Java 8 Concurrency & Parallelism Frameworks Intro

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Learning Objectives in this Lesson

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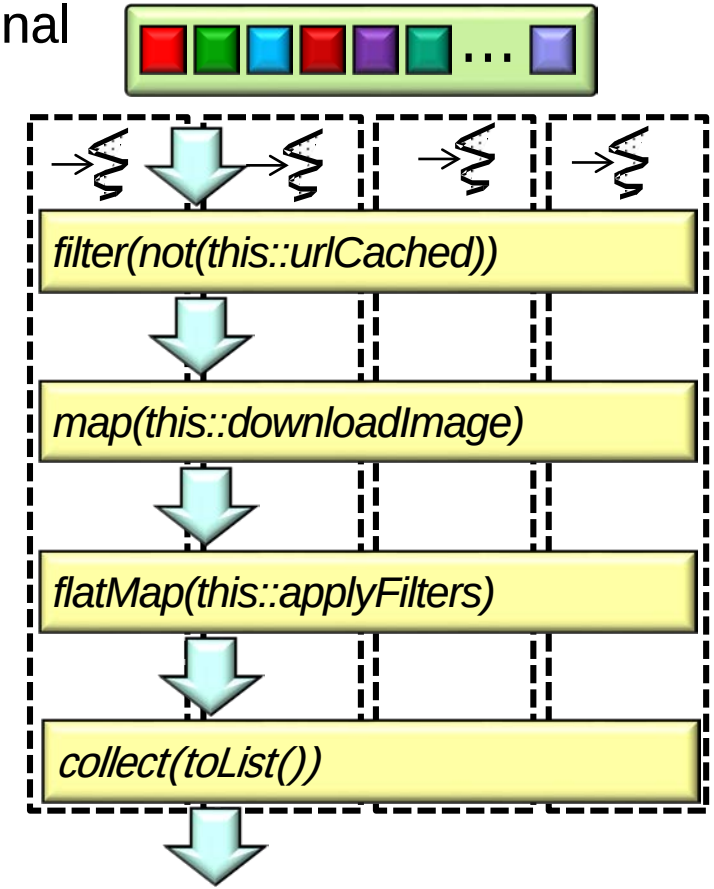
  - Parallel streams



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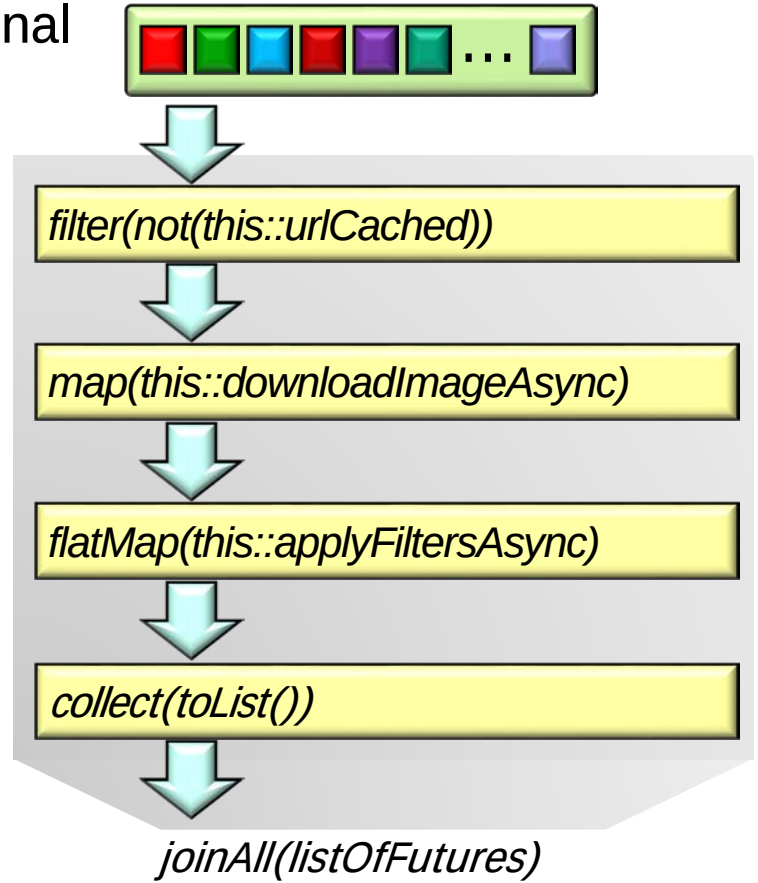
  - Parallel streams
  - Completable futures



Overview of Java 8 Concurrency & Parallelism Frameworks

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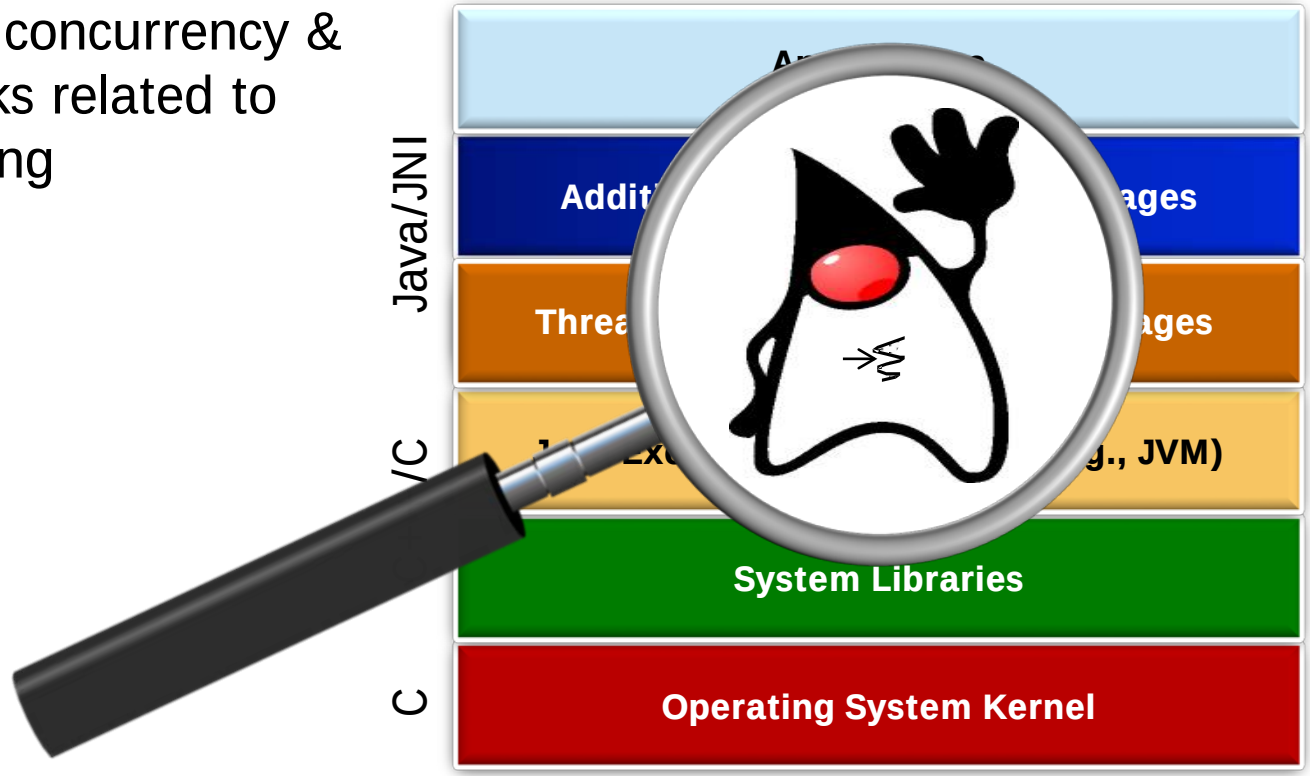
- Java 8 adds two new concurrency & parallelism frameworks related to functional programming



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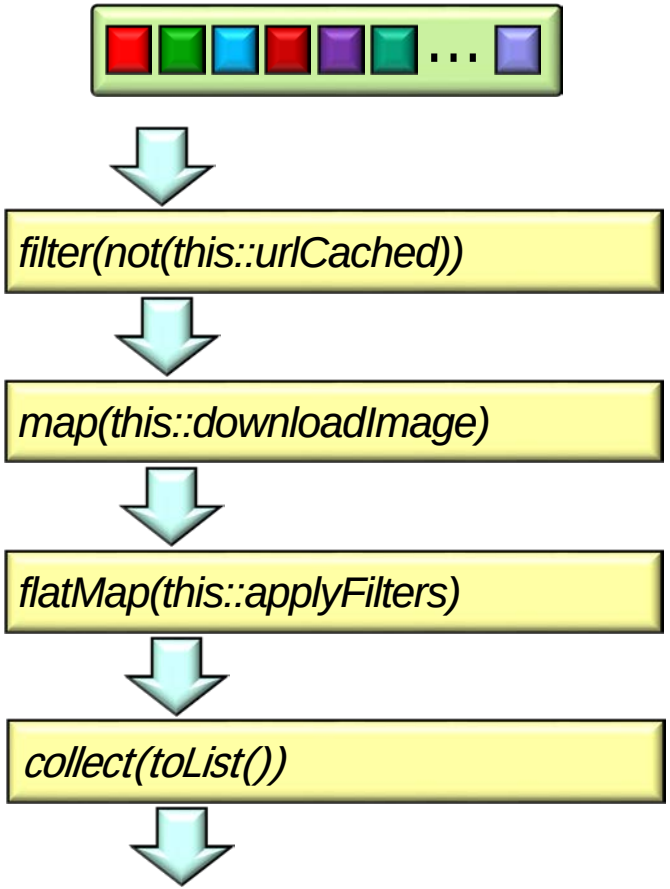
1. Parallel streams

  - Partitions a stream into multiple substreams that run independently & combine into a “reduced” result



See docs.oracle.com/javase/tutorial/collections/streams/parallelism.html

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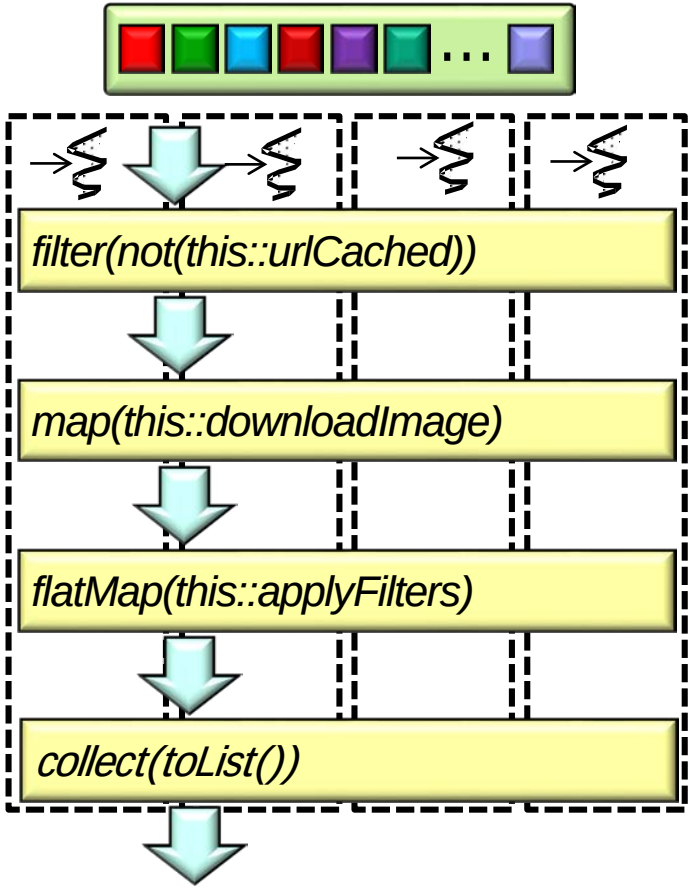

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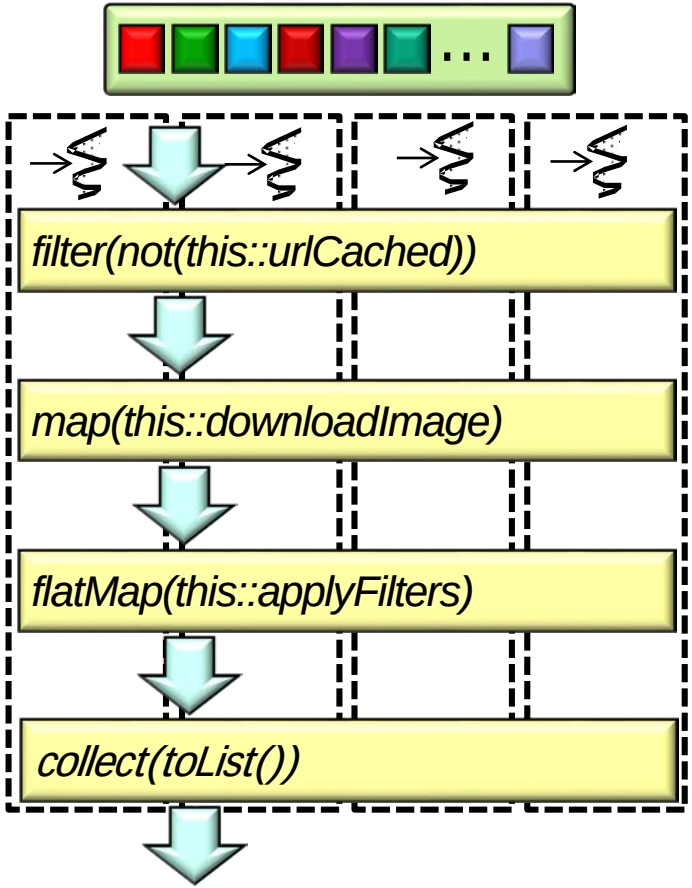

Parallel streams provides a fine-grained data parallelism programming model

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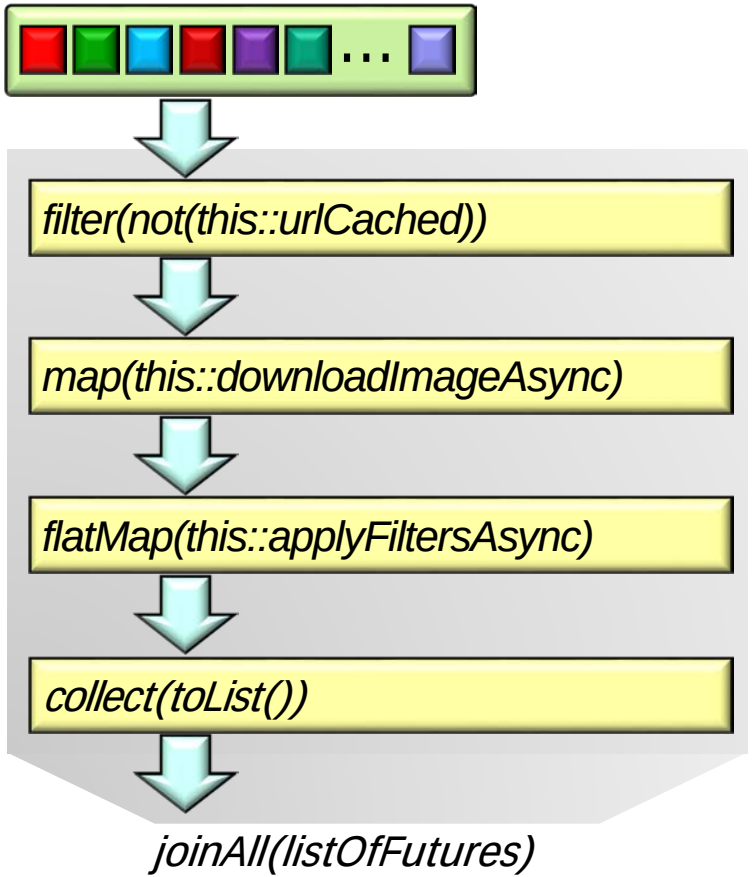
     - Supports dependent functions that trigger upon completion of asynchronous operations



See www.nurkiewicz.com/2013/05/java-8-definitive-guide-to.html

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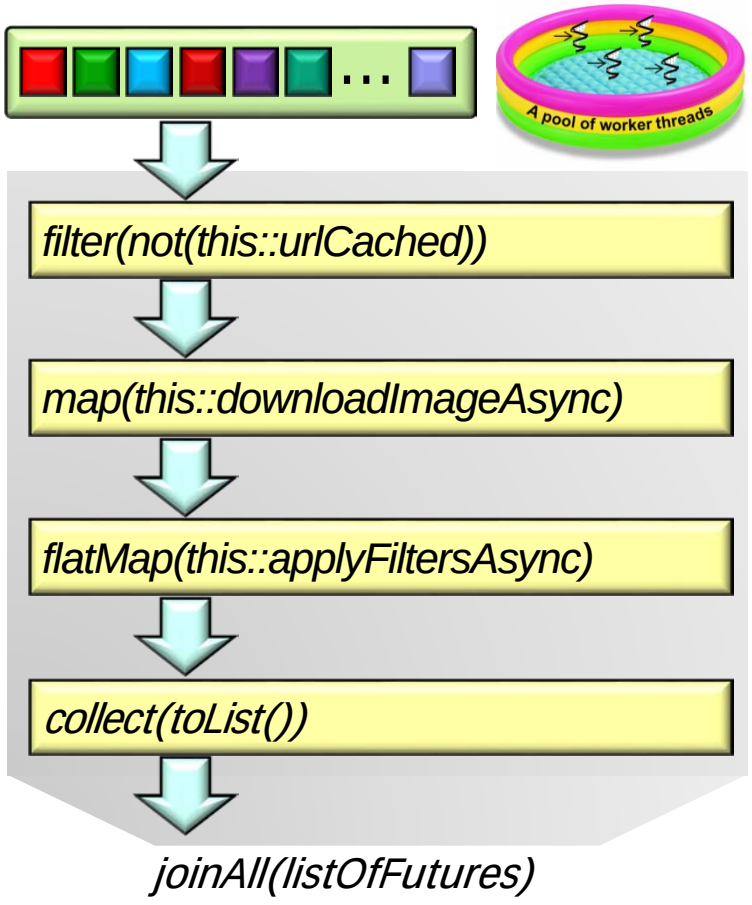

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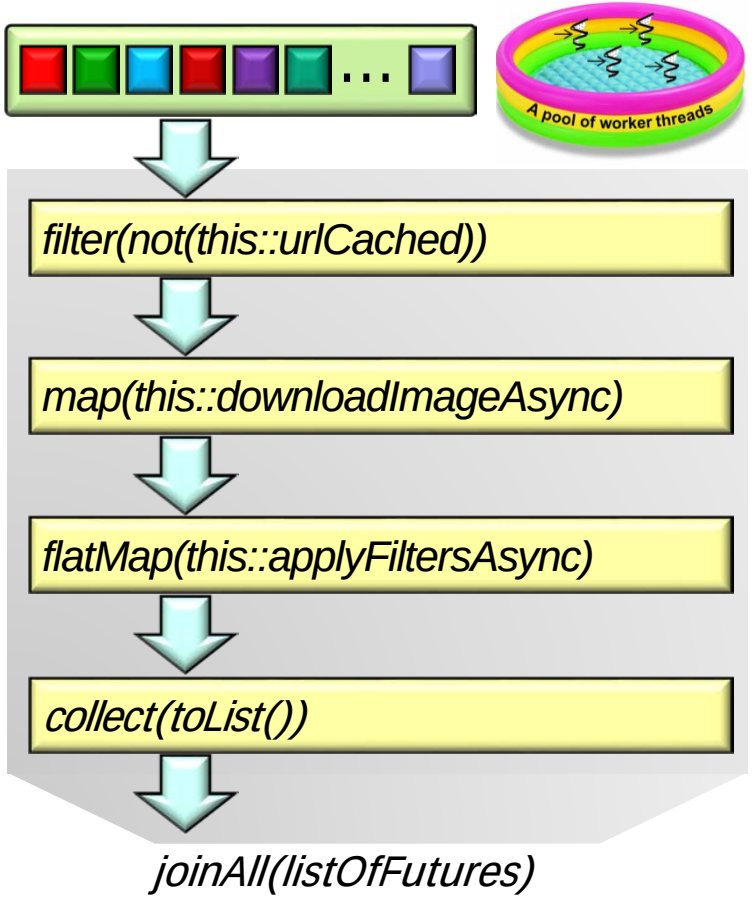

Completable futures provide an asynchronous event-driven programming model

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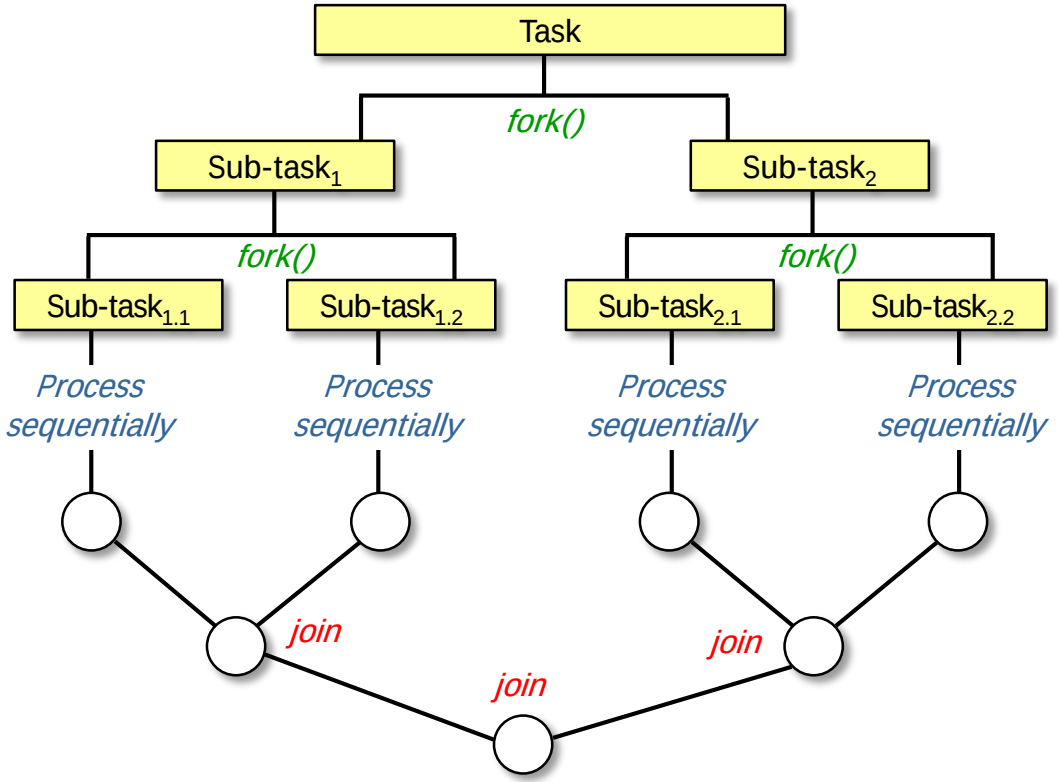
- Both frameworks use the fork-join pool framework by default



See www.oracle.com/technetwork/articles/java/fork-join-422606.html

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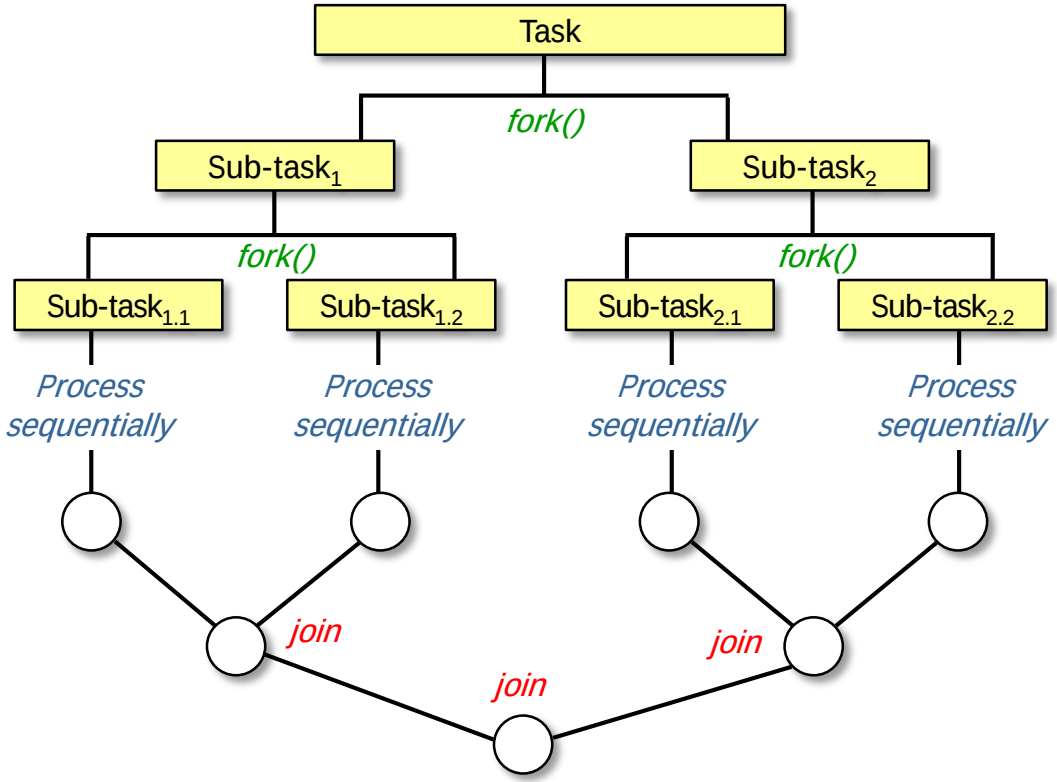
  - Employs *work-stealing* to accelerate performance on multi-core processors



See gee.cs.oswego.edu/dl/cpjslides/fj.pdf

End of Java 8 Concurrency & Parallelism Frameworks Intro