Subclasses of the Java ForkJoinTask Class

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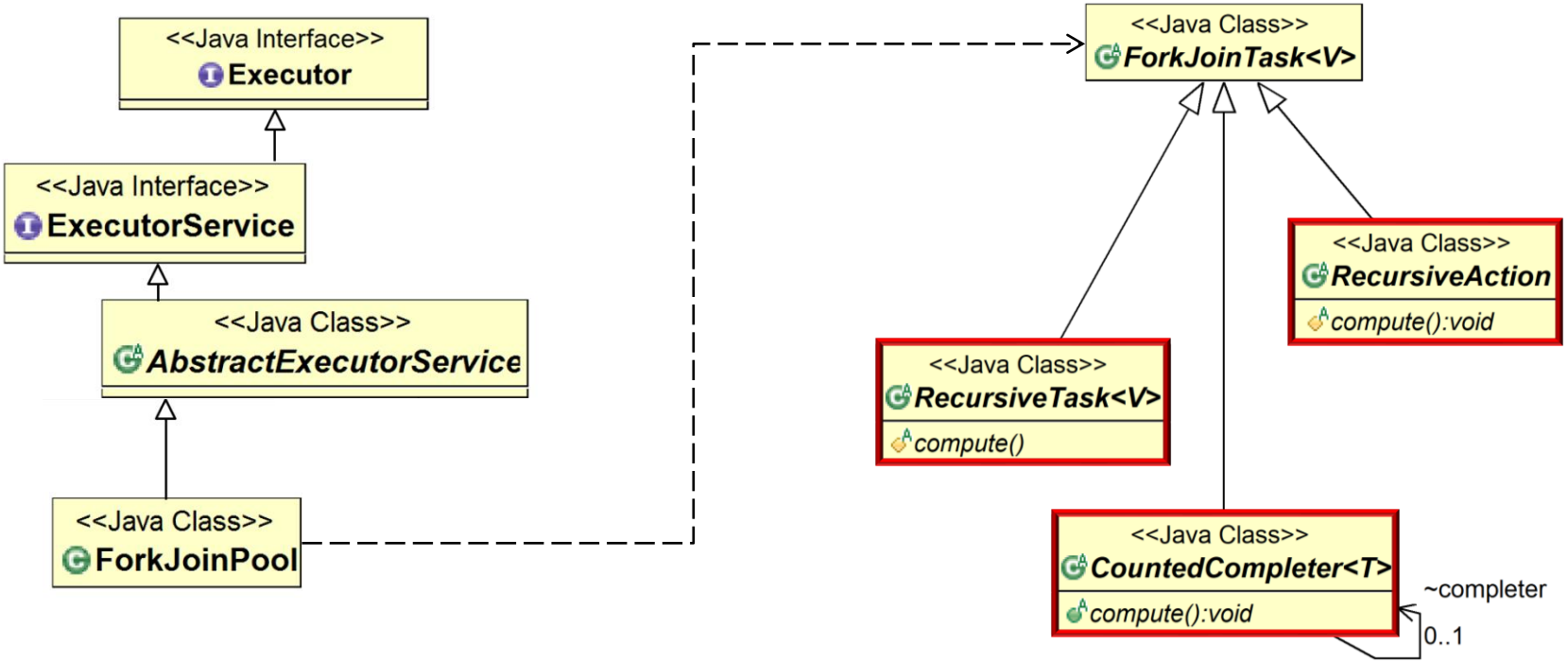
Learning Objectives in this Part of the Lesson

- Understand how the Java fork-join framework processes tasks in parallel
- Recognize the structure & functionality of the fork-join framework



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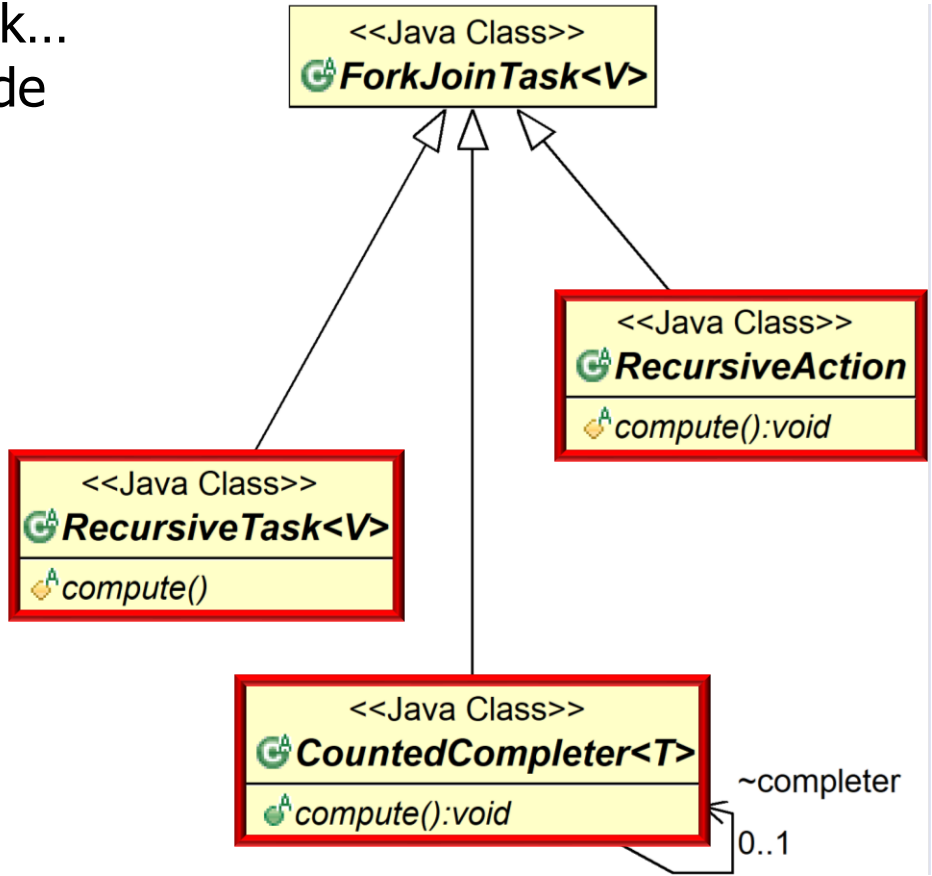
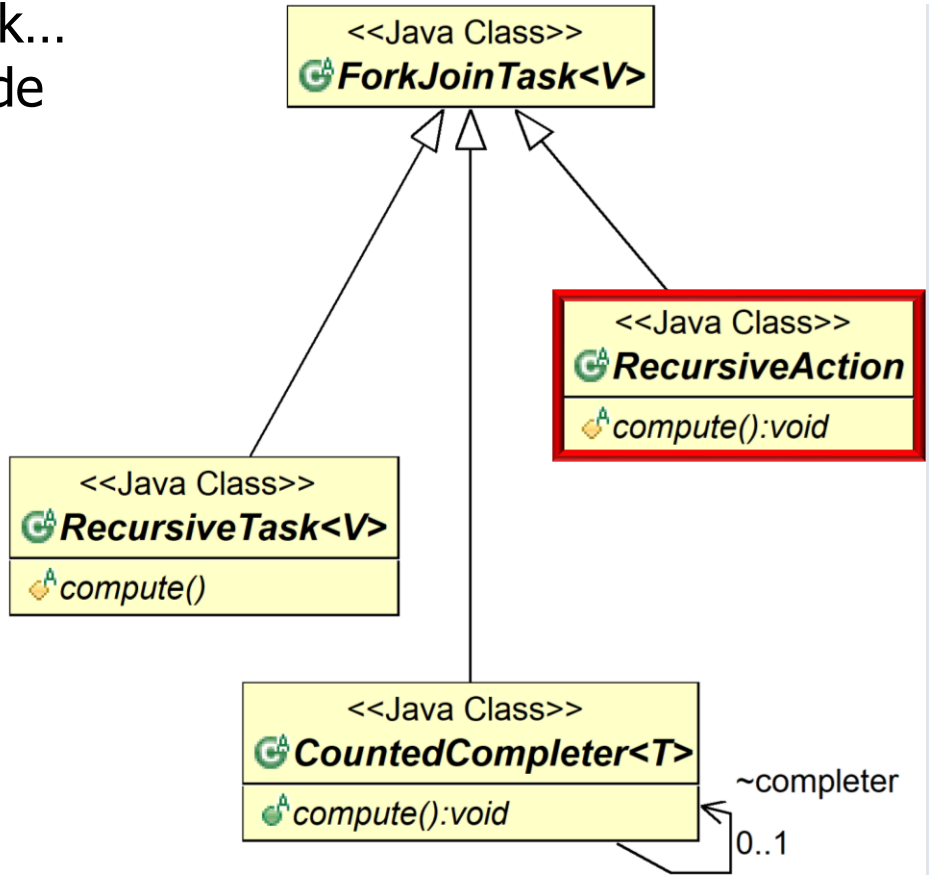


See docs.oracle.com/javase/8/docs/api/java/util/concurrent/package-tree.html

The Subclasses of ForkJoinTask

- Programs don't implement ForkJoinTask… but instead extend a subclass & override its compute() hook method, e.g.
  - **RecursiveAction**
    - Use for computations that do not return results



See docs.oracle.com/javase/8/docs/api/java/util/concurrent/RecursiveAction.html

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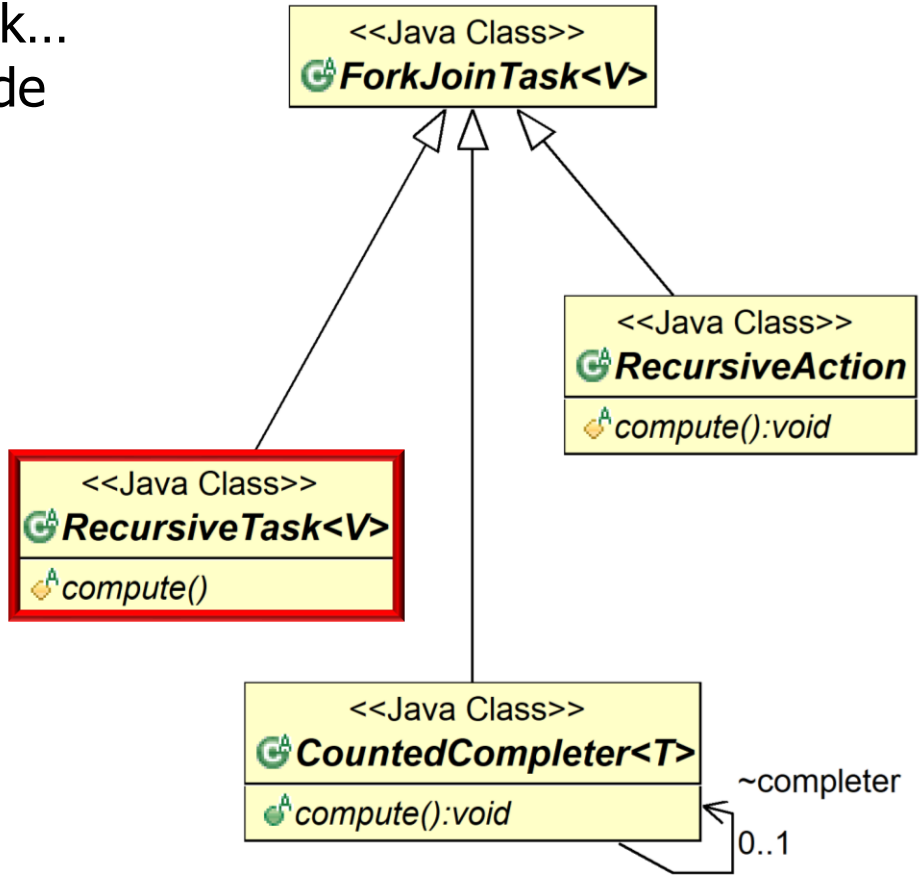
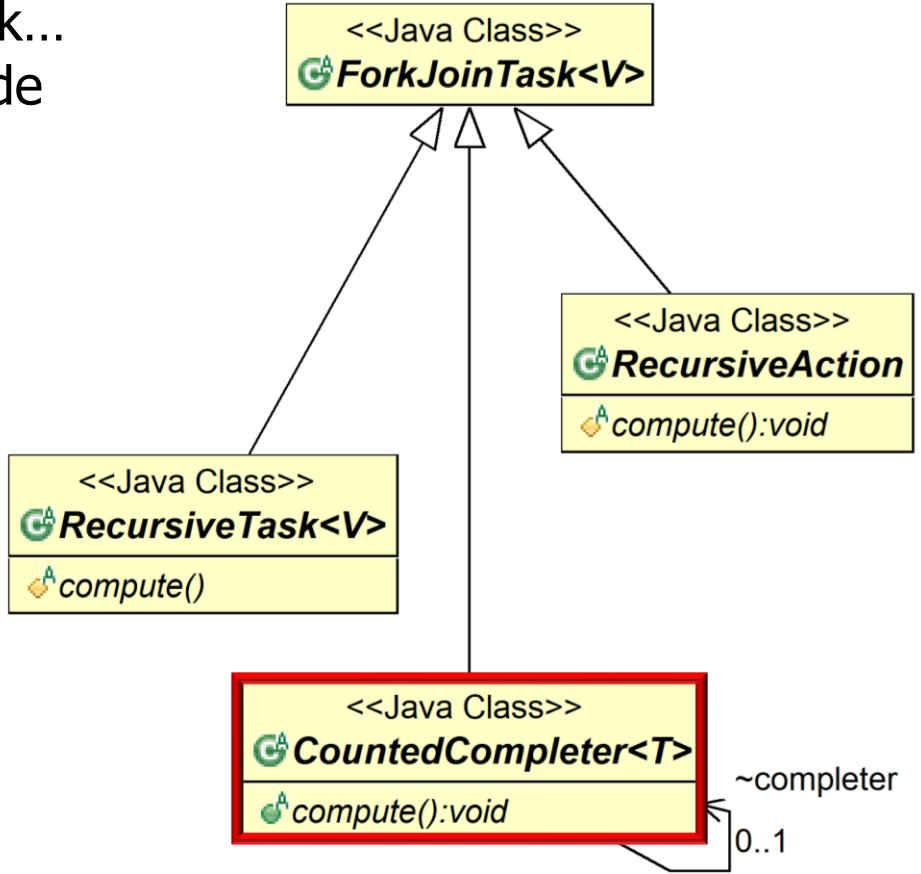
  - **RecursiveTask**
    - Use for computations that *do* return results



See docs.oracle.com/javase/8/docs/api/java/util/concurrent/RecursiveTask.html

The Subclasses of ForkJoinTask

- Programs don't implement ForkJoinTask… but instead extend a subclass & override its compute() hook method, e.g.
  - RecursiveAction
  - RecursiveTask
  - **CountedCompleter**
    - Used for computations in which completed actions trigger other actions



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The Subclasses of ForkJoinTask

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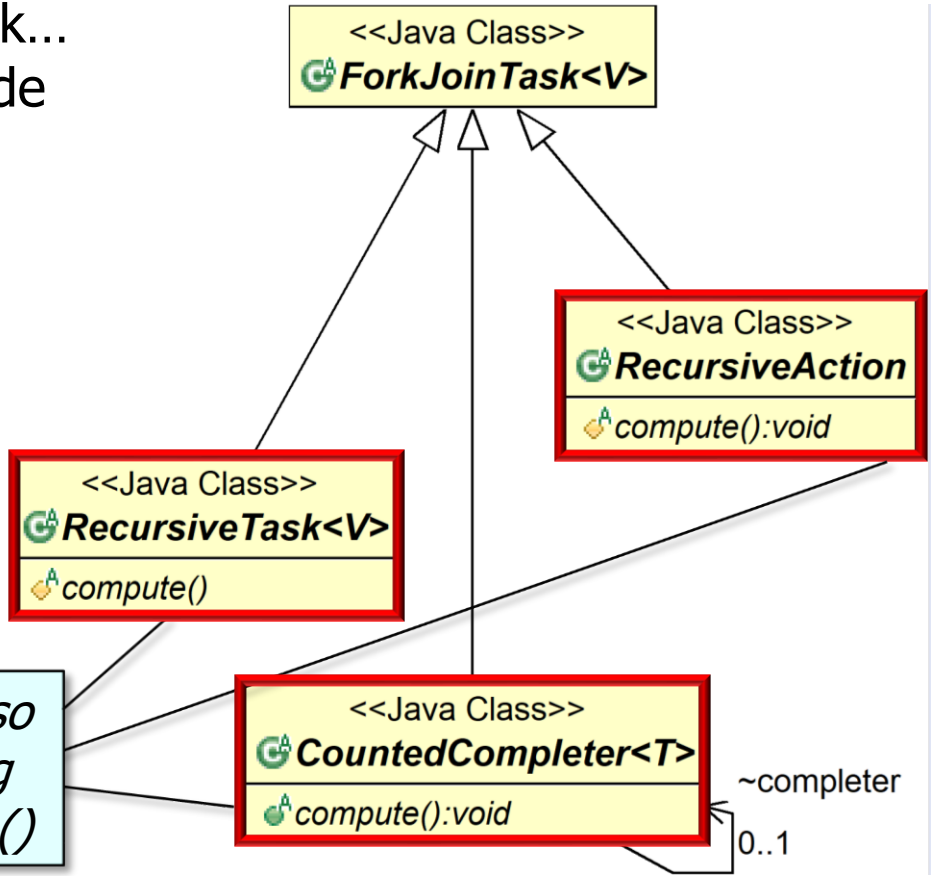
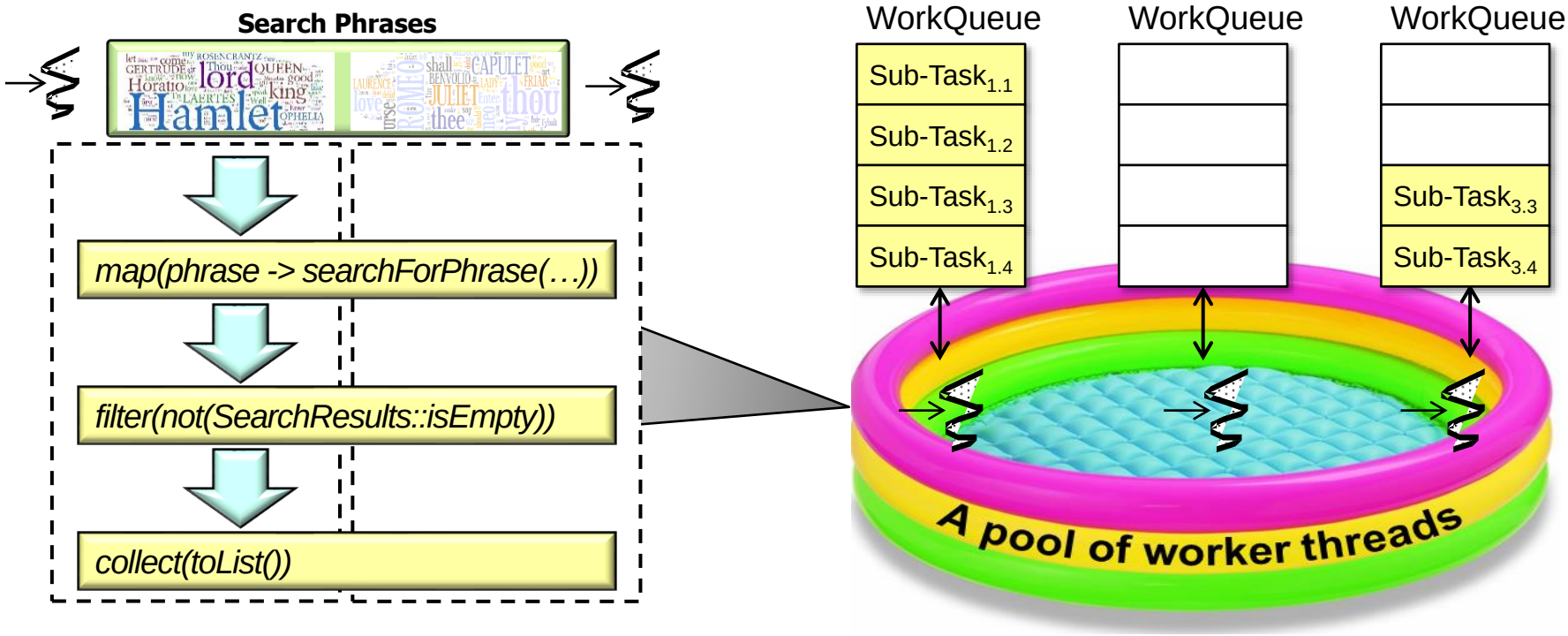
  - **RecursiveAction**
  - **RecursiveTask**
  - **CountedCompleter**



These classes aren't functional interfaces, so they must be subclassed rather than using lambda expressions to implement compute()

The Subclasses of ForkJoinTask

- The parallel streams framework provides a functional facade to ForkJoinTask et al.



See lesson on "*Java Parallel Stream Internals: Mapping Onto the Common Fork-Join Pool*"

End of Subclasses of the Java ForkJoinTask Class