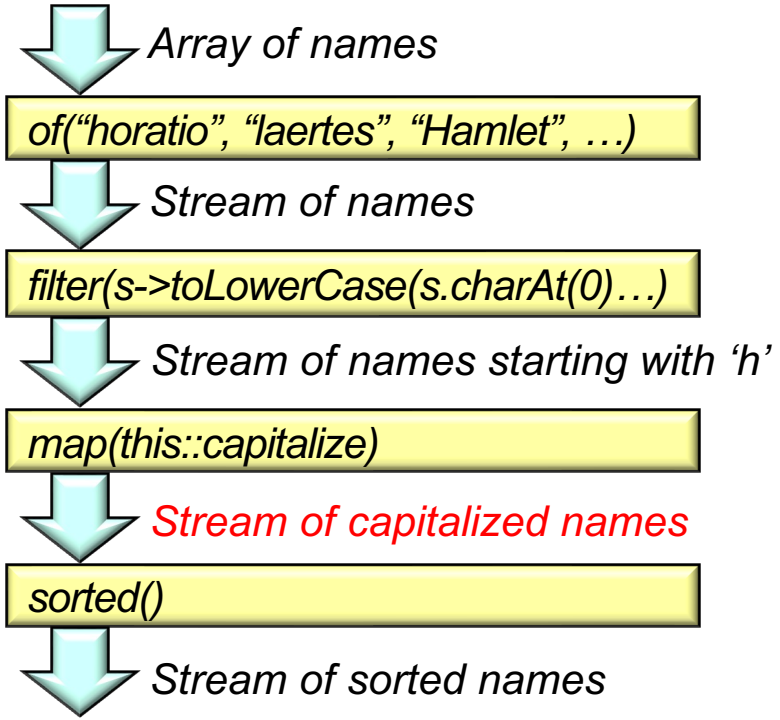

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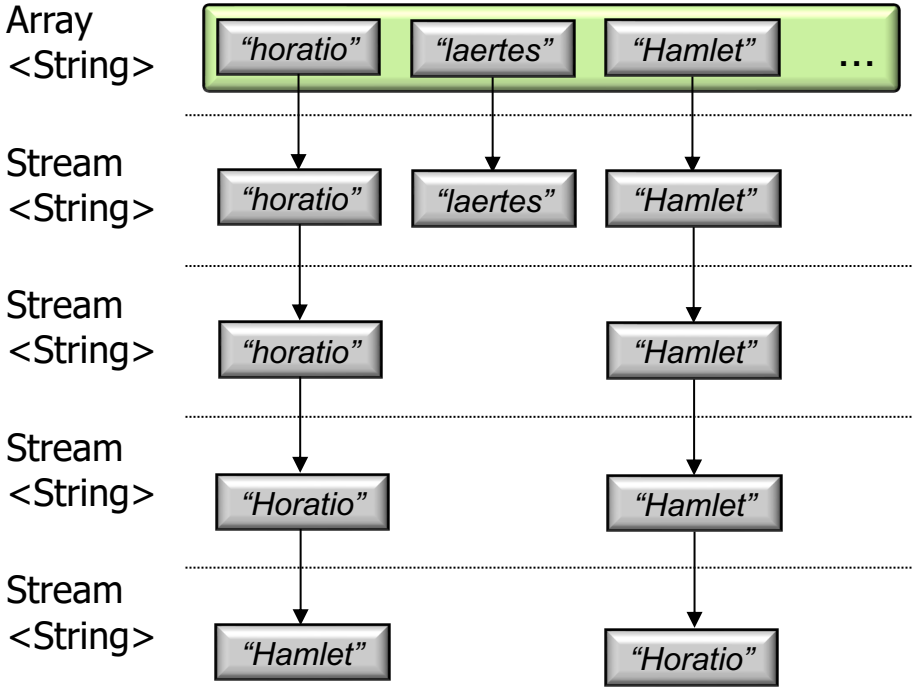

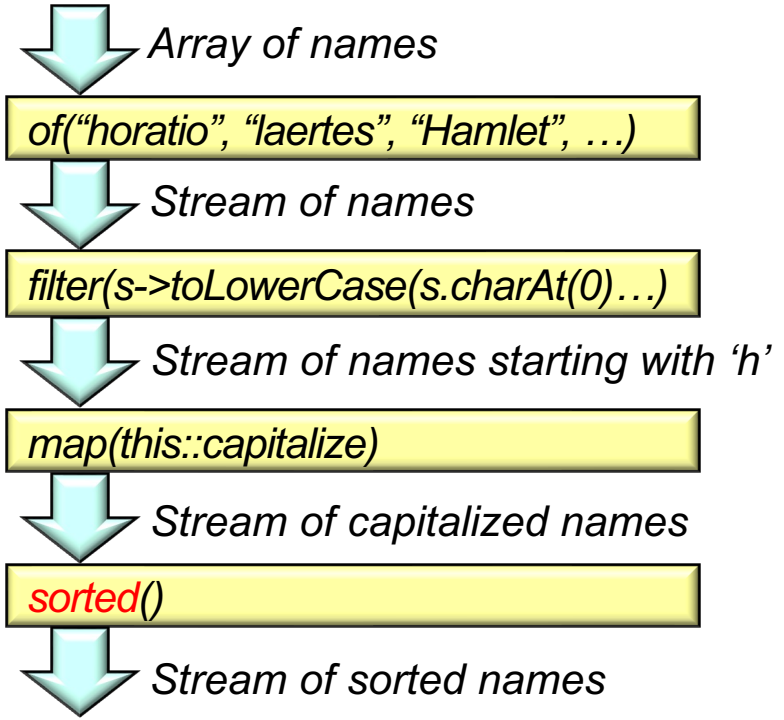

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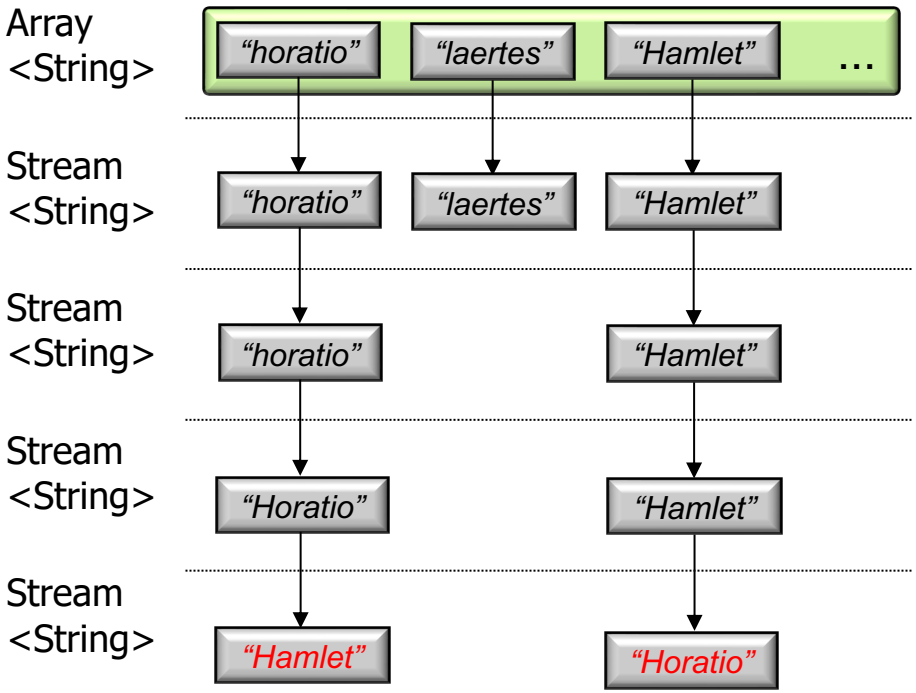

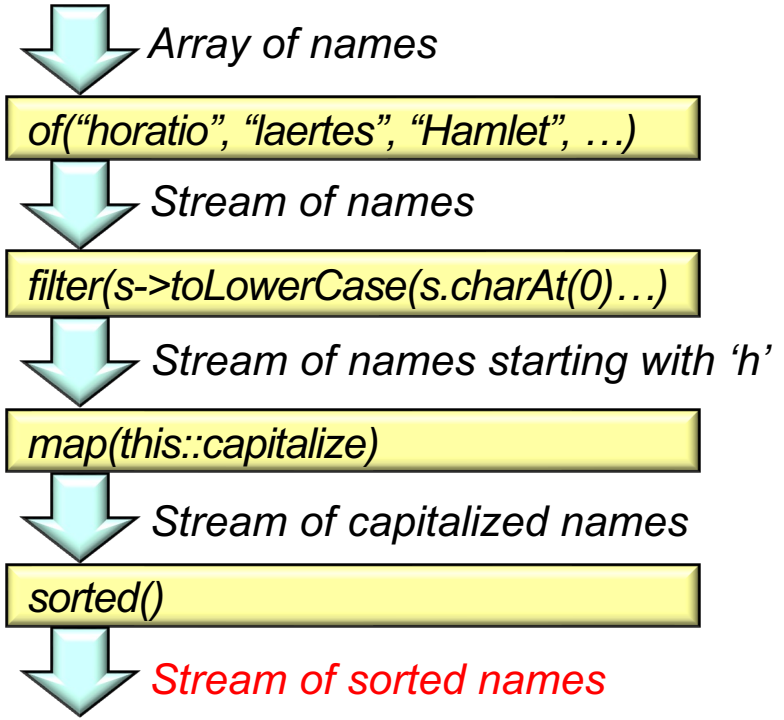

How Java Streams Processing Works in Practice

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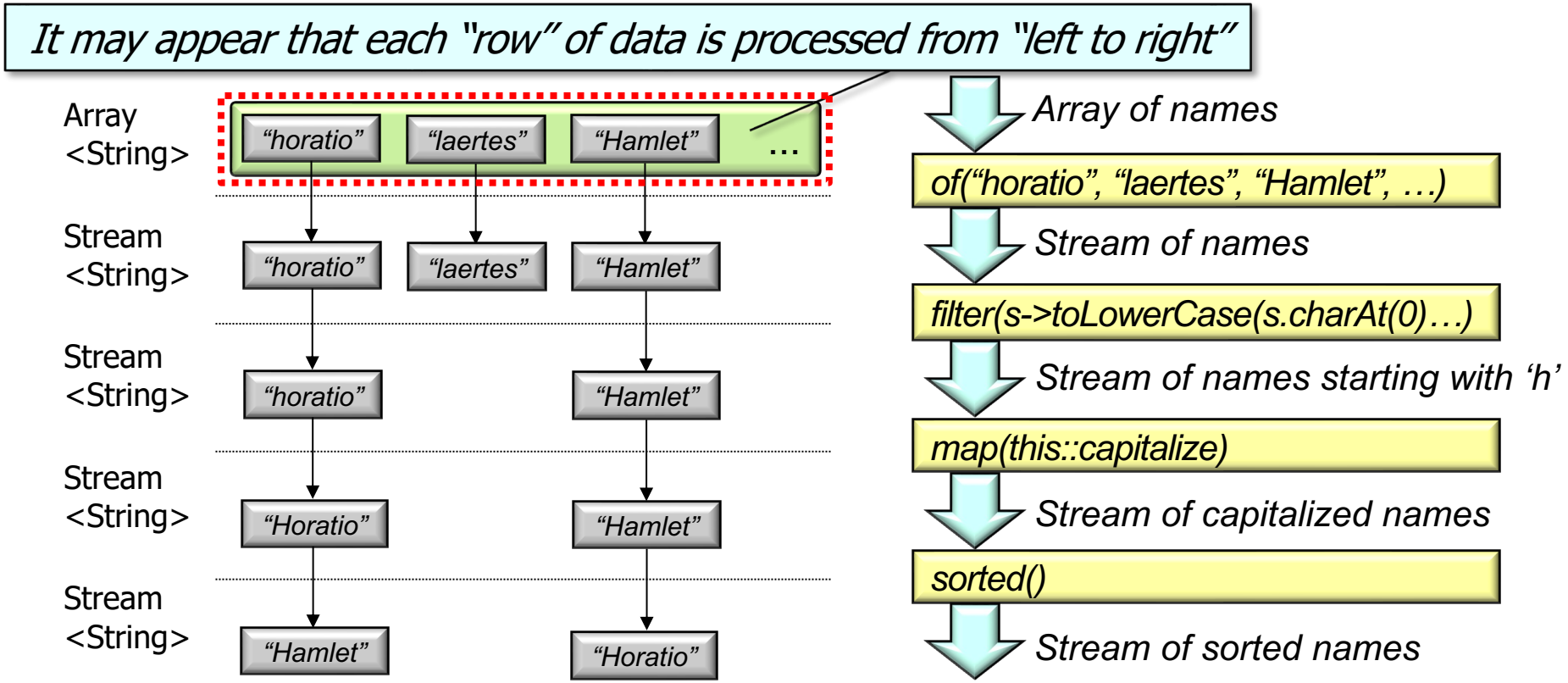
- The "physical" processing of a stream differs from the "logical" model

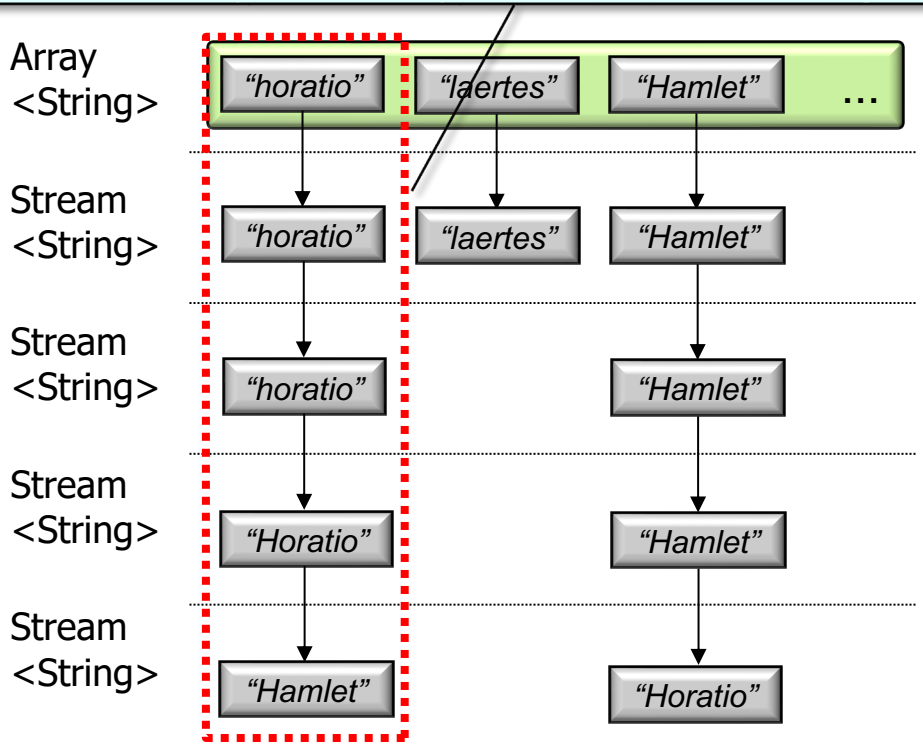


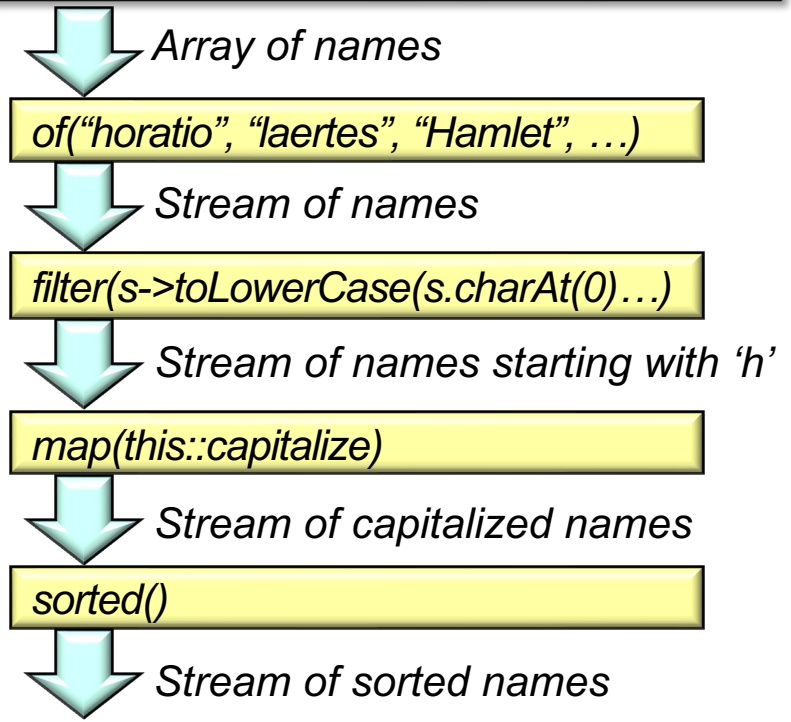
See www.ibm.com/developerworks/library/j-java-streams-3-brian-goetz

How Java Streams Processing Works in Practice

- The "physical" processing of a stream differs from the "logical" model

However, each element is actually "pulled" from the source thru each aggregate operation





This implementation is much more efficient & supports "short-circuit" operations

End of Visualizing Java Streams in Action