Motivating the Need for Java 8 CompletableFutures

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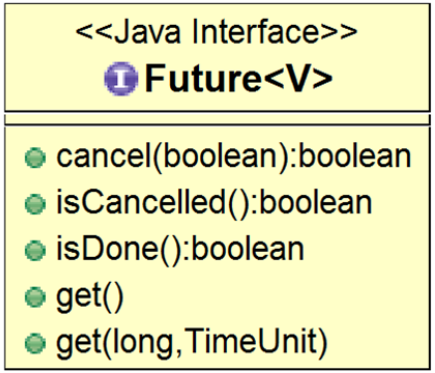
Learning Objectives in this Lesson

- Motivate the need for Java 8 completable futures



Motivating the Need for Completable Futures

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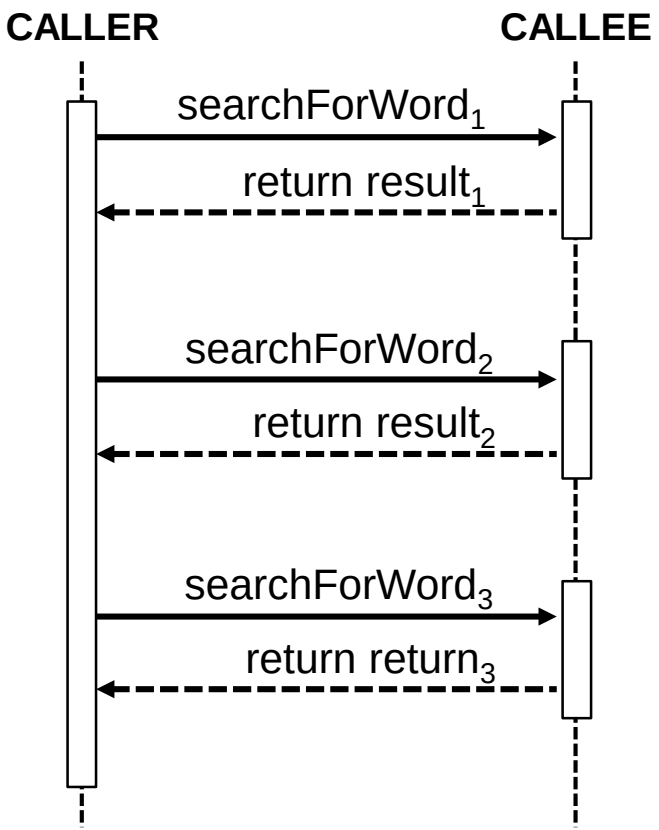

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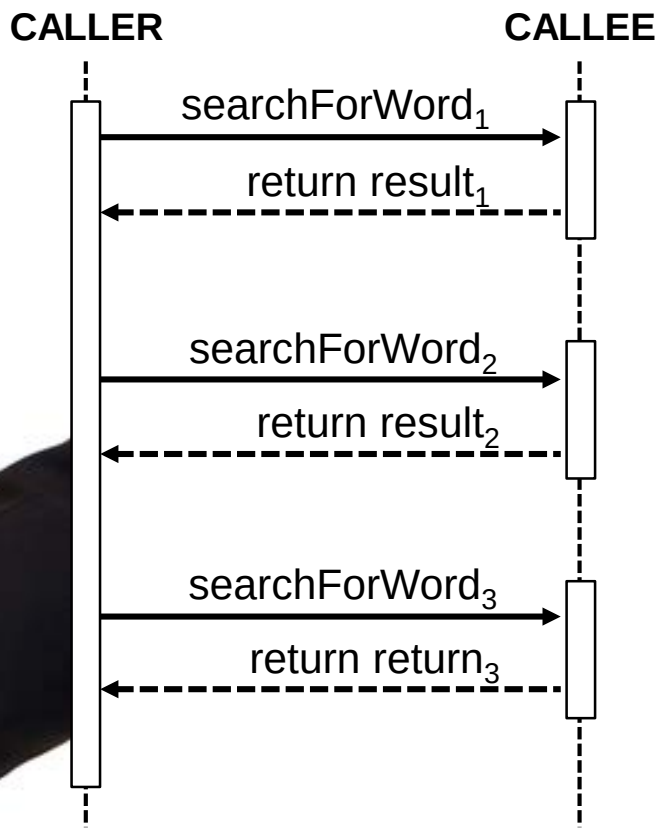

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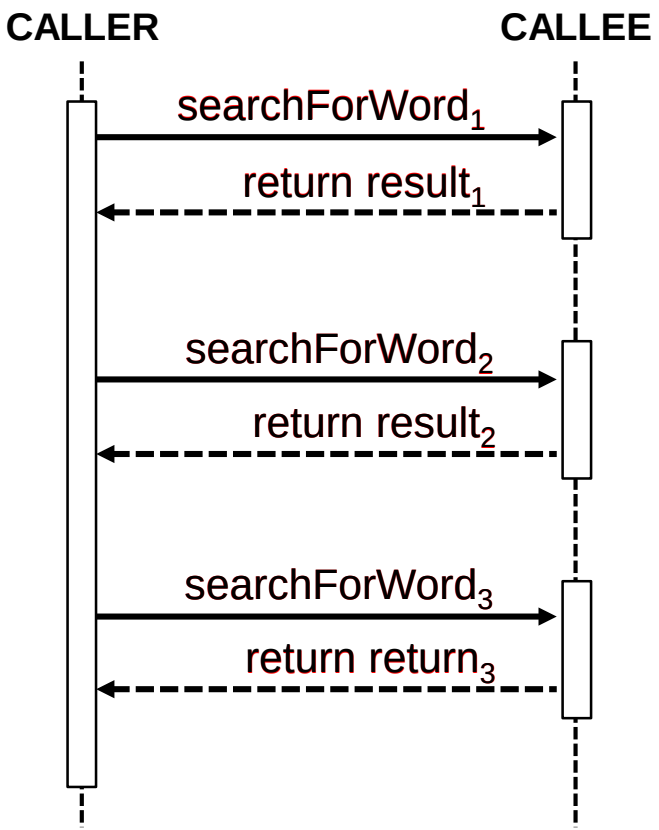

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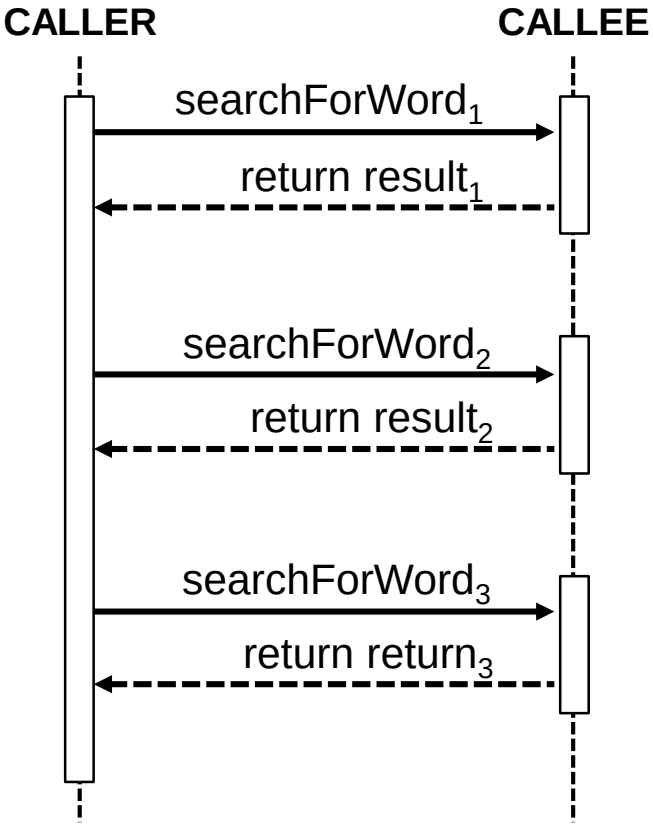

See www.iro.umontreal.ca/~keller/Layla/remote.pdf

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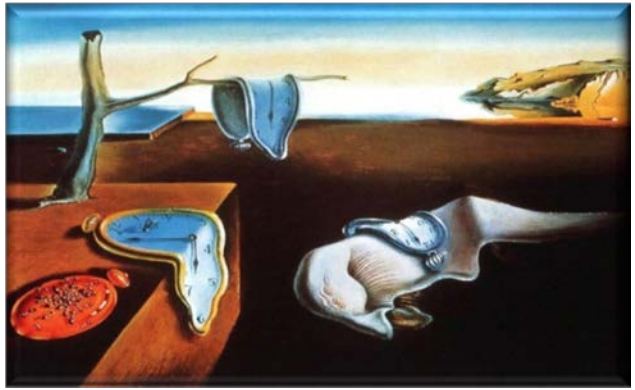

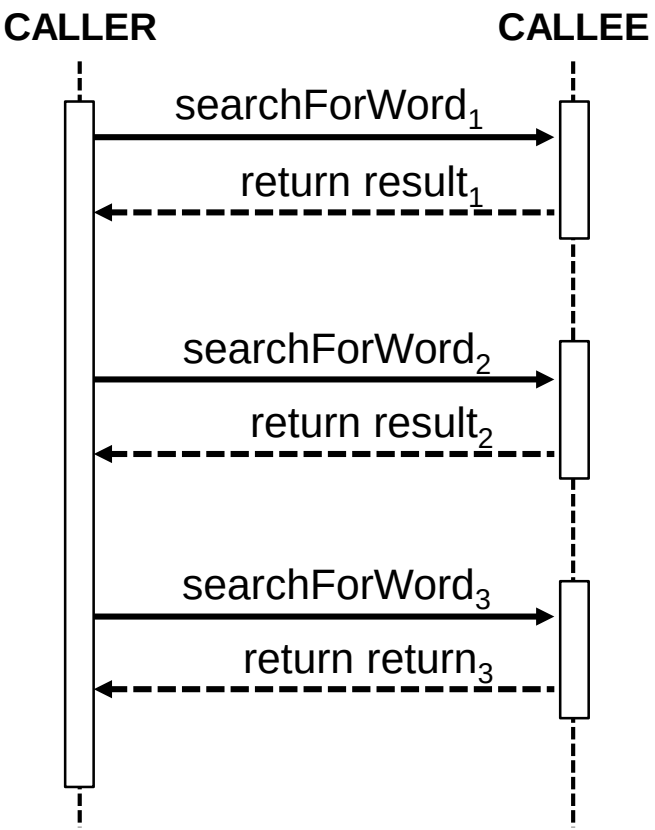

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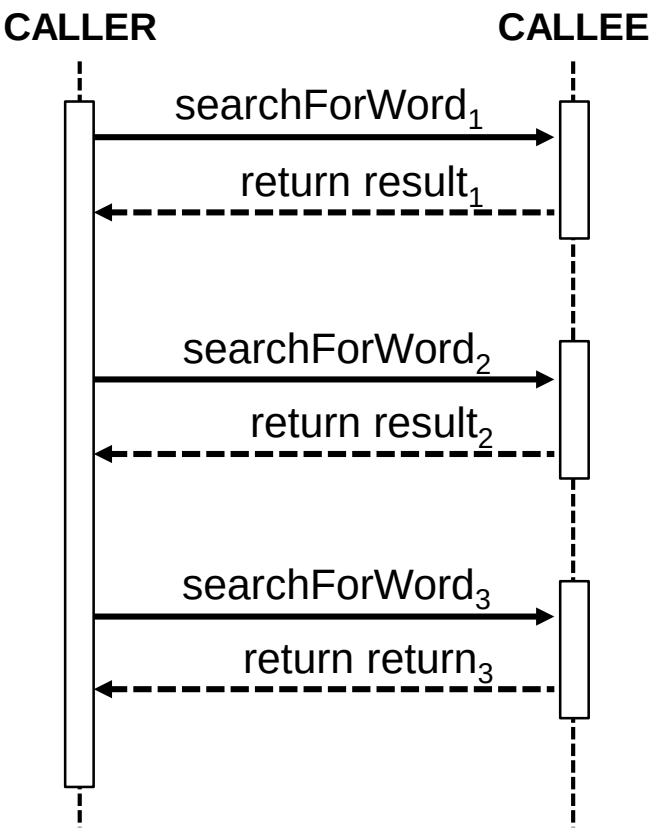
Efficient Performance

Efficient Resource Utilization



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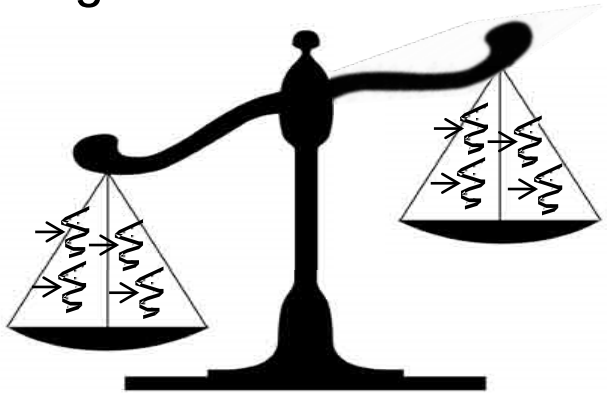

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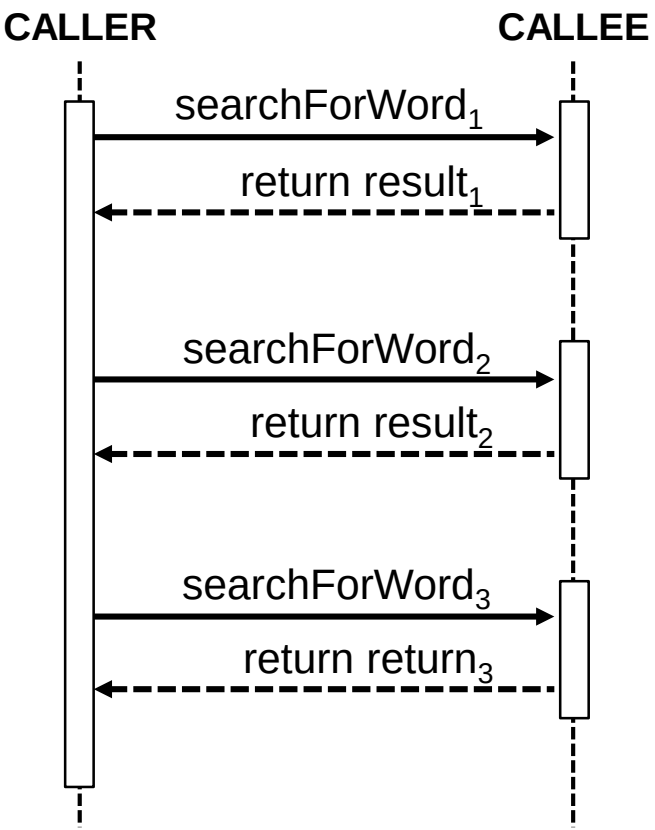

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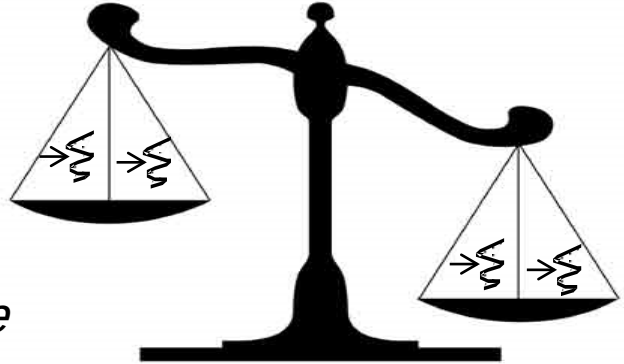

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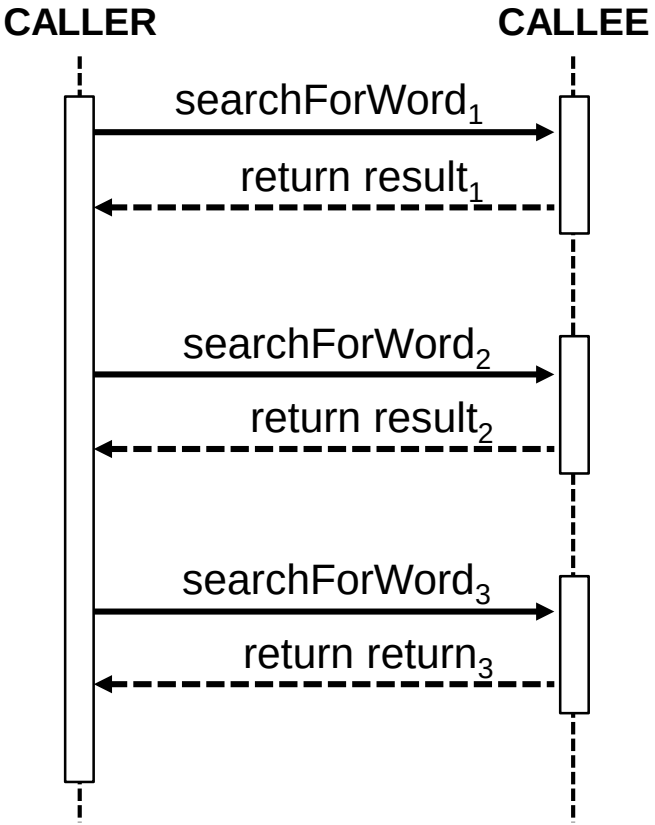

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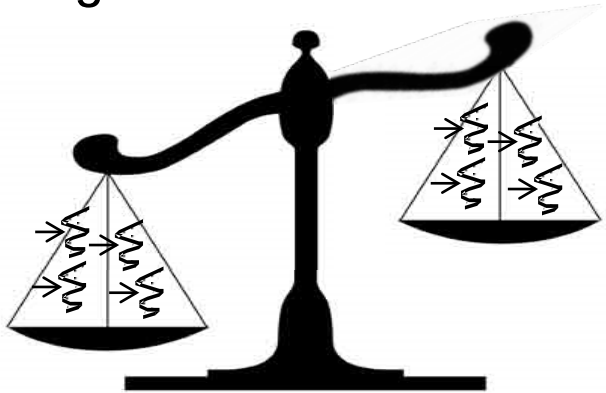

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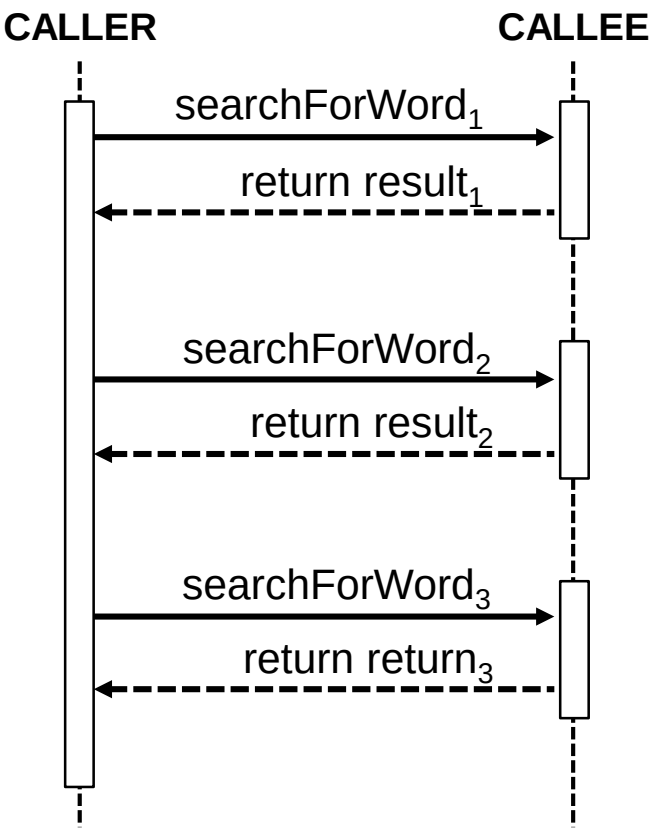

Particularly tricky for I/O-bound programs that need more threads to run efficiently

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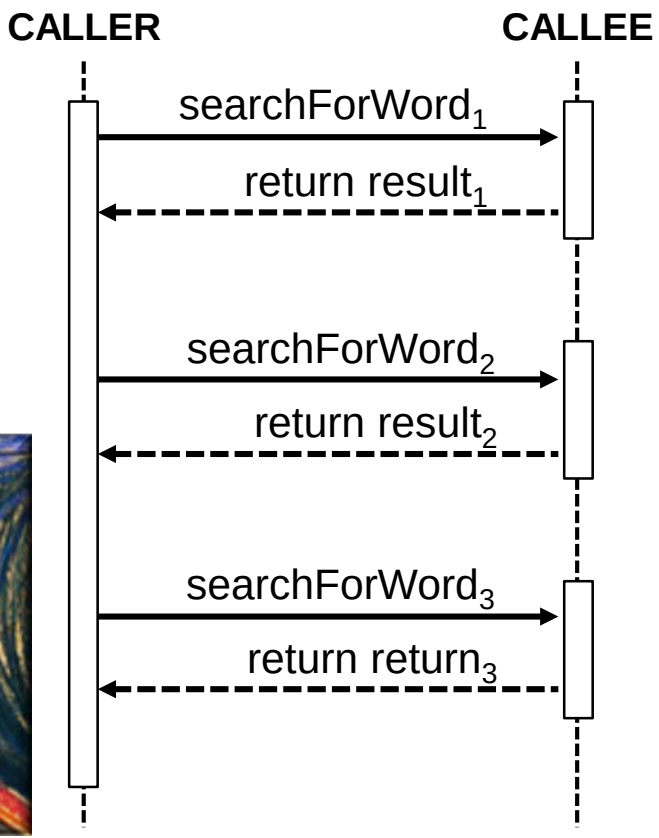
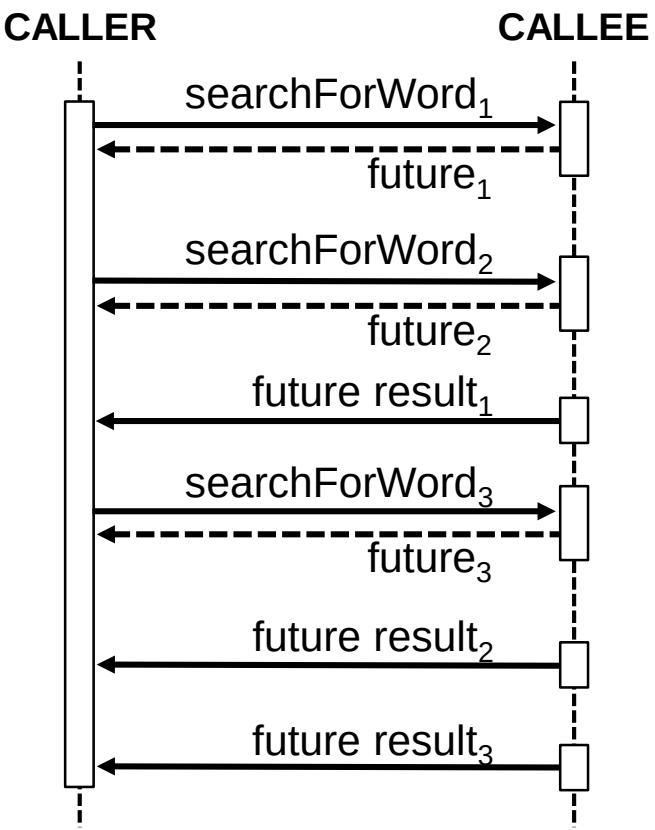
    - Synchronous calls may need to (dynamically) change the size of the common fork-join pool



See dzone.com/articles/think-twice-using-java-8

Motivating the Need for Completable Futures

- Another approach uses asynchronous calls & Java futures



See en.wikipedia.org/wiki/Asynchrony_(computer_programming)

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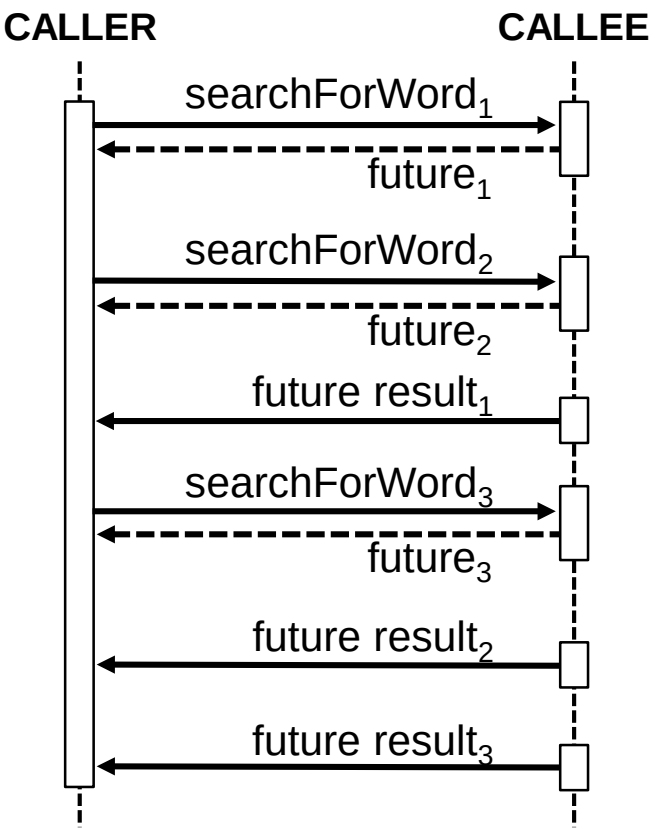

See docs.oracle.com/javase/8/docs/api/java/util/concurrent/Future.html

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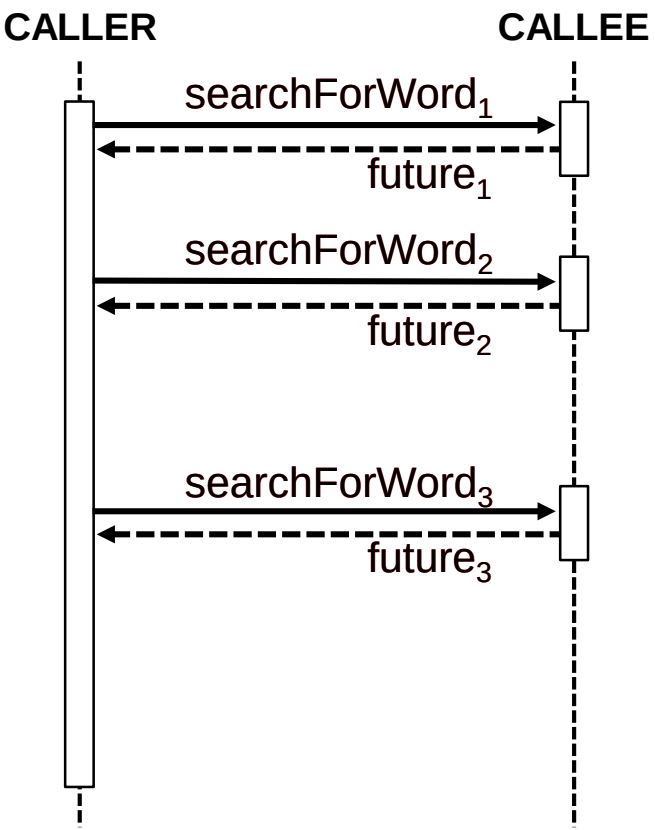

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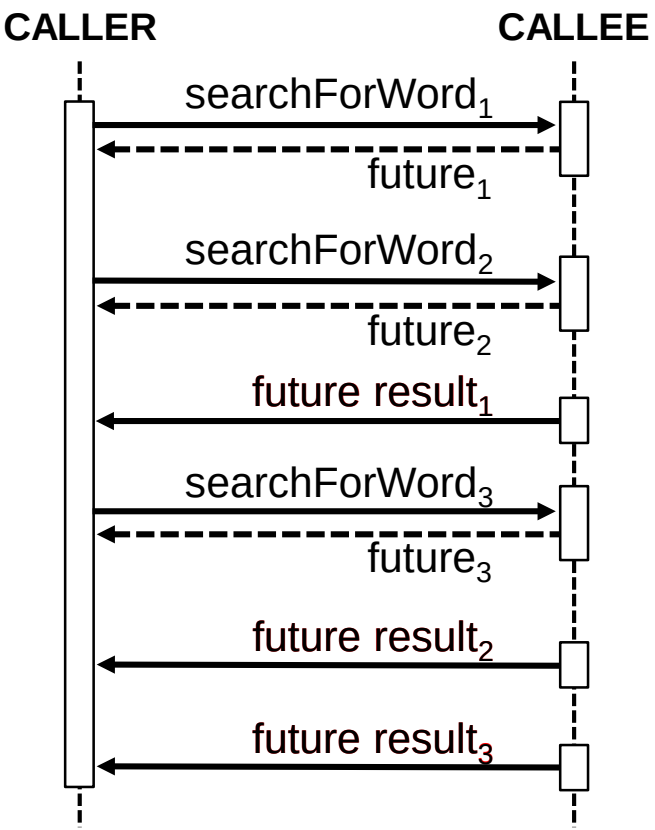

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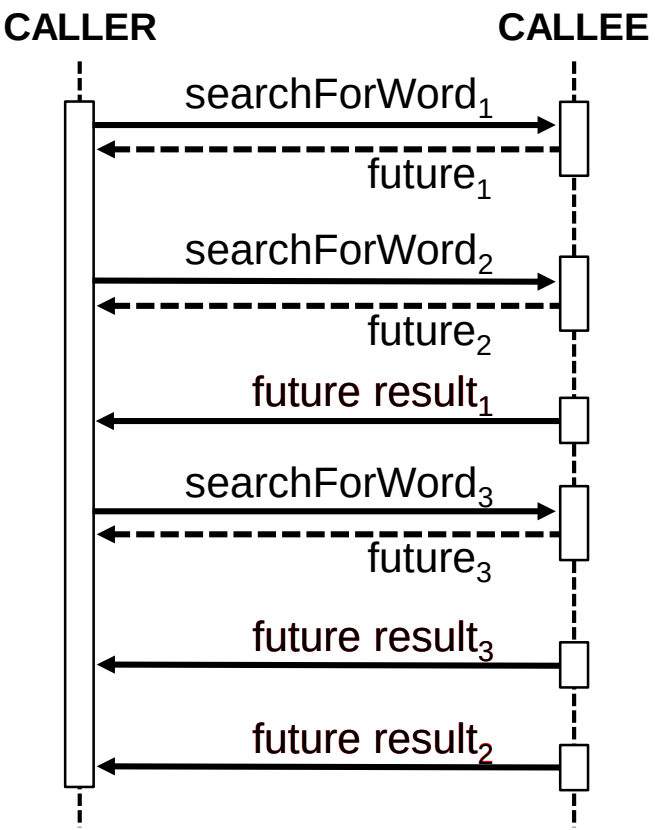
    - Results can occur in a different order than the original calls were made



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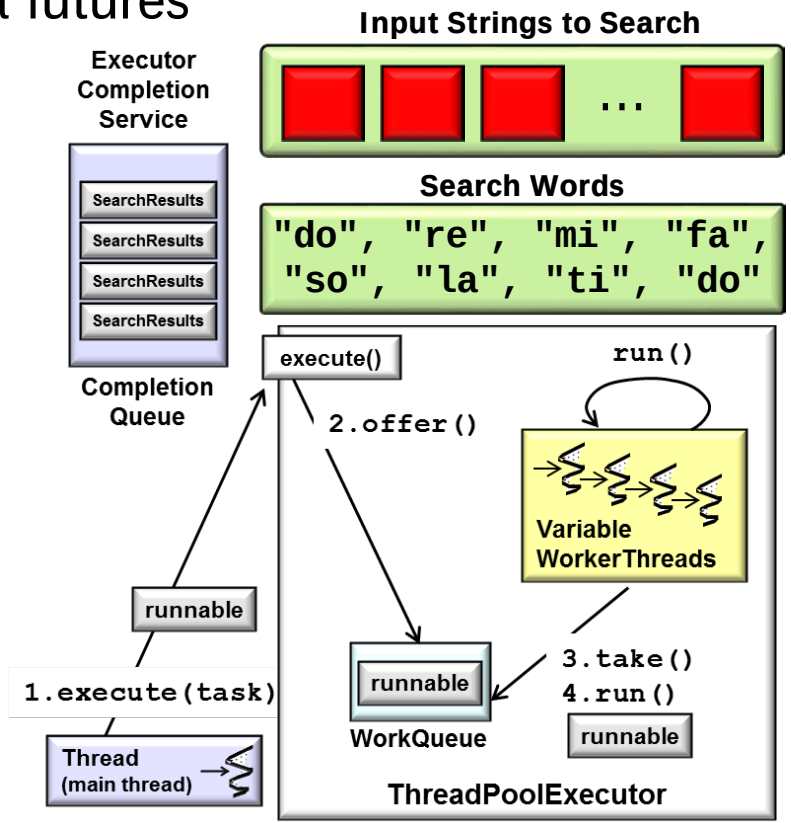

See Lesson 2.3 on the Java Executor Framework

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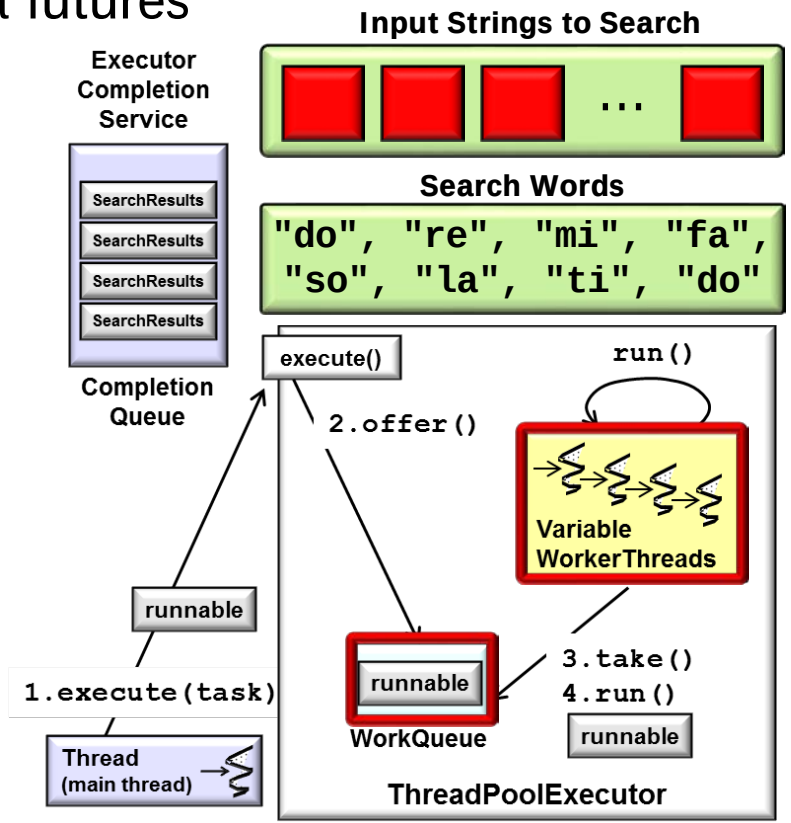

See github.com/douglascraigschmidt/LiveLessons/tree/master/SearchTaskGang

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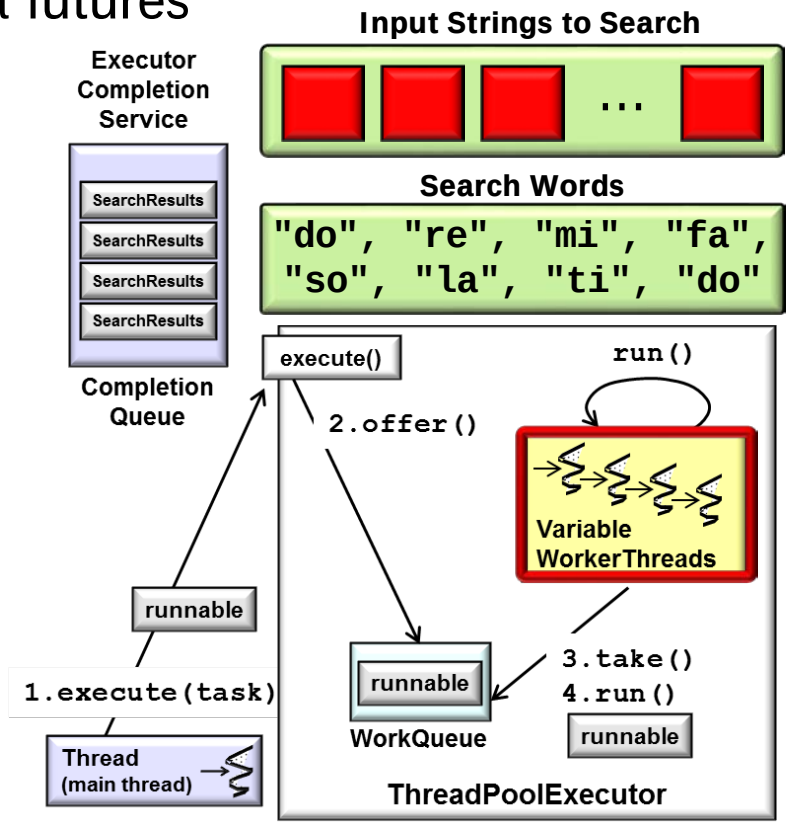

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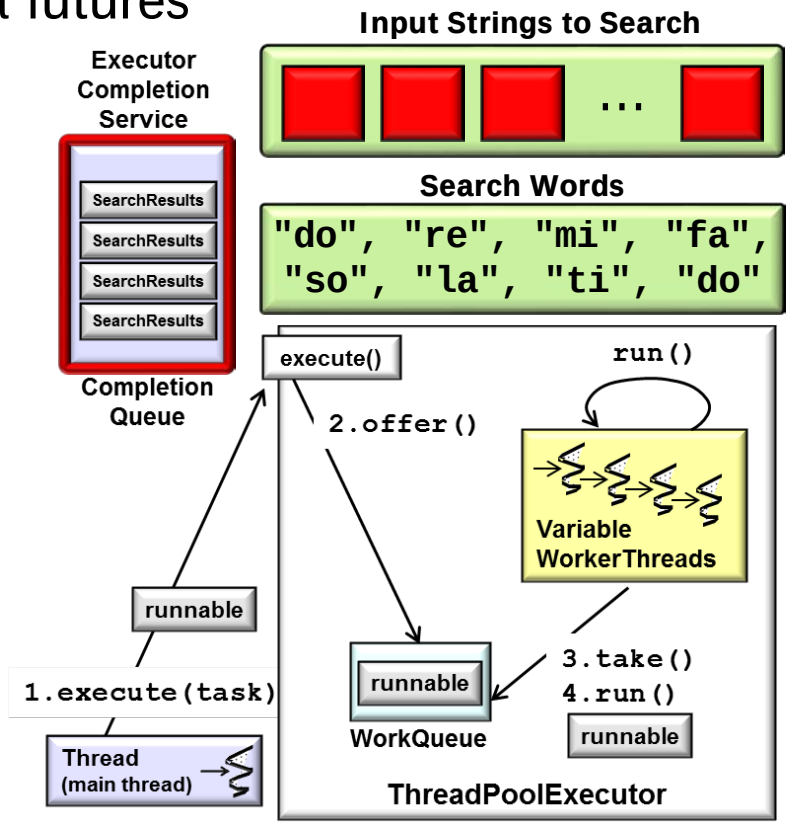
    - Array of futures can be triggered to get the results



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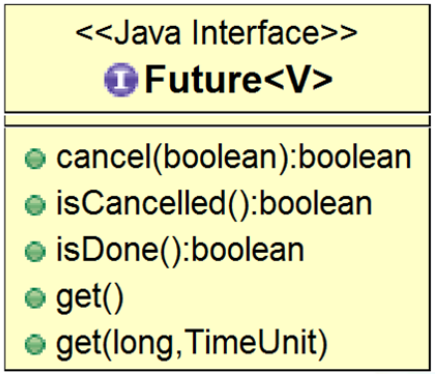

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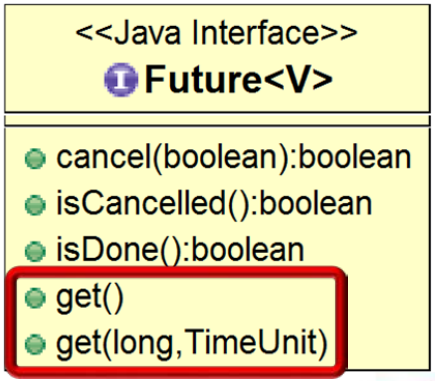

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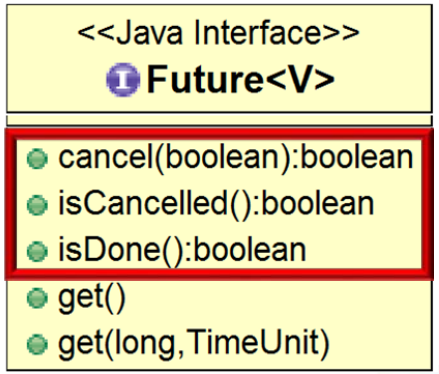

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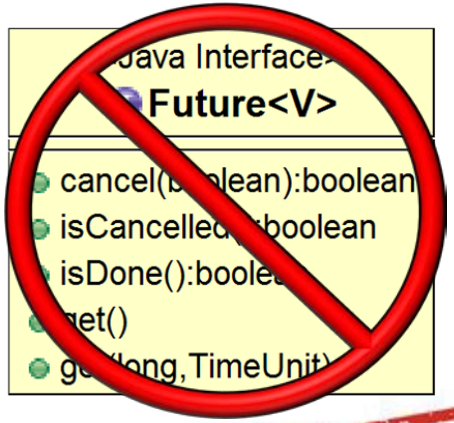

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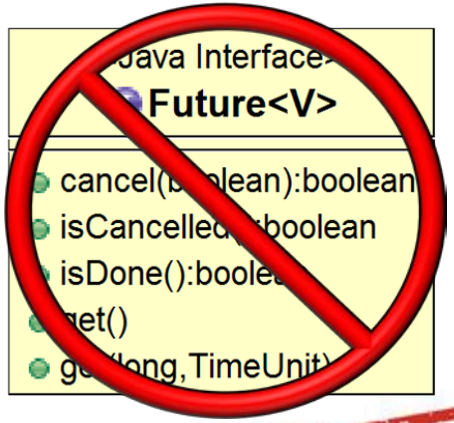

It's awkward & inefficient to try & "compose" multiple futures

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Java 8 completable futures are designed to overcome these limitations with futures

End of Motivating the Need for Java 8 Completable Futures