Advanced Java CompletableFuture Features: Applying Factory Methods

Douglas C. Schmidt
d.schmidt@vanderbilt.edu
www.dre.vanderbilt.edu/~schmidt

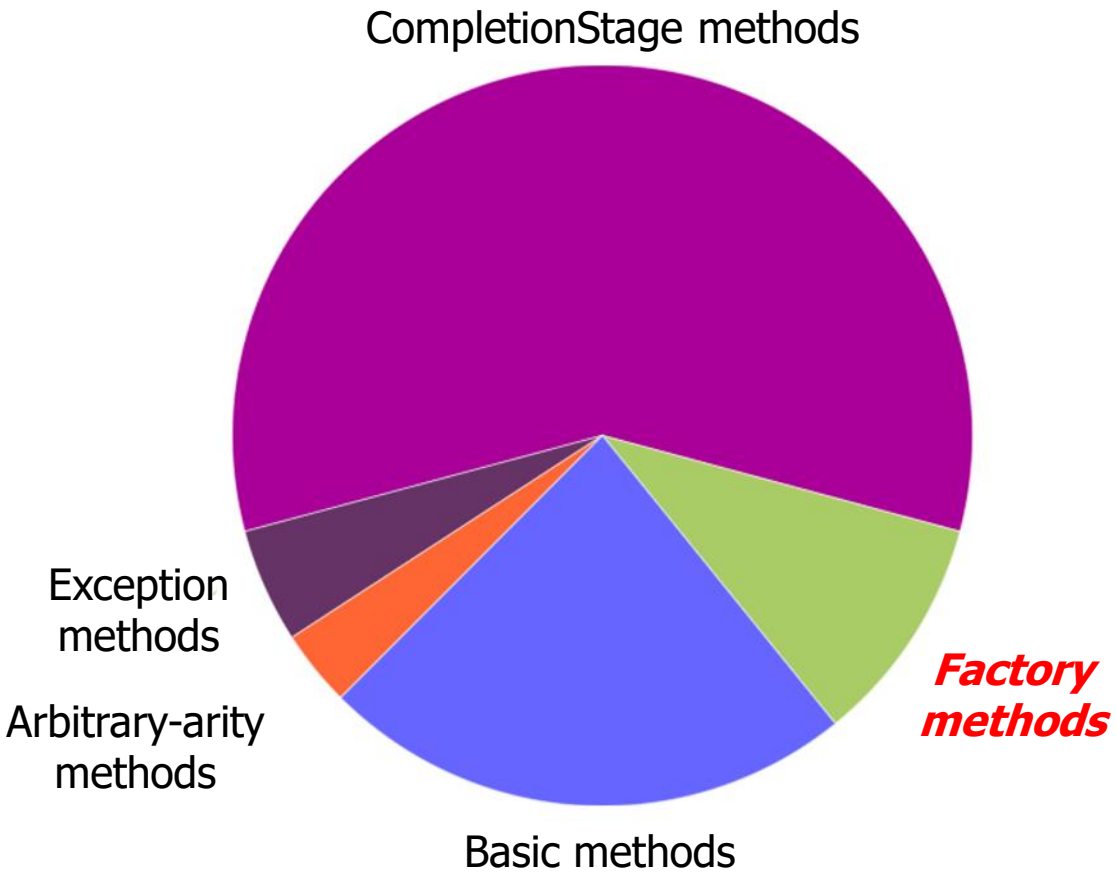
Professor of Computer Science

Institute for Software Integrated Systems

Vanderbilt University
Nashville, Tennessee, USA

Learning Objectives in this Part of the Lesson

- Understand advanced features of completable futures, e.g.
  - Factory methods initiate async computations
    - Applying factory methods



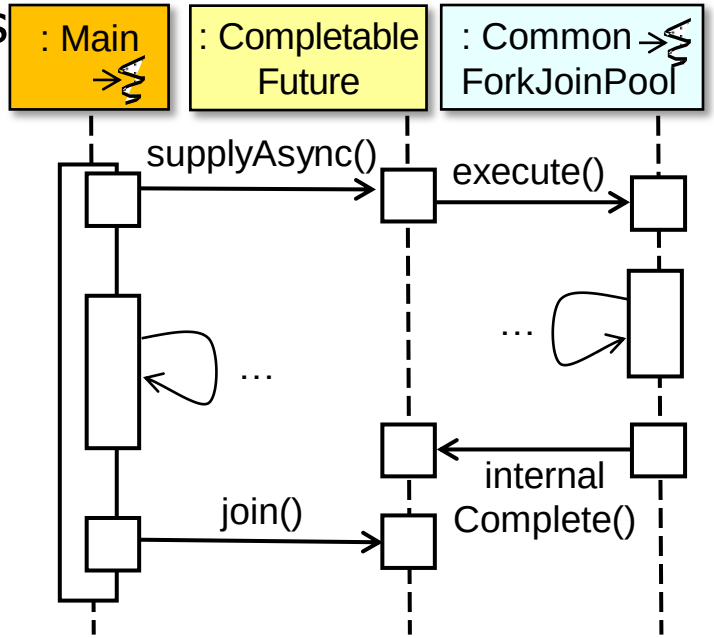
Applying Completable Future Factory Methods

Applying CompletableFuture Factory Methods

- Using supplyAsync() to multiply big fractions

```
String f1 = "62675744/15668936";
String f2 = "609136/913704";
CompletableFuture<BigFraction> future =
  CompletableFuture
    .supplyAsync(() -> {
       BigFraction bf1 =
         new BigFraction(f1);
       BigFraction bf2 =
         new BigFraction(f2);

       return bf1.multiply(bf2);
    });
...
System.out.println(future.join().toMixedString());
```



See github.com/douglascraigschmidt/LiveLessons/tree/master/Java8/ex8

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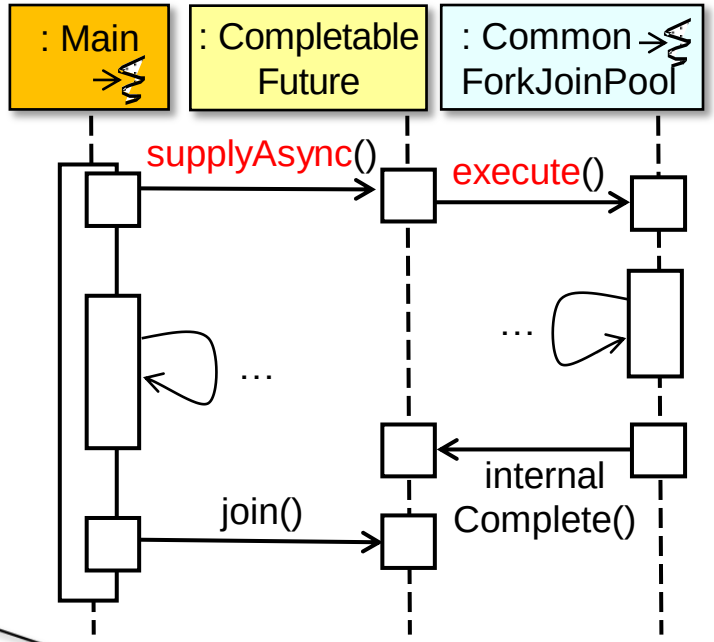

Arrange to execute the supplier lambda in common fork-join pool

See docs.oracle.com/javase/8/docs/api/java/util/concurrent/CompletableFuture.html#supplyAsync

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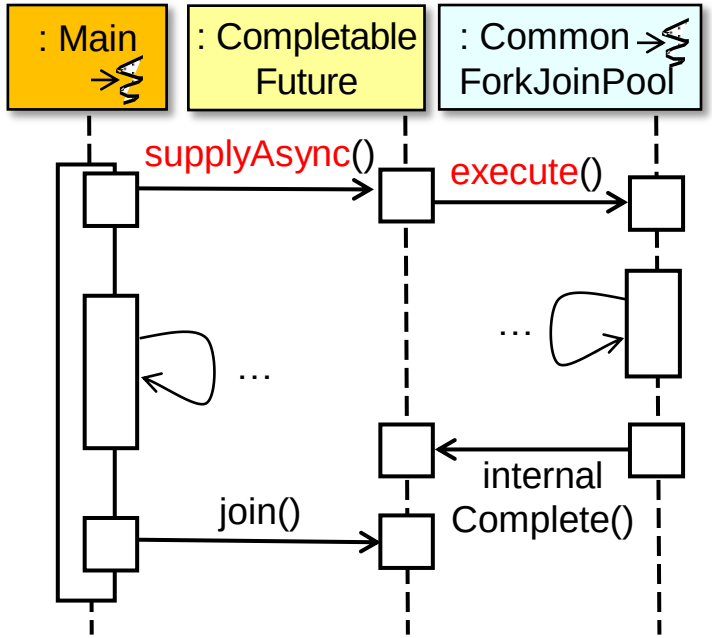

Define a supplier lambda that multiplies two BigFractions

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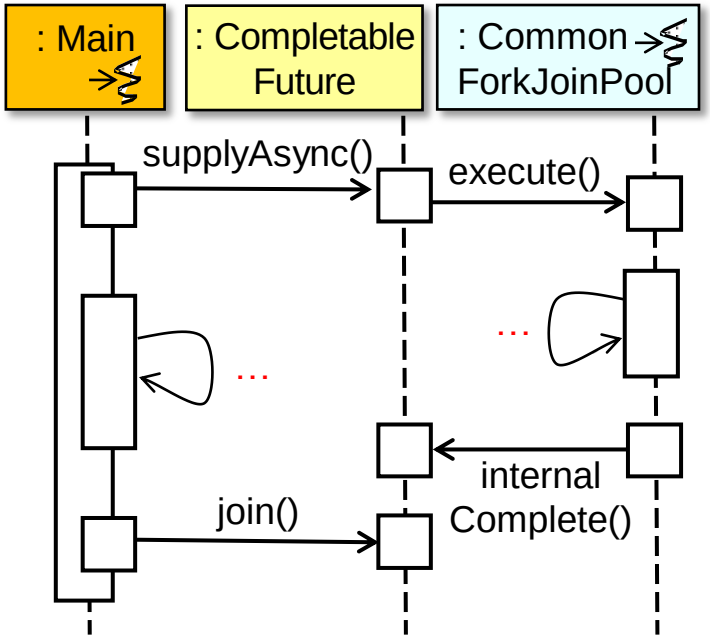

These computations run concurrently

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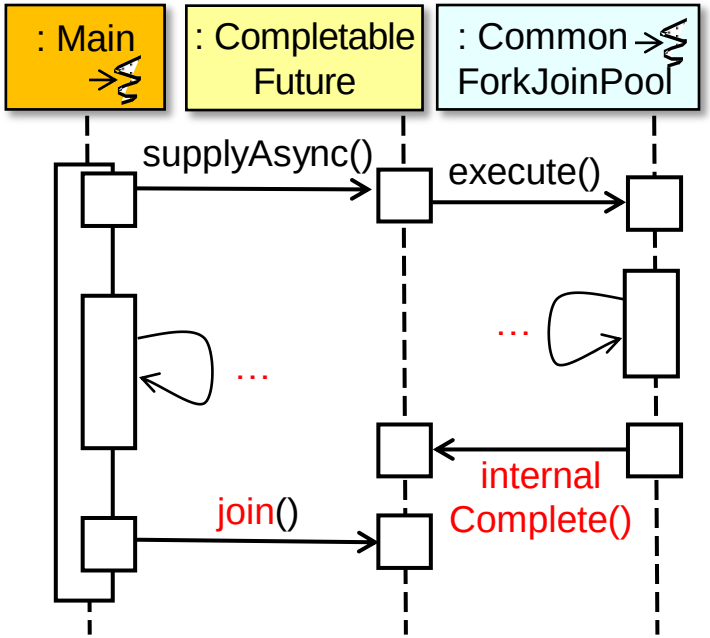

join() blocks until result is complete

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Calling CompletableFuture.supplyAsync() avoids the use of threads in this example!

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There's no need to explicitly complete the future since supplyAsync() returns one

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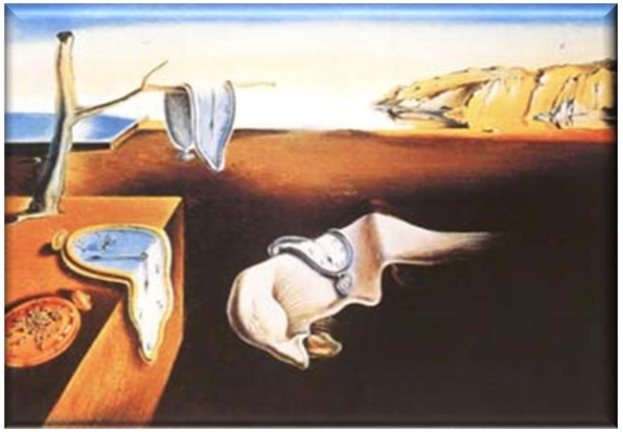

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However, we still must fix the problem with calling join() explicitly..

End of Advanced Java CompletableFuture Features: Applying Factory Methods